THE LEGAL REGIME OF INTERNATIONAL WATERCOURSES

PROGRESS AND PARADIGMS REGARDING USES AND ENVIRONMENTAL PROTECTION

Katak B Malla

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av Katak B Malla

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ABSTRACT

This study deals with the law of international watercourses that are shared by two or more States, the legal regimes of which have evolved significantly, especially in the past two centuries. The developments of and paradigm shifts in the legal regimes for the multiple uses and environmental protection are studied through an examination of different sources of international law since the early 19th century.

This study demonstrates the legal regimes from the perspective that navigational use, non-navigational uses and environmental protection of international watercourses are interrelated, and yet simultaneously in conflict. To strike a balance between the regimes of uses and protection, a conjunctive management between the various uses of the watercourse must be adopted that embraces also an integrated approach to the water and its relations with other natural resources as well as the environment.

The developments and paradigm shifts of the regimes are traced and shown by analyzing the transition of the various concepts and approaches (i.e., international river to international basin), substantive principles (i.e., absolute sovereignty to equitable utilization), implementation mechanisms (i.e., piecemeal to integrated management) and dispute settlement venues (i.e., adjudication to impartial fact-finding). Whether or not there has been a general shift of management paradigm from a piecemeal to the integrated management of international watercourses is also investigated.

An integrated management paradigm emerged in recent years with the widely perceived need for sustainable development and environmental protection of international watercourses, which has led to the recognition of equitable utilization as a general principle of international law. This has occurred alongside the increasing recognition of the need for integrated regimes governing water uses and protection. The present study has sought to outline how this is not a coincidental occurrence within the law, and demonstrates that this has been part of an overall trend in global water issues. The present state of the law recognizes developmental needs and environmental considerations as equal, establishing parity between the regimes of uses and protection of international watercourses.

Key words: *Legal regimes of navigational use, non-navigational uses and environmental protection; equitable utilization, sustainable development and integrated management.*

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CONTENTS

ABBREVIATIONS

AALCC	Asian-African Legal Consultative Committee
ACC	Amazonian Cooperation Council
AllER	All England Report
BAT	Best Available Technology
BCE	Before Christian Era
BEP	Best Environmental Practice
BFSP	British Foreign and State Papers
BYIL	British Yearbook of International Law
CERFSU	Cambridge Encyclopedia of Russia and the Former Soviet Union
CMC	Cauvery Monitoring Committee
CNAS	Center for Nepal and Asian Studies
CRA	Cauvery River Authority
EBWA	Encyclopedia Britannia World Atlas
EC	European Community
ECAFE	Economic Commission for Asia and the Far East
ESCAP	Economic and Social Commission for Asia and the Pacific
ECE	Economic Commission for Europe
ECEL	European Community Environmental Legislation
ECWFD	European Community Water Framework Directives
EDIL	Encyclopedic Dictionary of International Law
EEC	European Economic Community
EPL	Environmental Policy and Law
EWPHP	Encyclopedia of World Problems and Human Potential
FAO	Food and Agricultural Organization
FFCS	Feuille Federale de la Confederation Suisse
GAOR	General Assembly Official Record
GATT	General Agreement on Tariff and Trade
GETNC	Great European Treaties of Nineteenth Century
GLWQA	Great Lakes Water Quality Agreement
GPA	Gala Peace Atlas
GPP	General Policy Principles
HILJ	Harvard International Law Journal
HKH	Hindu-Kush-Himalayan
IAEA	International Atomic Energy Agency
ICIMOD	International Center for Integrated Mountain Development
ICJ	International Court of Justice
ICPR	International Commission for the Protection of the Rhine River
IDI	Institut de droit International
IELPS	International Environmental Law and Policy Series
ILA	International Law Association

ILC	International Law Commission
ILM	International Legal Materials
ILO	International Labour Organization
ILR	International Law Reports
IMO	International Maritime Organization
LNTS	League of Nations Treaty Series
MDPA	Mines de Potasse d'Alsace
MNRGT	De Martens Nouveau Recueil General de Traites
MNRT	De Martens Nouveau Recueil de Traites
MOU	Memorandum of Understanding
MRC	Mekong River Commission
MRT	De Martens, Recueil des Traites
NAFTA	North American Free Trade Area
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NBI	Nile Basin Initiatives
NDP	National Development Plans
NRF	Natural Resources Forum
NRJ	Natural Resource Journal
NYIL	Netherlands Yearbook of International Law
OECD	Organization for Economic Cooperation and Development
OJ	Official Journal of the European Community
PCIJ	Permanent Court of International Justice
PCIJS	Permanent Court of International Justice Series
PCIJSA	Permanent Court of International Justice, Collection of Judgement, Orders and Advisory Opinions (1931-40)
PCIJSB	Permanent Court of International Justice, Collection of Advisory Opinion (1922-30)
PP	Precautionary Principle
PPP	Polluter Pays Principle
RGDIP	Revue Generale de Droit International Public
SAARC	South Asian Association for Regional Cooperation
SADC	Southern African Development Community
SAP	Subsidiary Action Program
SLCD	State's Liability to Compensate Damage
SVP	Shared Vision Program
UNCED	United Nations Conference on Environment and Development
UNDoc	United Nations Document
UNDP	United Nations Development Program
UNEP	United Nations Environmental Program
UNESC	United Nations Economic and Social Council
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNGA	United Nations General Assembly

UNGAOR	United Nations General Assembly Official Records
UNRIR	United Nations Register of International Rivers
UNTS	United Nations Treaty Series
USTIAS	United States Treaties and Other International Act Series
WHO	World Health Organization
WMO	World Meteorological Organization
YIEL	Yearbook of International Environmental Law
YILC	Yearbook of the International Law Commission
ZACPLAN	Zambezi River Action Plan

PART I: OVERVIEW OF THE PROBLEM

CHAPTER 1: GENERAL INTRODUCTION

The importance of fresh waters to living beings is self-evident. Humans are unique in that they are capable of using and abusing water resources in ways contrary to this evidence; at the same time, they are also capable of efficiently utilizing these resources and sensibly restoring, protecting and improving them. However, there are a number of dominant views among scholars that need to be taken into consideration in any study concerning people's relationship with the earth's waters.

Depending on one's perspective, the earth's fresh water is either a *necessity of life,*[1]one of many in the biosphere, equal in importance to air, carbon and sunlight; or it is a *vital natural resource*[2] that is rapidly increasing in importance as demand skyrockets and supplies dwindle, a scenario that makes water crises and even wars seem entirely plausible; or it is a *commodity*[3] to be bought and sold on the free market, as is the case with oil, gas and coal; or it is above all *the greater common good*, which "represent the serving link, not just the link – the understanding – between human beings and the planet they live on."[4]

Within all these perspectives, the issues of fairness, equity and justice are pervasive. In this regard, the legal aspects are of great importance to the study of the world's fresh waters, which constitute approximately 2.5% of the earth's total water supply.[5] A small fraction of that, 0.4%, are surface fresh water sources, and 0.9% of that is made up of rivers and lakes. The present study is concerned with more or less than 0.4% of the earth's fresh water that flows in *international rivers*, i.e. rivers shared by two or more States. These are also referred to as *international drainage basins*, *transboundary watercourses*, and *international watercourses* in the parlance of public international law.

The international rivers have, since time immemorial, served the varying needs and interests of humanity, nurturing civilizations in the long course of human history. Historical records indicate that in ancient times, the foremost uses of fresh water were drinking, irrigation and, later, navigational use for commercial purposes.[6] In modern times, especially

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[1] Agenda 21, Chapter 18, *Report of the UNCED*, 1992, UNDoc.A/Conf.151/26/Rev.1, Vol.1, see also <http://www.un.org/esa/sustdev/agenda21chapter18.htm> (visited Nov.9, 2004).
[2] Ibid.
[3] Article XI of the 1994 GATT (33 *ILM*, 1994, p.9) and Article 309 of the 1993 NAFTA (31 *ILM*, 1993, p.296); Bottled waters are schedules under tariff see, "Water as a Commodity", Dendauw, 2000, pp.1-46.
[4] Roy, 1999, pp.1-38.
[5] Bloom, 1969, Chapter 1.
[6] There are several ancient examples. In the ancient civilizations of Mesopotamia, the Tigris and the Euphrate rivers were canalized for drinking water supply and irrigation. In ancient Egypt, the Nile River was canalized for drinking and irrigation as well as used for navigational purposes (Hawakes J and Woolley L, *Prehistory and Beginning of Civilization* 1963, p.619). Boats were sailed in the fifth millennium BCE (Cary M, *The Geographic*

with the rise of modern nation-states, international rivers serve as natural links between riparian States as well as providing political boundaries to separate two or more States. Not all inland waters are navigable, but inland navigation is significant.

Some international rivers are navigable which are used as waterways, while others are used for multiple uses such as drinking water, irrigation, hydroelectricity production, etc. These watercourses, which can be seen as the arteries and veins of the natural environment, are increasingly being used for multiple purposes. As a result, the pollution and degradation of these watercourses is also increasing. Of the world's major rivers, 158 rivers are severely polluted as a result of their use and in some cases misuse.[7] Of these 158 rivers, 56 are classified as damaged watersheds "carrying annual discharges of sediment from drainage basins into the oceans,"[8] in turn affecting the world's weather conditions resulting in global climate change.[9] The dumping of waste into the watercourses is harming human health; approximately 80% of all diseases and over one third of all deaths in developing countries are reportedly caused by the consumption of contaminated waters.[10]

As a result of their extensive use, some of the world's rivers and lakes have dried up to the point of no return, while some others are dammed, resulting in far-reaching environmental changes. These changes are generally categorized into three orders of change: the first order encompasses hydrological changes, including water quality; the second order affects channel morphology and aquatic, riparian, and flood plain vegetation; and the third order affects vertebrates and fish.[11] The hydrological or climate-related change results in water scarcity or drought in some regions, and severe flooding in others. It causes harm to human health and property, which in effect increases the environmental/water resource insecurity and contributes to inter-State conflicts.

1.1. Classification

There are different sources of the earth's fresh water, which are used by different entities for various purposes. These sources, entities and purposes

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Background of Greek and Roman History 1949, pp.251-52). Roman Law provides for rules relating to irrigation and navigation (*Digest of Justinius* 40.20. 3 and 43. 12.2; Ware E, *Roman Water Law* 1905, p.108). In ancient China, canals were built and supervised by local officials (Lee M, *The Economic History of China* 1921, p.18). In India, rivers bear the living associations of the history and civilization *Mountains and Rivers of India,* 21st International Geographical Congress, National Committee for Geography India 1968, p.187).

[7] *GPA*, 1988, pp.62-63.

[8] Ibid, p.120.

[9] Once estuaries and the territorial seas are affected either by pollution or by sediments carried by rivers, the hot and cold-water currents of the sea are affected, which in turn affect the weather conditions. According to most scientists, the degradation of the estuarine zone is one of the factors (among other reasons) contributing to global climate change.

[10] Agenda 21, Chapter 18 (47); Gleick, 1993, pp.141-149.

[11] *EWPHP*, 1986, p.6835.

involve situations which give rise to a variety of legal meanings and interpretations. Before defining the focus of this study, it is necessary to provide a general classification of these aspects of water as a part of the introductory background.

On the earth's surface there are fresh waters in the form of rivers, lakes, icecaps and glaciers; under the earth's surface there are groundwaters in the form of aquifers and saturated groundwaters; and, there are atmospheric waters in the form of precipitation, clouds and rains. One of the main characteristics of the earth's fresh waters is that it may transcend man-made (State) boundaries. This transcending character signifies that it belongs to the category of common resources shared by two or more States. Because these waters are governed by different systems of law, within and across State boundaries, they fall into different classifications, depending on the national and international character of law. Thus, it is useful for this study to take into account the classification of waters from the point of view of different legal rules.

Where a river flows from the source to its mouth, within a State boundary, such a river is classified as a *national river*, and the State essentially owns it, considering it as *national waters*.[12] These consist of lakes, canals, rivers and their mouths, which may include the salt waters of ports and harbors, sometimes waters near the land of fringing islands, and some gulfs and bays.[13] National waters may be *provincial water* situated within the boundary of a province or a federal State.[14] Also falling within the category of *national waters* may be *inter-provincial waters,* which include surface waters that flow across the boundary of one province to another or between a province or a territory.[15] The *federal water*, another classification of national waters, includes waters within federal States, as well as marine waters of any federal province.[16]

International rivers and lakes are classified in international law as *inland waters*, which mean surface water that flows across international boundaries between two or more States or is situated on both sides of an international boundary. This type of water may be rivers, lakes, canals, and straits which cross State boundaries. *Boundary waters* include the surface water, across which passes the boundary of two or more States, including rivers, lakes or streams as well.[17] The boundary is customarily determined to be the middle of these lakes, rivers and canals, unless otherwise provided.[18] Boundary waters are also classified as *transboundary waters*,

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[12] Oppenheim, 1955, pp.463-476.
[13] *MNRGT*, 1987, p.774.
[14] This kind of classification of water is only suited where a country is divided into provinces or federallized States.
[15] MacNeill, 1973, pp.153-174.
[16] Ibid, p.156.
[17] Cukwurah, 1967, pp.45-83.
[18] The 1909 Treaty between the United States and Canada defines boundarywaters as the waters from main shore to main shore of the lakes and rivers and connecting waterways, or

which includes *contiguous* or *successive* international rivers. They include transboundary flooding as well as *underground waters* situated on both sides of an international boundary.[19] These waters are also classified as *interjurisdictional waters* under international law based on territorial jurisdiction of States. Regarding sovereignty of States, while the *boundary river concept* involves two or more sovereignties, the *contiguous river concept* is indicative of a joint, if not dual, sovereignty. Successive rivers are those rivers which run successively through two or more States, which are also classified as *pluri-national* or *multinational rivers*.[20]

Except for the flowing characteristic of river waters, *international lakes* are just like international rivers, particularly those lakes which are situated on borders of two or more States.[21] Both the lake and land-locked sea may be considered as part of international drainage basins or watercourse systems in terms of an international hydrologic cycle. Large international lakes possess characteristics of an open sea, except in the freshness of their water and the absence of their ebb. However, they are not considered as open sea.[22] The majority of the literature considers these lakes to be part of the surrounding territories, but there is dissenting literature that asserts that lakes do not belong to riparian States but are free, like open seas. Some are reluctant to categorize these waters as international waters, recognizing a special arrangement made with respect to navigation, fisheries and the non-navigational use of lakes. Others have also pointed out that there is no

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the portions thereof, along which the international boundary between the United States and the Dominion of Canada passes, including all bays, arms and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, river and waterways, or waters flowing from such lakes, rivers and waterways, or the waters of rivers flowing across the boundary. See, *ST/LEG/SER.B/12*, Legislative series Treaty No.79.

[19] Article 1(1) of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes 1992 (Helsinki, UN/ECE), provides that transboundary water means: "any surface or ground waters which mark, cross or are located on boundaries between two or more states; wherever trans-boundary waters flow directly into the sea, those trans-boundary waters end at a straight line across their respective mouths between points on the low-water line of the bank." See, 31 *ILM*, 1992, p.1312.

[20] Oppenheim, 1955, pp.446-447.

[21] For an example, Lake Constance is surrounded by Germany, Austria, and Switzerland. Lake Geneva belongs to Switzerland and France. The lakes Huron Erie, and Ontario belong to Canada and the United States.

[22] *EBWA*, 1963, p.384. The world's 35 largest lakes are: the Caspian Sea, Azerbaijan, Kazakhstan, and Turkmenistan, as well as parts of Russia and Iran; Lake Superior, USA-Canada; Lake Victoria, east central Africa; Aral Sea, Kazakhstan and Uzbekistan; Lake Huron, USA-Canada; Lake Michigan, USA; Lake Tanganyika, east central Africa; Lake Buikal, Russia; Lake Great Bears, Canada; Lake Nyssa, east central Africa; Great Slave Lake, Canada; Lake Chad, central Africa; Lake Erie, USA-Canada; Lake Winnipeg, Canada; Lake Ontario, USA-Canada; Lake Balkhash, Kirgizstan; Lake Ladogu, Russia; Lake Orega, Russia; Lake Titicaca, Bolivia-Peru; Lake Nicaragua, Nicaragua; Lake Athabaska, Canada; Lake Rudole, east Africa; Lake Reindeer, Canada; Lake Issyk-Kul, Kyrgyzstan; Lake Urmia, Iran; Lake Vånern, Sweden; Lake Winnipegosis, Canada; Lake Albert, Republic of Congo-Uganda; Lake Nipigon, Canada; Great Salt Lake, USA; Lake Kokonor, China; Lake Mwerurortherrhod, Republic of Congo; Lake Dubawat, Canada; Lake Van, Turkey.

general rule on the suitability of lakes as boundaries; each specific situation requires specific rules.[23]

A *bay* can also be considered as a part of a river in the cases where the bay is a part of the estuarine.[24] For a *strait* to be seen as a part of a river basin, there must be a steady outflow of waters. Straits with which international law is concerned are straits used for international navigation. It is generally recognized that in such a strait there must be freedom of navigation in such a manner that the passage of vessels will not be impeded.[25] One kind of *international canals* are referred to as canal joining two seas, e.g. the Panama and Suez canals. Another kind of canals are river canals, e.g. the canals joining the Rhine and Danube rivers. These canals may differ in terms of use, i.e. either as a navigational route and/or as an irrigation canal.

Depending upon the freshness or particular setup of chemicals, the earth's waters are referred to as the *fresh waters* and *salt waters*.[26] The fresh waters constitute the earth's rivers, lakes, streams, ground or underground water and the ice caps at the two poles and within high mountains.[27] Besides the sea waters, salt water is found in lakes such as the Dead Sea and the Caspian Sea. The high seas are beyond national jurisdiction, which are also known as *international waters*. However, there are differences between rivers or lakes as international waters, and the high seas as international waters. The former is fresh water and the latter is salt water. Fresh waters and salt waters are regulated by different legal regimes in national and international law.

The international waters, as used in the law of the sea with respect to high seas, share some similarities with the concept of international water as used in the context of international rivers. The commonality is that waters, which are not within the national jurisdiction, are called international waters. However, unlike the high seas, international rivers arguably fall within two or more State jurisdictions. The *territorial seas* are also known as

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[23] Yu, 1991, pp.989-998.

[24] The Bay of Bengal, the Hudson Bay and the Persian Gulf (bay) are well known bays connected to rivers.

[25] A bibliography of the classic writings concerning the legal aspects of international rivers, see Oppenheim, 1955, pp.463-464.

[26] Natural science defines water as dihydrogen-oxide or H2O, classifying waters either as hard water or as soft water on the basis of the particular set-up of chemicals. Having recognized the scientific definition, the legal writings, for example *YIEL* published since 1990, focuses on "fresh waters", dealing with rivers and lakes.

[27] The Council of the European Communities Directive 76/464/EEC, May 4, 1976 (on Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment of the Community) Article 1(2) (c) has fixed the limit of the fresh waters. According to this Article, fresh water limit means the place in the watercourse where, at low tide and in a period of low fresh water flow, there is an appreciable increase in salinity due to the presence of seawater. Other European Union directives related to fresh water include bathing, drinking, irrigation, industrial use, etc., see *ECEL*, Water, Vol. 7, 1992.

national waters, which are under the sovereign control of coastal States.[28] This includes *internal waters* consisting of bays and shores, as well as waters behind the baseline connecting the outermost islands. *Internal water areas* are within the inner limit of the territorial sea, but do not include fresh waters on the land territory,[29] which are regulated by special maritime regimes different from other maritime zones.

The two most important classifications of international rivers that are used in this study are the navigable and non-navigable rivers, which can be either national or international. *Navigable rivers* are those, which are deep and wide enough to allow ships to travel.[30] *Non-navigable rivers* lack the necessary width and depth for navigation.

1.2. Focus and Objectives

International regulations relating to watercourses shared by two or more States generally concern three main categories of issues, namely navigational, non-navigational uses and environmental protection. These regulations are understandably interrelated, and not so seldom at the same time conflicting. The objectives of the present study are:

- To describe the development of the legal regimes of multiple uses and environmental protection of international watercourses with due focus on the interrelating and competing character of relevant legal rules. This is done by examining the different sources of international law[31] in a historical perspective, focusing on concepts and approaches, substantive principles and institutional mechanisms, as well as dispute settlement rules;
- To investigate whether or not there has been a shift from an approach based primarily on water use, evolving towards the cooperative, environmentally-focused management of international watercourses; and whether or not the State's approach has shifted from one of piecemeal cooperation to the integrated management paradigm, including integration between the multiple uses and/or uses and protection;
- To illustrate how the existing law balances between the increasing need of the international watercourses' development and the urgency of

[28] MacNeill, 1973, pp.153-174.

[29] Bangert, 1992, pp.43-60.

[30] For example, the Saint Lawrence River is navigable from the Great Lakes to the Atlantic Ocean.

[31] Article 38 of the Statute of the ICJ is generally considered to have spelled out the sources of international law, which are: a) International Conventions, whether general or particular, establishing rules expressly recognized by the contesting States; b) International custom, as evidence of a general practice accepted as law; c) General principles of law recognized by civilized nations; and d) Judicial decisions and the teachings of the most highly qualified publicists of various nations, as subsidiary means for the determination of rule of law. The Court may also apply the principles of equity if the parties of the case agree thereto.

their environmental protection, embracing the principles of equitable utilization and sustainable development.

The law of international watercourses provides for the rules governing the world's international rivers, covering drainage basins shared by two or more States,[32] and thereby balancing the needs and interests of the States sharing the watercourse basin as to the uses and protection (or both). A significant number of transboundary watercourses are the subject of cooperation and/or conflicts, depending upon the competing needs and interests of the States concerned. The riparian State treaties have, for over two hundred years, been instruments for conflict resolution and cooperation, indicators of recognition of the shared needs and interests that transcend political borders. The evolving content and language of riparian State treaties over time, reflect changing water needs and the progress of its use as well as attempts to mitigate the shared watercourse related problems.

Originally, the primary need for these treaties was for the demarcation of State boundaries, and for the settling of trade and commerce issues relating to the use of navigable waterways. Subsequent matters that arose included irrigation and industrial needs, hydroelectricity development and later recreational uses, as reflected in the expression non-navigational uses.

More recently there has been a rise in awareness that the lack of availability of water, in its various forms, has a crippling effect on all aspects of human life. This awareness, coupled with regional and global attempts to address the environmental degradation of the world's water supplies, has inspired an integrated approach to international watercourse management.

In this study, the multiple needs and interests of the riparian States as they are expressed in the legal regimes of navigational use, non-navigational uses and environmental protection have been dwelled upon. Utilization of international watercourses has been a source of practical as well as theoretical controversy for a long time, especially as it concerns the rights of riparian States.

The theory of *absolute sovereignty*[33] was asserted, arguing that a State may dispose freely of the waters flowing in its territory without any consideration of others (in particular, downstream States). This assertion recognized no restraint on a State's use of water in its territory. An antithesis to the theory of *absolute sovereignty* eventually evolved, known as

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[32] The number of the international rivers and drainage basins vary from one source to another. According to the *UNRIR*, there are 214 international rivers see, *UNRIR*, Center for Natural Resource, Energy and Transport of the Department of Economic and Social Affairs, 1978, p.3.

[33] The United States' Attorney General Judson Harmon gave such an opinion in late 19th century concerning the Rio Grande River shared by the United States and Mexico. For a detailed analyses of the *Harmon Doctrine* in the United States Practice see, McCaffrey, 2001, Chapter 4.

the theory of *territorial integrity*[34] or *natural flow of rivers*, which holds that a State has the right to demand the natural flow of water both in terms of quality and quantity.

Synthesis of these two theories emerged, known as the *community interest of the riparian States*.[35] This means that the sovereignty of State is relative and riparian States need to consider each other's needs and interests.[36] The notion the community interest of the riparian States gives rise to two important questions: Should the common interests of navigational use of international rivers be a common interest of riparian and non-riparian States? Should the multiple uses and environmental protection of international watercourses be the common interest of the world community at large? An analysis of some relevant cases decided by international courts[37] and of the theory of riparian rights may furnish some answers to these questions.

The doctrine of the *riparian rights*, which is recognized by the major legal systems of the world, means that the riparian States have an entitlement to the flow of waters undiminished in quantity and unchanged in quality.[38] An antithesis to this doctrine emerged in the form of *prior-appropriation rights*,[39] which means that the first use takes priority over the later use. A synthesis of these two theories eventually evolved into the so-called *hybrid rights*,[40] which is a combination of arguments that have been incorporated into the idea of *equitable appropriation*.[41] This means that each basin State is entitled to a *reasonable, equitable share* and *beneficial uses*.[42] The principle of equitable utilization represents a synthesis of several classic theories of water rights. Above all, the rationale behind any kind of utilization of international watercourses is *participation* by the riparian States.

The principle of *equitable utilization* is now a well established principle of law, as evidenced by State practice, and has found expression in the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses 1997 (hereinafter referred to as the "1997 UN

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[34] Pakistan had argued the theory of "territorial integrity" against India concerning the Indus River. The controversy between the two countries was settled by the 1960 Indus Water Treaty see, *ST/LEG/SER.B/12*, Legislative series Treaty No.97.

[35] *River Oder Case* 1929 (*PCIJS/A,* 1929, No.23) is discussed in Part VI.

[36] *Lake Lanoux Arbitration* 1957 (*ILR*, 24, 1957, pp.101-142) is discussed in Part VI. The Italian Court of Cassation in *Mediterancen v. Compagnia Imprese Elettriche Liguri* (1939), affirmed the principle of *a community of ownership* of water with respect to shared resources, see *Digest of Public International Law Cases,* 1938-1940, p.120.

[37] *Gabcikovo-Nagymaros Project Case* 1997 *(ICJ Reports,* 1997, pp.1-72) is discussed in Part VI.

[38] The notion of riparian rights developed from Roman Law see, Ware (Ware E, *Roman Water Law)* 1905.

[39] *Wyoming v. Colorado*, 259, US, 419 (1922) as reproduced in Sherk, 2000, pp.431-432.

[40] A notion of hybrid rights see, Ashworth, 1991, pp.189 and 421.

[41] The term *equitable appropriation* was used in *Nebraska v. Wyoming*, as reproduced in Sherk, 2002, pp.313-324.

[42] Article IIof the 1966 ILA Helsinki Rules, *Report of the ILA Fifty-Second Conference*, Helsinki, 1966, pp.447-531.

Convention").[43] This principle underpins the classic theories of water rights, and constitutes the basis for legitimacy of watercourse uses and requires watercourse States to strike a balance among all relevant factors (Articles 5, 6 and 7 of the 1997 UN Convention) for managing watercourses.

The law of international watercourses has undergone a considerable development over the past two centuries. This can be seen in terms of transitions of concepts from international river to international drainage basin; in terms of theories, from absolute sovereignty to the equitable utilization; and regarding institutional arrangements, from a piecemeal to the integrated management.

Especially in the 1990's there was a rapid development of the law through the adoption of three regional and one global conventions and two important decisions of the International Court of Justice (ICJ). This development is of particular significance for elaborating how the contents and procedures of relevant law have evolved in terms of concepts, theories and management paradigms. It also can throw light on the modern law relating international watercourses, reflecting a balance between multiple uses and environmental protection.

1.3. Scope and Limitations

The law of international fresh waters is loosely defined as "a branch of public international law including the accepted legal norms on all sorts of usable waters, lakes and underground or interstate rivers."[44] Studies on legal aspects of international watercourses have not been limited to public international law. In recent years these aspects have been addressed in other fields of law, e.g. private international law as regards international companies dealing with hydroelectric production.[45] This shift of domain from public international law to private international law, which remains controversial from the point view of constitutional law and State sovereignty,[46] has come about because of the growing privatization of the global economy.

This study is limited to the public international law relating to navigational use, non-navigational uses as well as environmental protection of international watercourses. The study is limited *ratione materiae* to the interrelationship and possible conflict of the regimes of multiple uses and environmental protection.

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[43] UNDoc.A/RES/51/869, May 21, 1997; see 36 *ILM*, 1997, p.700.

[44] Osmanczyk, 1985, p.911.

[45] For an example, a Swedish company's contract with the Government of Canada for the water resource development in Canada see, Bourne, 1997, p.340. Another example is the Australian Snow Mountains Engineering Corporation Limited Agreement with the Government of Nepal to Build, Own and Operate the inland water in Nepal and transfer hydro electricity to India, see <http://www.nepalonline.net/cybernepal/nepalforum/subject-1.htm> (visited Nov.9, 2004).

[46] For example, the 1991 Rhine Contract see, Rest, 1993, pp.260-172.

Geographically, this study is continent-based. Given the varying hydrological and sociopolitical conditions of riparian States, this continent-based approach will illustrate how practice of States with different geographical conditions and varying needs and interests has contributed to the development of common principles such as equitable utilization and sustainable development.

This study is further time framed and treaty focused. The span of time, starting from the early 19th century to the end of 20th century, covers the various stages of the development of the law of international watercourses as it applies today.[47] The limitations *ratione temporis* and *ratione loci* facilitate the study of differences and similarities of the legal regimes of international watercourses and thereby their possible interrelation and conflict.

Various treaty regimes established for different watercourses are representative of diverging realities, primarily the economic, geopolitical and hydro political relations between States sharing an international drainage basin. In this study the selected treaties are first evaluated on the basis of their general characteristics. The focus then shifts to the specific variables of the treaties, i.e. concepts and approaches, substantive principles and institutional mechanisms including dispute settlement procedures of each treaty. The purpose is to trace elements of integration of various legal regimes in each specific treaty. A review of the treaties also divulges not only the progression of the needs and interests of the riparian States but also the different historical stages of the regimes and the paradigm shift of international watercourse management practices.

The present study is not a search for the general principles and substantive or procedural rules with respect to the use allocation and protection of the world's rivers shared by two or more States. Rather, the purpose is to elucidate the various stages of the development of the legal regimes relating to specific watercourses of the different continents, the interrelationships between the regimes, as well as the fundamental shifts in trends of international watercourse management.

The study touches upon the mechanisms that are provided in various treaties to ensure implementation. It does not, however, deal specifically with the actual implementation.

Finally, atmospheric waters, ice and saturated groundwaters are excluded from the purview of this study.

1.4. An Integrated Management Paradigm

International rivers, lakes and underground aquifers are the reasons for interdependence of States with respect to the issues of use and environmental protection of such shared waters. There are several factors directly and indirectly affecting these issues whose proper understanding

[47] Some authors characterize even the current phase of development as being in an initial, immature and *formative* stage see, Salman and Uprety, 2002, p.8.

require an integrated and over all approach.[48] First, the physical aspect is such that management of any international waters in one State may affect the waters beyond that State's boundaries. Second, it is the nature of the water cycle that even where a body of water is situated wholly within the territory of one State, it still affects the whole drainage basin, which may extend to the territories of one or more States. Third, the maintenance of the quality of water resources may require action at a local, national or international level, especially to control or improve the quality against the environmental effect caused by navigational or non-navigational activities. All these factors together demonstrate the need for an integrated and coordinated management.

The underlying thoughts about the integrated management paradigm proposed by this study are based upon the foundations of a holistic and harmonized approach. An integrated management approach requires inclusion of "physical, chemical, and biological components within a basin area, covering the entire ecosystem [or ecological integrity] that comprises water, land, air, flora and fauna".[49] In addition, an integrated management embraces socioeconomic, environmental and technical aspects into a decision-making framework. It takes into account the short and long term needs and effects, and users' interests while maintaining ecosystem integrity as well as biodiversity. It also strikes a balance between conflicting interests on the national and international level, environmental impact assessment, integrated planning and application.[50]

More specifically, an integrated management of international watercourses refers to management of the use allocation, protection and preservation of the ecosystem,[51] including the integration of activities related to land use and water-related aspects at the basin or sub-basin level, aiming, e.g., at sustainable food production and rural development.[52]

An integrated management paradigm is based upon the legal principles such as equitable utilization;[53] sustainable development;[54] no-harm,[55] including the precautionary principle, polluter pays principle,[56] and duty to compensate for damage.[57] The principle of equitable utilization is a general principle of law and the governing rule for all international watercourse management and conflict resolution. It underpins the other principles. The

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[48] MacNeill, 1973, pp.153-174.

[49] *Protection and Use of Transboundary Watercourse and International Lakes in Europe*, Secretariat of the UN/ECE, 18 *NRF*, 1994, pp.171-180.

[50] Ibid, p.176.

[51] Article 20 of the 1997 UN Convention; Article 9 of the 1992 ECE Helsinki Convention on Transboundary Watercourses and International Lakes see, 31 *ILM*, 1992, p.1312.

[52] Agenda 21, Chapter 18, (18.8,18.9,18.56 and 18.68).

[53] Articles 5, 6 and 7 of the 1997 UN Convention.

[54] Articles 5, 6, 7 and 24 of the 1997 UN Convention.

[55] Article 7.

[56] Article 2 of the 1992 ECE Helsinki Convention.

[57] For an example, Article 3 of the 1971 Finnish-Swedish Frontier River Agreement, *UNTS*, 825, p.272.

building blocks of an integrated management paradigm must comprise all the elements that constitute an international drainage basin. This generally includes all resources, including human, animal, plant, energy, soil and precipitation, as well as the various uses that watercourse States have developed and/or are willing to develop, whereby protection of these resources and their utilization needs to be taken into consideration on an equal basis.

Apart from these generalities, each drainage basin has particularities, comprised of unique features depending on the climate and hydrology. The States situated within the basin also face specific problems based on their particular situation (e.g. availability of water or lack thereof), all of which needs to be taken into account in establishing an integrated and coordinated management scheme.

The idea that an international watercourse should be managed in an integrated and coordinated manner means that each factor pertinent in a basin needs to be valued in such a way that both the uses and protection of the area can be sustained in tune with the living natural environment of the area at the same time as the developmental needs of the concerned States are recognized. An integrated management approach is the means to achieve the end goal of sustainable use, which in turn is the aim of the principle of equitable utilization and no-harm rule.

With respect to international watercourses, sustainable utilization is one of the criteria of equitable utilization that balances various uses at the same time integrates and coordinates the uses and protection of the watercourse. This balancing exercise requires due regard the subjective factors (e.g. social and economic needs) and the objective factors (e.g. the hydrology), granting each equal importance. This means that both the navigational use (freedom of navigation) and non-navigational uses constitute, on an equal basis, the elements of equitable utilization. One shall not prejudge or give any priority to either one or the other. In the end, however, emphasis on some factors over others is inevitable in order to reach an equitable solution. In most cases this priority is given to drinking water and food production.[58]

One of the challenges in realizing the integrated management of international watercourses is that due to the need of making optimum utilization of and derive maximum benefits from resources,[59] not all equitable utilizations may necessarily result in sustainable use and vice versa. At the same time one has to maintain sustainability among the particular uses as well as between those uses and protection. And also there must be consideration given to the present use in relation to the future use. Since the principle of equitable utilization provides the basis for the legitimacy of the uses and sustainability is one of its criteria, it would be unjust to prohibit the use, ignoring the developmental needs of the State

[58] Article 10 of the 1997 UN Convention.
[59] Article 5 of the 1997 UN Convention.

concerned. At the same time the value of the natural environment, and its contribution to life on earth, cannot be ignored. Therefore, the sustainability of the uses of international watercourses is decided by the degree of harm caused, i.e. significant or appreciable harm.

In an integrated management approach, one has to balance between the competing interests of the parties, as well as between the use and protection of resources. It may require equity compensation, both in terms of the developmental interests of the concerned parties that have been harmed and/or the financial cost incurred for restitution, improvement and protection of the environment. In such a management approach, use does not prevail over harm, nor vice versa. Less significant harm caused, or likely to be caused from the development, may be permitted by the principle of equitable utilization and no-harm rule, provided that equity compensation is available. Significant harm to human population, caused or likely to be caused by development, is unacceptable in terms of sustainable development.

The argument against piecemeal management, and thereby justification for an integrated legal perspective of the regimes, is that it is needed in order to see the increasingly complex issues of the law of international watercourses. Even though the navigational use of international rivers may not seem to consume water in comparison to the non-navigational uses such as industrial use and irrigation, navigational use of water is obviously a matter of consumption because of the requirement for sufficient waters for bearing the shipping needs. The classic view is that navigational use of consuming waters has priority over the non-navigational uses. It implies that certain quantity of waters is required to fulfill the objectives of navigational use.[60]

Through an examination of a number of 19th century treaties relating to e.g. the Rhine and Danube,[61] it will be shown that States prioritized navigational use. This was substituted in the 1990's by a coordinated and equal treatment where the environmental protection and multiple uses were integrated.[62] On the other hand, there is the case of the Nile River's legal regime, which developed in the 1950's and continues to prioritize irrigation - a non-navigational use - while at the same time the river is also used for commercial and recreational transportation. Since the early 1990's, the Nile's riparian States have been negotiating in order to adopt a "shared vision".[63]

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[60] The term "consumptive use" is defined in the 1960 Indus Water Treaty (*ST/LEG/SER.B/12*, Legislative series Treaty No.97), which is discussed in relation to Asian Rivers and Treaty Practice.

[61] This will focus on the Rhine and Danube treaties generally.

[62] An integrated legal management of shared international river developed in the 1990's will be illustrated in relation to the case study of international water basins of Europe.

[63] It will focus treaties in Africa, generally, and the Nile Treaty regime, particularly.

It will be illustrated further how the needs of the riparian States of the Nile River clearly requires harmonization of the legal regimes, since excessive irrigation would not only adversely affect navigation but also the Nile's environment, i.e. the priority of one kind of use against the others would have negative consequences for the whole river system. It will also be demonstrated, through the Mekong River regime as it developed in the 1990's, how the harmonization of the regimes of navigational use, non-navigational uses and environmental protection can come about.[64]

The consequences of a lack of an integrated perspective will be shown with the examples of the Farakka Barrage and the Ganges treaties. With the developments related to the Himalayan drainage basin of South Asia in the 1990's, it will be illustrated that because of the lack of an integrated legal arrangement, the needs of the riparian States remain unfulfilled.[65]

An examination of selected cases from Africa and the Americas will indicate the evolution of integrated management patterns of the treaty regimes of the 1990's, which sheds light on the importance of uses and protection, including the interrelationships between trade, navigation and promotion of tourism.[66]

A fundamental justification for adopting an integrated legal perspective of the different legal regimes is that all types of waters are parts of the hydrological cycle, including the salt waters of the seas. The main reasons of justifications for the adoption of an integrated and coordinated perspective related to the legal regimes of international watercourses are: hydrology, geography, economics, technology, and hydro-climate-security. The basic issues underlying these factors will be outlined here under. This list is not comprehensive, but representative enough to justify the overall approach taken in this study.

1.4.1. Hydrology

As regards the hydrological factors, the need for an integrated legal perspective of the regimes is due to the intimate link between the availability of waters in the geographical regions, on the one hand, and the relationships between natural resource use and protection of the environment, on the other. The hydrological cycle implies viewing waters in an interconnected way from the ocean to the atmosphere to precipitation to groundwaters[67] and lakes, to estuaries and finally to the seas again. It

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[64] It will be discussed in relation to Asian rivers and treaty practice in general, and a case study of the Mekong basin of Southeast Asia.

[65] This will focus on the Ganges and Mahakali River treaties in relation to the case of the Himalayan basin of South Asia.

[66] This will be discussed in relation to the case study of the Amazon water basin of South America.

[67] The *Donauversinkung Case* relating to sinking the parts of the Danube River, which was decided on the basis of international law, highlights the importance of the interrelationships between surface and groundwater, requiring the respective States not to injure the interests of other members of the international community and refrain from causing decrease in

also implies viewing water in all its phases: liquid, gas and solid, a cycle, which runs through a cycle of precipitation through soil, plants, rivers, lakes and oceans.[68]

The hydrological cycle is a natural phenomenon, which governs global rainfall patterns that in turn also determines the availability of the waters in national or international watercourses. The amount of available waters in a basin not only affects the level of conflict and cooperation between basin States, but it also influence on which model of management of international drainage basins is most appropriate.

Acid rain is an important environmental issue related to atmospheric waters and rains. There is a clear connection between industrial activities and acid rain, namely the emission of sulphur dioxide and nitrogen oxide and its effect on the atmosphere.

The other issue related to the hydrological cycle is that the rise in global temperatures changes the levels of precipitation and density of clouds, and thereby affecting overall global rainfalls, resulting in drought or floods, and that in turn changes river flows as well as groundwater aquifers. With the doubling of atmospheric carbon dioxide by the year 2050, the earth's temperature could increase by two to nine degrees Fahrenheit.[69] With this rising temperature, and the resulting meltdown of Antarctic ice, experts predict that sea level will be raised by 6 feet. As a consequence, some islands would disappear and weather conditions would be thrown out of balance.

Estuaries, i.e. zones where fresh water and salt-water meet and mix, are critical links in the environment. Pollution from multiple sources, both from inland and from the sea, has seriously degraded the quality and productivity of many estuaries. [70] At the estuarine zone of the different seas the continental surface and groundwater meet and mix with the hot and the cold water current of the sea, which are responsible for the balance of weather conditions. The legal protection of these critical zones require an integrated and coordinated approach with respect to the relation between international fresh water and the marine environment.

1.4.2. Geography

Of the two hundred international drainage basins, 148 (70%) are shared by two States, 30 by three States and 22 by four to ten States. Approximately 25% of the States in the world are situated entirely within international river basins, and except for island States, almost all States are concerned with the international river basins to a greater or lesser extent.[71] Within the

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natural sinking of watercourses as result of certain works and artificial damming or sinking, see *Annual Digest* 1927- 1928, Case No. 86.

[68] Teclaff, 1991, pp.8-9.

[69] Goldenman, 1990, p.741.

[70] Hayton, 1991, pp.123-138.

[71] *EWPHP*, 1986, p.0520.

hydrological cycle there are continental, regional and sub-regional climate zones as well as the uneven distribution of rains, whereby each international watercourse is unique in terms of its hydrology and vegetation. Particularly, from the point of view of drought and flooding, the need for an integrated perspective of the legal regimes is urgent. Time and again, in some regions people face water scarcity and drought, and flooding in others. These are atmosphere and climate-related changes, occurring as a result of global temperature rise, which result in the sea level rise in some areas, and sea level decline in others.

As much as the physical geography is concerned, the human geography is another factor requiring an integrated legal perspective of the regimes. The supply of fresh water is limited compared to the worldwide demands of the increasing population; by 2025, over thirty countries in the world are expected to be unable to provide sufficient water for their people; by 2050, the world population will be 9 billion, requiring a minimum of 10 gallons of fresh water per person per day for drinking, food preparation, bathing and washing. It has been estimated that a *typical* person uses 100 gallons of water daily for drinking, food preparation, bathing and washing.[72] Most of the arid geographical regions of the world do not have such a minimum supply of waters. Countries like Iceland, Norway, Canada and New Zealand have available more than 1,000,000 cubic meters of water per person per year, whereas the average supply for all African countries is less than 7,000 cubic meters per person per year.

The earth's waters are unevenly distributed geographically, as a result of which millions of dollars are being spent every year to move water from wet areas to drier areas, or to store it in wet seasons for coming dry periods.[73] As a single hydrological unit, the geographical concept of the international drainage basin possesses legality where the riparian States clearly recognize it by treaty, but it is hardly a political unit, much less inspiration for political unity. However, a river system forms a single and indivisible physical unit, even though it may be intersected by political frontiers and political interference. These political lines may serve as a disguise, and technology may be used to alter rivers' courses, but these efforts cannot reconstruct the river and erase its nature as a unit.[74] The basin States of an international drainage basin are not expected to ignore their political boundaries, but they are obliged to negotiate over the development of the shared basin.[75] This should be the thrust of the integrated legal perspective involving the hydro-politics among basin States.

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[72] This is NASA's estimates see, Leary, 1998, p.3.
[73] Gleick, 1993, pp.141-149.
[74] Smith, 1931, pp.21,71.
[75] Article IV of the 1923 Geneva Convention, see League of Nations, General Conference on Freedom of Communications and Transit, Record and Text 1924,C.30.M.16.1924.VIII Annex, 1.

The geographical factor of drainage basin had a great impact on the work of the international organizations in developing the law of international watercourses with the integrated legal perspective. This perspective associates international rivers with the international drainage basin, which is an indivisible geographical unit.[76] As the geographical or hydrological unity of a basin does not automatically mean legal unity, and the basin States may argue the sanctity of the geographical concept, the geographical justification for the integrated legal perspective has to be seen in light of their economic relationships.

1.4.3. Economy

The economic interdependence of States sharing an international drainage basin is more apparent than the general interdependency among States who do not share a drainage basin, as it is understood in the general theory of international relations. The hydrology of the basin virtually interconnects the economic life of populations of the basin.[77] The economic development pressures from the populations lead States to cooperate with each others, and in some cases even to confront with each other over the question of diversion of flow of water which may change the natural flow and thereby causing harm to other State. Thus, as for the economic uses of international waters,[78] the integrated legal perspective of the regimes would be required to take into account the economic needs of basin States.

Some jurists postulate the need for recognition of the economic unity of international drainage basins to provide joint ownership among the States sharing and participating in basin management.[79] We find such a proposition concerning the economic development of the Indus Basin.[80] At a discussion of the Institut de droit International (IDI) some experts argued that the utilization of non-maritime international waters, i.e. rivers, should be based on the notion of the geographical and economic unity of a river basin,[81] though this was disputed by others.[82]

After the International Law Association (ILA) adopted the concept of international drainage basins as a geographical and hydrological unit in 1966, the rule of economic unity of a river basin gradually lost its significance.[83] This argument in "favor of international drainage basins as

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[76] *Report of the ILA Fifty-Second Conference*, Helsinki, 1966, pp.447-531.
[77] Ohlsson, 1992, pp.132-155.
[78] Smith, 1931, p.2.
[79] Cano recommended the idea as such at the tenth conference of the Inter-American Bar Association; *Resolution adopted by the Inter-American Bar Association at its tenth conference held in November 1957, at Buenos Aires, Argentina*, see Cano, "The Juridical Status of International (Non-Maritime) Waters in Western Hemisphere" in *Principles of Law Governing the Uses of International Rivers and Lakes*, 1958, p.103.
[80] Eugene Black proposed this idea, but the 1960 Indus Water Treaty does not seem to take it into consideration, see also Berber, 1957, pp.56-57.
[81] *Annuaire de l'Institute de Droit International*, Rome II, 1961, pp.163-164.
[82] Ibid, pp.56-66. Andrassy argued against.
[83] *Report of the ILA Fifty-Second Conference*, Helsinki, 1966, pp.447-531.

economic units was more valid in the 19th century than in the 20th century, because in earlier times, when other modes of transport were less developed, international rivers provided the essential means of transportation, communication and commerce.[84]

With technological advancements in the 20th century, the transportation of goods and people became easier from one basin to another, changing profoundly the economic patterns of States.[85] In recent times though, particularly with the navigational use of international rivers for tourism, there has been a revival of economic integration between basin States.[86] It is argued that "as long as national boundaries survive, the economy of an international drainage basin can not be treated as a unit in isolation from the national economics of which it is necessarily a part."[87] Ideally then, basin States are supposed to take into consideration the socio-economic needs of their people living in the basin, while at the same time taking the interests of their co-basin States into consideration as they plan and execute basin-wide management.

1.4.4. Technology

Science and technological advancement have made it possible to transport waters from one region to another. This has in turn made it possible to generate energy and provide irrigation from watercourses across borders, and expand water-based trans-national and trans-continental economic activities. This has generated greater focus upon extra-basin planning and implementation, which at the same time is not isolated from the needs of the basin States. A prime example of transnational companies' involvement in such trans-continental resource development is the Swedish enterprise Wenner-Gren's operations in Canada for hydrological development.[88] Other examples of extra-basin planning and implementation are the Rhine-Main-Danube Canal, for navigational use,[89] and India's controversial plan to link the Brahmaputra basin with the Ganges basin for various purposes.[90]

Arguably, the scientific and technological advancements that have led to such trans-continental and extra-basin activities have, depending on one's perspective, either minimized the international drainage basin as a concept - as it is understood in a conventional sense - or have accelerated the

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[84] Teclaff, 1967, pp.71-74.
[85] Bourne, 1996, p.18.
[86] This includes the case study of the Southern African water basin, and the Amazon water basin of South America, respectively.
[87] Bourne, 1996, p.18
[88] The Swedish Wenner-Gren and Associates develop the Rocky Mountain Trench in the British Columbia see, Bourne, 1997, p.340.
[89] See, 18 *NRF*, 1994, p.171.
[90] *Fresh Water Resources: Protection, Development and Use Agenda 21, Text and Current Status in India*, Ministry of Water Resources, Government of India, 1993, pp.68-69.

progression towards the conceptualization of the entire planet as a single basin, composed of various sub-basins.

As ongoing scientific research invents new technologies to make appropriate use of the earth's surface waters, groundwaters and atmospheric waters, the adoption of an integrated legal approach to deal with this is lagging behind. For example, scientists are experimenting with artificial cloud seeding to create rain as well as technology to divert clouds in order to divert rainfall.[91] However, the environmental impact of such a technology may be severe because of the use of chemicals for seeding the clouds.[92] As a consequence, both the quality and quantity of international rivers, lakes and groundwater may change.

The law of international freshwaters continues to develop in a random fashion, adopting various isolated concepts without any comprehensive foresight. This is the case in spite of the fact that internationally shared surface waters and groundwaters are not meeting the demand of the world's population, and ice and the atmospheric waters are likely targets for exploitation. This points to the need for harmonizing the various concepts governing surface, ground and atmospheric waters, including international ice and ice covered areas, thereby recognizing the interrelation of the component of the hydrological cycle.

As scientific innovations help us further understand the physical phenomenon of the hydrological cycle, the law relating to the management of international fresh waters needs to be further developed to harmonize the legal concepts concerning all kinds of international fresh waters. The legal approach needs to be in tune with scientific innovations so that the law can regulate not only the use and protection of the earth's fresh waters but also regulate the use of available technology as well.

1.4.5. Hydro-Climate-Security

It is known that shortages of fresh waters worsen economic and political differences among States, which will contribute to increasingly unstable perceptions of national security, leading in particular to the shared

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[91] Turk and Turk, 1988, pp.500-501. In the 1940's, scientists Vincent Schaefer and Irving Langmuir tried to seed clouds artificially. Since then, cloud seeding on a practical scale has been attempted from time to time. However, it became clear that the seed crystals needed to be cold and also needed to have a shape similar to that of an ice crystal. The most effective crystal was found to be silver iodide, which unfortunately is poisonous and its use in large quantities may produce a toxic effect on plant and animal life. It has also been difficult to determine how much precipitation is gained. It is possible to shift rainfall from one location to another, with the object of watering an otherwise dry area such as the "rain shadow"(the dry side) of a mountain range. Precipitation can be spread out to a wider zone in an effort to reduce local intensive concentrations, such as heavy winter snowfalls. Thus one region's gain is another region's loss. Furthermore, the control over the redistribution of rain is not always precise. As a result, conflicts of interests and political problems may arise.

[92] In Moscow, for example, where cloud seeding is used regularly to divert rain before major holidays, residents often complain of headaches for several days afterward. (Genine Babikian, Russia correspondent, USA Today, personal communication).

international watercourses becoming targets and tools of war. Having realized this, the Hague Ministerial Declaration (2000) recognizes a common goal of the international community to provide water security in the 21st century.[93] The water security approach taken by the Ministerial Declaration takes a broader view of hydro-security, recognizing that: 1) access to safe and sufficient quantities of water is a human right; 2) fresh waters, coastal waters and ecosystems are to be protected and improved; and 3) sustainable development and political stability are to be promoted.

The need for sustainable development and political stability (international and national) mentioned above are the two important aspects of the concept of hydro-security.[94] All these issues are interrelated with the world's fresh water security, also known as climate security, both in terms of normative and environmental security,[95] all of which demands integrated legal perspectives. One relevant aspect of such an integrated legal perspective is the legal arrangement of international watercourses, adapting to climate change.[96] In recent years, the terms sustainable development and hydro-water-security have become the key phrases in connection to international fresh waters, comprising the common security. The argument in favor of the common security does not minimize the importance of the State and the positive aspects of normative security focused on military defense. Richard Ullman's famous (re) definition of the very concept of security provides insight into real threats and true security.[97] He defines security in a broader sense of "the quality of life for

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[93] *Ministerial Declaration of the Hague on Water Security in the 21st Century* (March 22, 2000) Second World Water Forum, April/2000, see Dundee Water 2000, Equitable and Sustainable Access to Water, 10-14 July 2000, Vol.II Documents, p.216.

[94] Not all conflicts pose danger to international peace and security. According to Article 39 of the UN Charter, the Security Council determines what constitutes a threat to international peace and security.

[95] Ullman's (re)definition: "conceptualizing environmental security as a primary concern with potential conflicts over scarce or degraded resources may direct from a goal of security by reinforcing the already prevalent perception of environmental degradation and scarcity as a matter of purely national concern", see Ullman, 1983, pp.129-133. Threats to the environmental security, according to him, consists of "any action or sequence of actions or events that (1) threatens drastically and over a relatively brief span of time to degrade the quality of life for the inhabitants of a State, or (2) threatens significantly to narrow the policy choice available to the government of a State or to private, non governmental entities (person, groups, corporations) within the State." According to Brunnee and Toope (1997, pp.26-59), the expansive sense of the concept of environmental security calls on us to consider the environment per se, even if from a homocentric and instrumentalist position, in assessing the consequences of policy decisions. The security referred to is the maintenance or re-establishment of the ecological balance. On the other hand, in emphasizing the dimension of security in the traditional sense of State integrity, the term refers to the prevention or management of conflict over scarce or degraded resources.

[96] Goldenman, 1990, pp.741-802.

[97] According to Ulman, the concept of true security include "any action or sequence of actions or events that (1) threatens drastically and over a relatively brief span of time to degrade the quality of life for the inhabitants of a State, or (2) threatens significantly to narrow the policy choice available to the government of a State or to private, non

the inhabitants of a State" as opposed to the narrow military focus as understood under the term normative security.

As noted above, shortages of fresh water worsen economic and political differences between States and contribute to increasingly unstable perceptions of national security. Hydro-political conflict between Turkey, Syria and Iraq over the Euphrates River is an example of water-related security context in which soon it will be water - not oil –, which will be the resource, which dominates the relations between the States.

As international fresh water crises increase, environmental security requires more common security, which in turn requires international justice. In view of the relationship between environmental problems and natural resource scarcity, and between shared resource scarcity and international conflicts, the world's fresh water resources need to be viewed within a common security framework. An integrated perspective on common security can be enumerated in various terms, which includes climate security, biological security, chemical security, environmental security, population security, resource security, economic security and human security. This is the challenging task of the international community in the 21st century, developing principles and procedures of the international institutional order in resolving environment/water conflicts.

1.5. Definitions of Key Concepts

By use of the term *regime*, this study refers to the concepts and approaches, principles, rules and institutional mechanisms related to the protection and uses of international watercourses, including the resolution of conflicts between riparian States in regard to shared water resource development and environmental concerns.

The regime of navigational use, in the present study, includes definition of the beneficiaries of navigation, determination of the territorial scope of rules on inland navigation, rights and duties of riparian States, and administration of river areas of the international river in question. Apart from the rights and duties based upon the principle of equitable utilization, the regime of non-navigational uses concerns the rights and duties of riparian States including the liabilities of flow changes of watercourses. These are governed by the principle of equitable utilization. The regime of environmental protection also consists of the principles of equitable utilization and no-harm, prohibiting detrimental use. Its aim is sustainable development.

The term *international river*, as it is used in the present study, means rivers "separating or traversing two or more States"[98] including the successive or contiguous international rivers, which may flow on a

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governmental entities (person, groups, corporations) within the State." Ullman, 1983, pp. 129-133.

[98] Article 108 of the Final Act of the Congress of Vienna, Oakes and Mowat *(GETNC)* 1918, p.37

horizontal or vertical basis. International river is a geographical concept rather than a legal one. Any river passing through the territory of two or more States may become internationalized through a treaty between the riparian States. Each riparian States of an international river shall respect certain general obligations, e.g. the duty to cooperate and not cause harm. They cannot, however, be prohibited from using the international rivers in absence of a treaty internationalizing the river.[99]

An *international drainage basin* refers to a geographical area extending, as a hydrological unit, over two or more States.[100] The concept of *transboundary watercourse*, as referred to in the present study, includes any surface or groundwater which marks, crosses or is located on boundaries between two or more States.[101] Both the concepts of *transboundary watercourses* and *international watercourses* are used interchangeably where the emphasis of the terms is not in question. An *international watercourse*, yet another legal *concept*, is understood as the watercourse whose parts are situated in different sovereign States.[102] The *concept* of an *international waterway* refers to relatively narrow channels of inland waters, serving as international boundaries or traversing successively two or more States, through which international passage for shipping is regulated and the freedom of navigation refers to the inland navigation and passage for shipping on international rivers.[103]

Basin State "means a State the territory of which includes a portion of an international drainage basin",[104] and *Watercourse State* means a State in whose territory part of an international watercourse is situated."[105] A *Riparian State* is "a State having territorial jurisdiction and sovereignty over the whole or any part of a land surface area comprising a drainage basin."[106] A *Co-riparian State* is "a State which shares, in any respect, territorial jurisdiction and sovereignty over a land surface area within any part of a drainage basin, of which another State also has rights of jurisdiction and sovereignty."[107] A *non-riparin State* is "a State which does not possess or share any territorial jurisdiction and sovereignty over any land surface area within a drainage basin."[108]

The concept of *international river boundary*, which is usually determined by the main channel - also known as the *thalweg*, unless otherwise agreed

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[99] The Peace Treaty of Paris 1856 internationalized the Black Sea see, *MNRGT*, 1987, p.775.
[100] Article IIof the 1966 ILA Helsinki Rules see, *Report of the ILA Fifty-Second Conference*, Helsinki, 1966, pp.447-531.
[101] Article 1 of the 1992 ECE Helsinki Convention.
[102] Article 2 of the 1997 UN Convention.
[103] Article 109 of the 1815 Final Act of the Congress of Vienna;*Oscar Chinn Case* 1934, *PCIJSer.A/B,* 1934, No.63.
[104] Article 2 of the *Campione Consolidation of the ILA Rules on International Water Resources* 1966-2000 see, *Second Report of the ILA London Conference,* 2000, pp.3-4.
[105] Article 2 of the 1997 UN Convention.
[106] *Report of the ILA Forty-Eighth Conference*, New York, 1958, pp.28-99.
[107] Ibid, p.86.
[108] Ibid.

by treaties, needs to be taken into consideration in exploring the regimes of uses and protection. Rivers can sometimes change their course, leaving their original course either by *accretion*[109] or by *avulsion*.[110] Accretion is generally regarded as an addition to land coterminous with the water between riparian owners, which is formed so slowly that its process is difficult to perceive, due to the imperceptible changes of its course by denuding of one of its banks and accretion of the other. According to customary practice, any slow continuous change of the course of a boundary river carries the boundary with it.[111] The concept of accretion is that the formation is not necessarily discernible by comparison at two distinct moments of time. In the case of two substantial channels which adjoin riparian States, the center of the deepest channel is deemed to be their boundary. This will remain the boundary, subject to changes which may result from accretion. Thus, the boundary line will not eventually shift to the shallower channel, even if at a later time the other channel becomes more important, e.g. is used more often, and is deemed to have become the main channel of the river. As to accretion, it should be noted that the riparian State's boundary remains the center of the watercourse, although the actual area of the State's frontiers may have varied.

When a river alters its course through avulsion (a sudden violent change), title to the property is not altered. In some instances, when private land extends to the water of an ocean, lake or stream, new land is slowly formed at the edge of the water accretion. Avulsion is known as a process where a boundary river, natural or artificial, suddenly leaves or abandons its old bed to form a new channel. The resulting displacement of the channel does not alter the original boundary line. Avulsion does not vitiate the *thalweg*. The boundary remains as it was, in the middle of the old channel, even if a waterway no longer exists there, irrespective of the subsequent changes in the new channel.

Boundary rivers and their effect on State boundaries via accretion or avulsion, impacts the eco-system, which in turn may even affect multiple uses. For example, the freedom of navigation, which is subject to regulation by riparian States, is determined by the *thalweg*. An effect on the *thalweg* as

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[109] Cukwuarh, 1967, pp.57-58.

[110] Ibid, p.58.

[111] *The Guide to American Law, Everyone's Legal Encyclopedia*, Vol.10, p.331. "What happens when a boundary river suddenly abandons its original bed? How far does the behavior of the river affect its river boundary? Does the median or *thalweg*, as boundary line remain constant irrespective of secular changes in the course of the river? The answers to these questions can be traced back to the Roman law of riparian owners, and the relevant principles of common law. The accretion of soil belongs to an abutting owner, and the newly formed land is called "allusion". There are three reasons why it should belong to the owner of the abutting land; 1) the person is in the best position to make use of the newly made land; 2) the person runs the risk of losing some of his or her land from the action of the water and should, therefore, have a corresponding right to gain land from deposits of new soil; and 3) the person's right of access to the water from his or her property should be preserved."

a result of accretion or avulsion is that the position of a navigable river may change. In this respect, the regimes of navigational use, non-navigational uses and environmental protection are intertwined.

In line with the concept of permanent sovereignty over natural resources,[112] the riparian rights apply to those parts of the watercourse situated within that State's territory. However, the riparian States sharing international watercourses sometimes recognize the water rights differently in their national laws. This means that the characteristics of water rights are different when viewed from the top down, nationally or internationally, than when examined from the bottom up, locally or on a public and private basis.[113] By the terms private water rights, under national laws, we mean the right of individual citizens and public water rights means the collective right of the community or, in some cases, everyone's right.[114]

Depending upon the national legal system, private water rights may or may not be considered comprehensive as the property right of the individual citizens. While the community water rights are considered as the sovereign immunity water right of indigenous populations in some national legal systems,[115] the water and environmental rights are recognized as basic human rights to life in other national legal systems.[116]

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[112] The Charter of the Economic Rights and Duties of States, UNGAOR 29th session, Supp. No.31at 50 UNDoc.A/9631, 1974.

[113] Bois, 1994, pp.73-84.

[114] For example in Sweden, irrespective of one's status in Swedish society, i.e. whether native or foreign, everyone has a legal right of access to private land (*Allemansrätt*). From the point of view of property rights, there is a general right to navigation in public waters; while navigation in private waters is based on "everyone's right", which entitles everyone to pass over private property, whether on land or water. In terms of natural forest resources, this law also includes the right to pick, collect and use natural products such as wild fruits or berries.

[115] Feldman, 1994, pp.433-488. An interesting aspect of water rights from the United States is *sovereign immunity water right* based on the idea of domestic dependent nation and affirmation of justice. The sovereign immunity water rights are absolute, based on the principle of federal sovereign immunity, according to which there are three categories of sovereigns, i.e. the United States Government, the State governments and the Native American. The United States' Government has signed more than four hundred treaties with the Native American, several of which deal with the issues of boundaries of the Seneka nation, reservation, dam building therein, and flooding. Critics note that the United Ststes' Government has violated every single one (see Zinn, 2001, pp.526-27). Article 15(1) of the ILO Convention 169, concerning the Indigenous and Tribal Peoples in Independent Countries recognizes that the rights of peoples concerned to natural resources pertaining to their lands shall be especially safeguarded.

[116] The Supreme Court of India recognized the link between the right to life and environment, interpreting the "right to life" as outlined in Article 21 of the Indian Constitution to include the right to a wholesome environment. The Court declared "The right to life guaranteed by Article 21 [of the Indian Constitution] includes the right to enjoyment of pollution free water and air for full enjoyment of life. If anything endangers or impairs that quality of life in derogation of laws, a citizen has the right to have recourse to Article 32 of the constitution for removing the pollution of water or air that may be

1.6. Method and Structure

The historical development of the legal regimes of navigational use, non-navigational uses and environmental protection of international watercourses will be explored, through the work of international organizations, in chronological order starting from the early 19th century to the end of the 20th century, including the work of both the inter-governmental and non-governmental organizations. This begins with an examination of the work of the Concert of Europe, i.e. the 1815 Final Act of the Congress of Vienna, illustrating the formal recognition of the international river concept, the freedom of navigation and cooperation between riparian States concerning navigational use. Subsequently, the study will look at the legal regime established by the 1921 Barcelona Convention, which is one of the important works of the League of Nations. The development of the regime of non-navigational uses during the time of the League of Nations will be illustrated, focusing on the work of the League subsequent to the adoption of the 1921 Barcelona Convention.

This study will then examine works of the IDI, starting from 1910 up to the 1970's, concerning the regimes of non-navigational uses and environmental protection. An assessment of the IDI's approach, balancing between the uses and protection, will also be made at the end of this section.

Afterwards, there will be a comprehensive review of the work of the ILA starting from the 1966 ILA Helsinki Rules to the 2004 Revision of the Rules. This will provide a view of the complete historical development and codification of the law of international drainage basin, that defines the concept of international drainage basin, the principle of equitable utilization, and thereby marking a progressive change in the law. The study of the work of the ILA will show how an integrated legal perspective of the regimes of uses and protection developed, especially the shifting management paradigm from a piecemeal to an integrated approach.

The study will then focus on the United Nations, beginning with the work of the International Law Commission (ILC) starting from 1974 up till the ILC's 1994 Draft Convention. As to the work of the UN system in general, the relevant provisions of the Charter will first be examined, focusing on the General Policy Principles (GPP) of environmental protection and developmental needs. For this, the relevant UN conferences and documents will be discussed. They include the 1967 Conference on Water for Peace; the 1972 Conference on the Human Environment; the 1974 Charter of the Economic Rights and Duties of States; the 1977 UN Water Conference; the 1987 World Commission Report; and the 1992 Rio Conference on Environment and Development. Some GPP are directly related to the uses and protection of watercourses, and others indirectly,

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detrimental to the quality of life." See, *Subash Kumar v. State of Bihar* (1991) also referred in *YIEL*, 1992, p.433.

but all of them embody the common themes of humanity, equity and social justice concerning environment and development.

The study will subsequently turn to some major watercourse treaties of from different continents. The treaties that have been selected relate to Europe, Asia, Africa, South America and North America. The treaties discussed are chronologically listed and broken down into continent-specific tables (see Appendix) indicating the rivers and the uses dealt with in the treaties.

In Europe, apart from the general exploration of the legal regimes of international watercourses, there will be a specific focus on the treaty practice of the Rhine, Danube rivers and the Finnish-Swedish frontier river: in Asia, the specific focus will be on the Mekong, the Kosi and Gandak rivers, the Indus and the Ganges rivers; in Africa, the Nile and Zambezi rivers; in South America, the River Plate and the Amazon rivers; and in North America, the Rio Grande and Colorado rivers and the United States and Canada boundary waters. Of particular interest to the present study are the treaties concluded in the 1990's, which can be seen as manifestations of the management paradigm shift, an approach that essentially attempts to reconcile the contradictions of water resource development and environmental protection.

Treaties that contain elements of an integrated approach to the management of international watercourses will be illustrated through tables. These elements are variables which are important for the overall examination of treaties, and are divided into independent and dependent categories. For the purposes of these tables, the watercourse treaties are classified as the independent variables. As for dependent variables, the rules contained in the treaties are divided into different groups, namely: Concepts and Approaches (CA), Substantive Principles (SP), Implementation Mechanisms (IM) and Dispute Settlement venues (DS). These variables are rough indicators of the different regimes rather than displaying of the detailed comparisons. Any comparison made in the study is on a macro level.

In the table, Concepts and Approaches (CA) signifies the scope of application of the legal regimes in terms of concepts, e.g. international drainage basin, international shared watercourses, international watercourse system, transboundary watercourse, international watercourse, international river basin and international river. If a treaty adheres to the concept of international drainage basin, this indicates a management paradigm with the highest level of integration, and is designated in the table. The rest, following downward on the scale, are international watercourse system, international shared watercourse, transboundary watercourse, international river basin, respectively. At the bottom of the scale is international river, a piecemeal approach, where there is little or no link between uses and/or between uses and protection. The concept of the international watercourse system is relevant to the

Substantive Principles, particularly in regard to the State's duty to cooperate. Also, in the tables, an international watercourse system is considered as part and parcel of an international drainage basin.

Substantive Principles (SP) will illustrate how a treaty is balancing the competing interests concerning the various regimes, e.g. uses v protection, and navigational use (freedom of navigation) v non-navigational uses, determining the principles of the various uses including the community of riparians; equitable utilization, sustainable development, no-harm rule, precautionary principle, polluter pays principles, duty to compensate for damage, and others such as equal rights, acquired rights, and historic entitlement. Adherence to the principle of equitable utilization by a specified treaty indicates that the SP is one, which embraces an integrated management paradigm. As has been explained above (1.4) concerning an integrated management paradigm and its justification, the equitable utilization is a governing principle of management and/or conflict resolution which is comprised of sub-principles. Where both international drainage basin and equitable utilization are present, this indicates the highest level of integration.

Implementation Mechanisms (IM) signifies arrangements to accommodate conflicting interests as well as future adjustments. This includes procedures to implement, or to ensure compliance with treaties that are or may be governed by any of the following: international commission, international river corporation, international river company, international river organization or international river contract. For the purpose of the tables, these issues are sub-classified as follows; use allocation, protection and improvement, adjustment; information sharing, reporting and assessment, and public participation. These sub classifications deal with, for example, whether the use allocation is fixed or not; whether or not legal measures are provided for in maintenance of water quality and protection of ecosystem; whether or not minimum flows are maintained; balancing the interests of upper and lower riparians; and whether or not there are flood control measures taken by the parties of the treaties.

Dispute Settlement (DS) shows the procedures and avenues a treaty has specified for a particular means of dispute settlement, e.g. adjudication, arbitration, mixed courts, joint river commission and diplomatic settlement, including impartial fact finding. The presence of one or the other means of dispute settlement in a watercourse treaty is considered to be significant to avoid or settle disputes. However, it cannot be denied that watercourse disputes very often require political settlement. The political settlement of shared watercourse disputes falls within the purview of the principle of equitable utilization based on the fact that the implementation of equitable utilization is also a political process (apart from the legal principles involved), particularly in terms of the criterion of social political need of the watercourse State concerned (Article 6[b] of the 1997 UN Convention).

The relation between the dependent variable and independent variables will signify the degree of piecemeal or integrated management in the pre-1990's treaties, based on the above mentioned classifications. In examining the 1990's treaties, the independent variables and dependent variables will be switched. This is necessary to show the paradigm shift from piecemeal to integrated management.

This study has devoted great emphasis to the 1990's development of the law of international watercourses, given the noteworthy progress that occurred during that period. These include, among others: the increasing recognition of the principle of equitable utilization and sustainable development; the adoption of the 1992 UN/ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes in Helsinki (hereinafter referred to as the "1992 ECE Helsinki Convention"),[117] which recognized principles of equitable utilization, sustainable development, precautionary principle, polluter pays principle and the inter-generational equity; adoption of the 1997 UN Convention, embodying the principle of equitable utilization; and endorsement of the 1997 UN Convention, as well as the recognition of the principle of equitable utilization, by the ICJ. All of these together have led to the universal recognition of the principle of equitable utilization as a general principle of law, implying with that the sub-principles of sustainable development and the no-harm rule.

Thus, the selected case studies of the 1990's treaties include at least one treaty from Europe, Asia, Africa and South America, respectively. The focus of the case studies of the 1990's treaties will be on the legal regimes of the European international basin, the Mekong and Himalayan basins, the Southern African basins and the Amazon basin. This will indicate the paradigm shift from a piecemeal to integrated management.

After analyzing the 1990's treaties, the attention of the study will then turn to the legal regimes established by the global framework convention adopted in 1997, taking into consideration the selected legal regimes that implied parity between the (use and protection) regimes.[118] Assuming that, by virtue of the dynamics of law, the existing treaties will be adjusted in accordance with new developments of watercourse law, it follows that future treaties can also be expected to be negotiated within the parameters of the principle of equitable utilization and integrated management. It is also important to note that in examining the 1997 UN Convention, the relationship between the dependent and independent variables will follow the same pattern as applied with the pre-1990's treaties.

It is against the background of increasing international water conflicts, the present study will look at court practices, selecting cases decided by the international courts and tribunals in the 20th century.

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[117] See, 31 *ILM*, 1992, p.1312.

[118] The 1997 UN Convention.

As to the regime of navigational use, the study will touch upon the following issues: the need for respect for the security concerns of the State in whose water a foreign ship exercise the freedom of navigation;[119] the recognition of the community interest of the riparian States concerning the regime of navigational use;[120] and the constituent elements of defining the freedom of navigation.[121] The study will also analyze the issues relating to the regime of non-navigational uses, suggesting that the treaties are applicable law concerning the diversion of international watercourses,[122] and that the upstream States have an obligation to take into consideration the interests of the downstream State.[123] The study will focus as well on a new era of international watercourses law, which is characterized by the emergence of the principle of equitable utilization as a norm of customary international law, especially through the practice of the ICJ.[124]

The findings of the study will be helpful to determine how the law relating to international watercourses and particularly relevant treaties have to be aligned with new development. They also elaborate the prospects for an integrated legal perspective in the coming years.

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[119] *Faber Case* 1903, *Ralston's Report*, 1903, p.609.
[120] *River Oder Case* 1929, *PCIJS,A*, 1929, No.23.
[121] *European Commission of the Danube Case* 1927, *PCIJS,B,* No.14;*Oscar Chinn Case* 1934, *PCIJS, A/B,* 1934, No.63.
[122] *River Meuse Case* 1937, *PCIJS, A/B*, 1937, No.70.
[123] *Lake Lanoux Arbitration* 1957, *ILR*, 24, 1957, pp.101-142.
[124] *Gabcikovo-Nagymaros Project Case* 1997, *ICJ Reports*, 1997, pp.1-72; *Kasikili/Sedudu Island* Case, see *ICJ Reports*, 1999, p.1045. These cases are also available on the Court's web site, <www.icj-cij.org> (revisited Nov.9, 2004).

PART II: DEVELOPMENT OF THE LEGAL REGIMES THROUGH INTERNATIONAL INSTITUTIONS

In this part, the development of the legal regimes of uses and protection, and the changing management modalities of international watercourses will be explored through the work of international institutions, focusing on the relevant work of the inter-governmental and non-governmental international organizations. The study starts with an exploration of the work of the Concert of Europe from 1815. The discussion will then focus on the work of the League of Nations and further on to the work of the United Nations. As well, the work of the two leading private, non-governmental organizations, the IDI and the ILA will be examined.

The study will then turn its focus on the work of the United Nations, starting from the mid 1950's to the late 1990's. This assessment is particularly focused on the work of the International Law Commission 1974-1994, leading to adoption of the 1997 UN Convention, which will be examined in the separate part of the study. As to the UN's work in general, the GPP of environmental protection and developmental need, which are embodied in the work of different UN conferences, will be studied. The GPP demonstrates the emergence of the integrated approach, where protection and uses of transboundary watercourses are considered inextricably linked.

Even though the above mentioned inter-governmental and non-governmental organizations are not the lawmaking bodies at international level, their work and initiatives, consisting of resolutions and recommendations, are widely relied upon in diplomatic negotiations between riparian States and adjudication of cases concerning the issues of the use allocation, protection and improvement of international watercourses. The basic principles, institutional mechanisms and dispute settlement rules embodied in the work of inter-governmental organizations and the non-governmental organizations will be studied from the point of view of the regimes of uses and protection of international watercourses.

CHAPTER 2: INTER-GOVERNMENTAL AND PROFESSIONAL ORGANIZATIONS

2.1. Introduction

This exploration of the regimes of international watercourses begins with an assessment of the work of the Concert of Europe, i.e. the 1815 Final Act of the Congress of Vienna, which is considered to be the starting point of the development of the modern law of international rivers. Subsequently, the study will look at the legal regime established by the 1921 Barcelona Convention, which is one of the important works of the League of Nations, leading to the further development of the law. Along with this, the study will examine the works of two non-governmental organizations. The starting point is the work of the IDI, i.e. the 1911 Madrid Resolution concerning the Use of International Watercourses, as well as the IDI's other resolutions that were adopted up to the 1970's. Afterwards, the work of the ILA, including the 1966 ILA Helsinki Rules and its 1999 Consolidation, will be examined.

2.2. Concert of Europe

The Concert of Europe was an informal international system established by the major European powers from the early 19th century, lasting until the beginning of the First World War.[125] In this period, the Concert of Europe, apart from its work for international conflict resolution, was involved with the establishment of international rules, holding conferences and concluding conventions. As to the legal regimes of international watercourses, the work of the Concert is noteworthy. Although the international river concept existed already at the initial stage of international law,[126] and attempts were made to establish a "natural right" of free navigation for all States,[127] the international river as a legal concept was not recognized under treaty law until the 1815 Congress of Vienna. Thus, it can be said that the modern development of international watercourse law begins with the Concert of Europe. The 1815 Final Act of Congress of Vienna recognized the concept of international rivers,[128] and the freedom of navigation.[129] The Act dealt with navigation, uniformity

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[125] The Concert of Europe was not an international organization in the modern sense of the term like, e.g. the League of Nations and the United Nations. It was rather a loose cooperation between the major European powers of the period. The system of the Concert was based on the balance of power theory of international politics rather than on international law. However, during a period of almost 90 years, the Concert provided an informal method of international dispute settlement in order to keep international order.

[126] Cohen, 1991, p.520.

[127] Kelsey, 1995, pp.303-318.

[128] Article 108 of the Final Act of the Congress of Vienna June 9, 1815, *GETNC*, 1918, p.37. See also, Kaeckenbeeck, 1918, pp.57-60.

[129] Article 109 of the Final Act of the Congress of Vienna.

rules of dues and police tariffs, officers for the collection of dues, towing-paths, harbor dues, customs, and regulations. This could be considered as the starting point of the modern development of the regime of navigational use of international rivers. Articles 108 to 116 of the 1815 Final Act particularly referred to concept of the international river and freedom of navigation. According to these provisions:

1) the riparian States of the same river should agree to regulate its navigation by common consent;
2) the navigation on such rivers is to be free up to their mouths;
3) the rules should be uniform, applicable to all nations and favorable to commerce;
4) each riparian must carry out the work necessary for navigation in the part of the river following their territory; and
5) tolls are to be suspended, while expenditures on the works done in the interests of navigation may be collected and custom duties be treated separately.[130]

According to the 1815 Final Act, the States, whose territories are separated or traversed by the same navigable river, are obliged to regulate of all aspects regarding its navigation by common consent. The consent of the riparian States is required in order to establish stations for the collection of dues. The regulations, once made, should not be altered, except with the consent of all of the riparian States. These States should ensure the execution the agreements with due regard to the particular circumstances and locality. Navigation is supposed to be regulated from the point where the river becomes navigable to the mouth of the river. Regulations should be alike for all, and as favorable as possible to the commerce of all nations, and be established to prevent customs officers from placing obstacles in the way of navigation. As far as possible, the collection of dues, maintenance of the watercourse and policing rules regarding the navigational route, should be the same along the whole of the navigable watercourse. Due consideration should be given, by means of a strict policing of the bank of the river, to preclude every attempt of the inhabitants to smuggle goods with the help of boatmen.

Equality and equal treatment of rules should also extend as much as possible to the river's branches and tributaries, which, in their navigable course, separate or traverse different States. With regard to harbors, existing staple duties or dues should be preserved only as far as the riparian States (without regard to the local interests of the place or of the country where they are established) find them necessary or useful to navigation and commerce in general.

[130] Kaeckenbeeck, 1918, pp.31-77.

Regarding towing-paths and related works, each riparian State should maintain the towing-paths in order to facilitate navigation, in accordance with the regulations of the territory, so that navigators may encounter no obstacle. The regulations shall determine the manner in which the riparian States shall participate in these latter works, in cases where the opposite bank belongs to a different government.

The 1815 Final Act thus recognizes the international river concept and the freedom of navigation, marking a modern turning point in the evolution of the regime of navigational use. The treaty practice of the riparian States in Europe, Asia, Africa, South America and North America wittiness the immense influence of the 1815 Final Act. The 1856 Paris Congress, which was also convened under the auspices of the Concert of Europe, opened up the Danube River for the navigational use of all nations. It also created a permanent commission and declared that the rules adopted in the 1815 Final Act was a "part of the European public law".[131]

The peace treaties concluded at the end of World War I contained a series of articles providing rights for nationals of the Allied and Associated powers with respect to the inland waterways that had been occupied by the Entente Powers. For example, the 1919 Treaty of Versailles[132] extended the validity of the 1868 Convention of Mannheim, which regulated the navigation of the Rhine and Moselle rivers. Articles 331 and 332 of the Treaty of Versailles declared the Elbe, Oder, Niemen, Danube and Ulm rivers,[133] together with the lateral canals and channels that served as access to the sea for more than one State, to be international rivers.[134] In the exercise of the freedom of navigation on international rivers, it was also declared that there should be equal treatment regarding the use of waterways by riparian States.

Equal treatment was also to be applied to nationals of the riparian States, their property and ships flying flags of their respective nations. With respect to the priority of water use it should be noted that Article 337 of the Treaty of Versailles allowed for the priority of uses (such as irrigation and fisheries) over navigation, provided there is consent by all concerned parties.[135]

The following table illustrates the first phase of development of the legal regime of navigational use. In this table, the treaties are considered as independent variables and the specific Concepts and Approaches (CA), Substantive Principles (SP), Implementation Mechanisms (IM), and Dispute Settlement (DS) as dependent variables.

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[131] Colombos, 1967, p.238.
[132] Article 354 of the Treaty of Versailles 1919, *MNRGT*, 9, p.643.
[133] Article 331, ibid.
[134] Article 331, ibid.
[135] Ibid.

	CA	SP	IM	DS
The 1815 Final Act	*ir*	*fn*	*ic*	*mc*
The 1856 Paris Congress	*ir*	*fn*	*ic*	*mc*
The 1868 Convention of Mannheim	*ir*	*fn*	*ic*	*mc*
The 1919 Treaty of Versailles	*ir*	*fn*	*ic*	*mc*

CA = Concepts and Approaches (*ir* = *international river*); SP = Substantive Principles (*fn* = *freedom of navigation*); IM = Implementation Mechanisms (*ic* = *international commission*); DS = Dispute Settlement venues (*mc* = *mixed court*)

This table illustrates that the 1815 Final Act is the first multilateral treaty of general international application: the Concepts and Approaches (CA) which are initially adopted (Article 108) for the purpose of the regime of navigational use is the international river (*ir)*; the Substantive Principle (SP) governing the regime defined by the 1815 Final Act (Article 109) is the freedom of navigation (*fn)*; the Implementation Mechanisms (IM) subscribed to in the regime (Article 116) is the international commission (*ic*); and the method of Dispute Settlement venues (DS) provided for in the regime is Mixed Courts (*mc)*. In accordance with the 1815 Final Act, the 1868 Convention of Mannheim established an international commission to regulate river navigation, fixing the competent jurisdiction in case of dispute, which declared that the decisions given by the Mixed Courts (*mc)* were binding in each State without appeal. This was adhered to in the 1919 Treaty of Versailles (Article 354).

As to the international watercourse management modality, this table illustrates a piecemeal cooperation for the purpose of navigational use; the regime of non-navigational uses was underdeveloped at this stage. Apart from the independent and dependent variables illustrated in the table, the common accords, mutual consent and reciprocity between riparian States were the main principles for the navigational use of international rivers. These principles were developed from the beginning of the Concert of Europe, and were further enhanced by the work of the League of Nations.

2.3. League of Nations

The peace treaties following World War I recognized the need for regulation of non-navigational uses of international rivers.[136] For example, the question of the industrial and agricultural exploitation of rivers was partially dealt with by the 1919 Treaty of Versailles, which provided for the creation by interested States of special organizations for carrying out works connected with the upkeep and improvement of the international portions of navigable rivers.[137] As to boundary rivers, Article 30 of the 1919 Treaty of

[136] Articles 297 and 298 of the Treaty of St.Germain, *ST/LEG/SER.B/12, Legislative series Treaty* No.116; Articles 281 and 282 of the Treaty of Trianon and Article 109 of Treaty of Lausanne, ibid No.119.

[137] Articles 336 and 337 of the Treaty of Versailles, ibid No.115 and 8 *LNTS*, 26.

Peace between the Allied Powers and Germany contains provisions which, inter alia, states that the boundary commissions established by this treaty will specify in each case whether the frontier line shall follow any changes in the watercourse or channel which may take place. Or on the other hand, whether such line shall be definitely fixed by the positions of the watercourse or channel at the time of the treaty's entry into force.

The first step of the League was to recommend its Member States "to make provisions to secure and maintain freedom of communications and of transit and equitable treatment for the commerce of all members of the League."[138] Subsequently, in 1920, the League decided to hold a conference with representatives of all Member States in Barcelona in 1921. The 1921 Conference adopted two Conventions: 1) A Convention and Statute on the Freedom of Transit, and; 2) A Convention and Statute on the Regime of Navigable Waterways of International Concern, which provided for freedom of communications by free exercise of navigation on navigable waterways.[139]

Forty States signed the 1921 Barcelona Conventions of general applications, including the Convention on the Freedom of Transit and the Convention and Statute on the Regime of Navigational Waterways of International Concern.[140] These conventions were generally devoted to the navigational use of international rivers, including the equality of treatment and reservation of the rights of the riparian State to take regulatory measures, insofar as they do not interfere with freedom of navigation.[141]

In the exercise of navigation, nationals, property, and flags of all the contracting States had to be treated in all respects on a footing of perfect equality.[142] No dues of any kind could be levied other than equitable dues in the nature of payment for services rendered in maintaining and improving navigability of waterways.[143] Each riparian State was bound to refrain from measures likely to reduce the facilities for navigation and to undertake to remove any obstacles and dangers to navigation.[144] This provision is often cited as giving priority of navigation. Nonetheless, the 1921 Barcelona Convention includes some provisions relating to uses other than navigation.[145]

The Statute of the 1921 Barcelona Convention regarding navigable waterways set minimum standards of navigation. It did not entail the withdrawal of prevention of possible future grants of any greater facilities for the freedom of navigation under conditions consistent with the

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[138] Article 23 (e) of the Covenant of the League of Nations.
[139] See, 7 *LNTS*, 35. Also see, Manner, 1973, pp.131-141.
[140] Article 1 of the 1921 Barcelona Convention used the term "navigable waterways of international concern", see 7 LNTS, 35.
[141] Articles 2, 3 and 25, ibid.
[142] Article 4, ibid.
[143] Article 7, ibid.
[144] Article 10, ibid.
[145] *YILC*, 1974, Vol. II, Part Two, p.57, para 67.

principle of equality.[146] The Statute did not attempt to regulate the rights and duties of belligerents and neutrals in times of war, but it continued to be in force in times of war so far as such rights and duties permitted.[147] The Statute also provides that in the absence of other arrangements, the waterways are to be administered by each of the riparian States under whose authority they may be situated.[148]

Under the additional Protocol to the 1921 Barcelona Convention and the Statute on the Regime of Navigable Waterways of International Concern, the signatories undertook, on the condition of reciprocity and in times of peace, to concede to each other a perfect equality of treatment to their flags with regard to the transport, import and export of goods on all navigable waterways, on all naturally navigable waterways and also in ports situated on these waterways. The 1921 Barcelona Convention and Statute, which established the regime of waterways of international concern, were based upon the river concept for inland navigation. However, the term "regime" is used broadly in the 1921 Barcelona Convention, and it may be interpreted to include non-navigational uses.

One of the other measures adopted by the League of Nations in this area is the establishment of the International Body for Communications and Transits. This body was charged with the duty of safeguarding the principle of free navigation on international rivers. An Advisory and Technical Committee functioned under this body, with the task of promoting communication and transit between States.[149] The Advisory and Technical Committee functioned until the outbreak of World War II put an end to its activities. The League of Nations also proposed a tribunal authorized to enforce the suspension or suppression of any works which impeded navigation in the international section of the river in question, but was required to allow in its decisions for all rights connected with irrigation, water power, fisheries and other national interests.

Following the development of the legal regime of navigational use, the need for development of the rules related to the non-navigational regime began to be realized. The issue of a greater utilization of waters for industrial purposes was further considered at the 1923 Geneva Conference, which adopted the 1923 Geneva Convention Relating to the Development of Hydraulic Power Affecting More Than One State.[150] Ratified by eleven States, the 1923 Geneva Convention entered into force in 1925, providing rules on non-navigational uses. Seventeen of the States signatories to the 1923 Geneva Convention sought to give effect to the idea of cooperation among States for non-navigational uses, particularly hydroelectricity

[146] Article 20 of the 1921 Barcelona Convention.
[147] Article 15, ibid.
[148] Article 12, ibid.
[149] Based on Article 23(e) of the Covenant of the League of Nations.
[150] See, 36 *LNTS, 76*; Record and Text 1924, C.30M.10.1021.VIII.

development.[151] The idea of cooperation was one of voluntary association and negotiation. Even though "nothing really effective resulted from these endeavors,"[152] the 1923 Geneva Convention was the first multilateral treaty of a general scope to include a regime of non-navigational uses of international rivers.[153]

It should be noted that the 1923 Geneva Convention took into account the traditional river concept, top priority among the various uses of river water was accorded to navigation. Especially on streams of a size sufficient to bear the regular traffic of vessels a fair portion of the year, navigation rights carried priority. In such watercourses, the riverbed was part of the public domain and the rights of riparian owners were distinctly subordinate to those of the public. Though non-navigational uses were regarded as subordinate to the navigational use, the interrelationship between the regime of navigational use and non-navigational uses was indirectly recognized.

The League of Nations endeavored to unify the law of international rivers concerning the regime of navigable use. It sponsored the 1930 Geneva Conference. This Conference, in order to make a unification of laws and regulations applicable to river navigation and trade, drafted the following Conventions: a) on the registration of inland navigation vessels; b) on administrative measures for attesting the rights of inland navigation vessels to a flag; and c) on the unification of rules concerning collisions in inland navigation.[154]

During the period of the League of Nations, the Seventh International Conference of American States held at Montevideo in 1933 adopted a declaration on the utilization of the waters of international rivers as to industrial and agricultural use.[155] This was the first regional, multilateral effort to regulate the non-navigational use of South American international rivers. The 1933 Montevideo Declaration prioritized industrial and agricultural use. For example, Article 10 of the Declaration provided that "in no case either where successive or where contiguous rivers are

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[151] The States who signed the Convention were: Austria, Belgium, the British Empire, New Zealand, Bulgaria, Chili, Denmark, Free City of Danzig, France, Greece, Hungary, Italy, Lithuania, Poland, Thailand, Uruguay and Yugoslavia. Eleven States ratified this Convention.

[152] Colombos, 1967, p.228.

[153] This Convention was referred to in later international courts practice. For example, the *Lake Lanoux Arbitration* examined the 1923 Geneva Convention to determine whether prior consent of the States was necessary to proceed with the water project, see 24 *ILR*, 1957, pp.101-142.

[154] *Hudson's International Legislations*, Vol.III and V.(Measurement of vessels in inland navigation was dealt with by the Convention adopted at Paris on November 27, 1925, see ibid Vol.III, p.1808). The other conventions signed along the same lines are the Bangkok Convention 1956 for facilitating inland navigation between Asian countries, and the Geneva Convention 1960 relating to unification of certain rules concerning collations in inland navigation, see Starke, 1989, p.193.

[155] *YILC*, Vol.II, Part Two, 1974, pp.212-213.

concerned, shall the works of industrial or agricultural exploitation performed cause injury to the free navigation thereof."[156]

The following table illustrates the second phase of development of the legal regime of navigational use and the first stage of the development of the non-navigational uses during the time of the League of Nations. As with the previous table, the treaties are the independent variable and the Concepts and Approaches (CA), Substantive Principles (SP), Implementation Mechanism (IM) and Dispute Settlement (DS) are the dependant variables.

	CA	SP	IM	DS
The 1921 Barcelona Conventions	*ir*	*fn*	*ibct/atc*	*ad*
The 1923 Geneva Convention	*ir*	*pc*	-	*ad*
The 1930 Geneva Convention	*ir*	*fn*	*ibct/act*	*ad*
The 1933 Montevideo Convention	*ir*	*bu*	-	*ad*

CA = Concepts and Approaches *(ir = international river*); SP = Substantive Principles (*fn = freedom of navigation; pc = prior consent; bu = balanced use*); IM = Implementation Mechanisms (*ibct/atc = International Body of Communication and Transport, and Advisory Technical committee*); DS = Dispute Settlement venues (*ad = adjudication*)

This table illustrates continuation of the development of the legal regime of navigational use, which originated through the instruments of the Concert of Europe. The Concepts and Approaches (CA) of the regime of navigational use continues to be the international river (*ir*), and Substantive Principle (SP) the freedom of navigation (*fn*). A new development at this second stage is the Implementation Mechanism (IM). The League of Nations had established two institutions: the International Body of Communication and Transport, and the Advisory Technical Committee (*ibct/atc*), for the purpose of the implementation of the freedom of navigation. It is noteworthy that dispute settlement provisions of the international river agreements of the 1920's and 1930's referred the Permanent Court of International Justice (PCIJ). Indeed, in 1929 the PCIJ decided the *River Oder Case* (discussed separately in this study) concerning the issues related to navigational use.

As regards parity or priority between the regimes, it is apparent that the 1921 Barcelona Convention and its Statute prioritized the navigational use over the non-navigational uses. Although aiming for parity between uses, the 1923 Geneva Convention subordinated non-navigational uses to navigational use. According to this Convention, prior consent (*pc*) between

[156] Reproduced in *YILC*, 1974, Vol.II, Part Two, p.212.

the riparian States was necessary for the hydroelectricity development of the international river. The point of departure for the 1933 Montevideo Convention was the principle of balanced use (*bu*) between the navigational use and non-navigational uses, but the Declaration did not fully achieve its aim, because navigational use continued to dominate over the non-navigational uses in the Inter-American States as well as in other parts of the world.

As to the scope of uses of international rivers and the management modality implemented, the conventions adopted during the time of the League of Nations witness that the scope and modality certainly extended from navigational use to non-navigational uses. However, a harmonization of the regimes remained underdeveloped.

2.4. Institut de droit International

As an international non-governmental body composed of elected jurists, the IDI[157] through its declarations and resolutions has contributed to the development and codification of international watercourse law.

In its Paris session of 1910, the IDI for the first time decided to study the question of determining the rules of international law relating to international rivers from the point of view of non-navigational uses, i.e. hydroelectricity production.[158] In its Madrid session of 1911, the IDI adopted the Resolution on International Regulations regarding the Use of International Watercourses.[159] In the Regulation II, Paragraph 4, of the Madrid Resolution there is preeminence of navigational use, stating that "the right of navigation by virtue of a title recognized in international law may not be violated in any way whatsoever." In this Resolution, the statement of reasons clarifies that "international law has dealt with the right of navigation with respect to international rivers but the use of water for the purposes of industry and agriculture etc., was not foreseen by international law."[160] Through the 1911 Madrid Resolution, the relations between non-navigational uses and environmental protection were recognized. For example, the Resolution prohibited the change of a natural flow of stream without the consent of the riparian; all alterations injurious to the water were forbidden.[161] Thus, the 1911 Madrid Resolution can be considered as prohibiting against injury by water alterations, withdrawing

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[157] The IDI was established in 1873 as a professional body of jurists, aiming codification and development of international law. Since its existence, it has remained strictly a scientific body, its associates being elected among jurists who have rendered service to the discipline of international law in either the theoretical or the practical sphere. Promotion to executive membership depends on diligent attendance at the biennial sessions, held in different places and reported in the *Annuaire*. The method of working follows a pattern of drafting of resolutions on selected topics; Parry and Grant, (*EDIL)*, 1986, pp.170-171.

[158] *Annuaire de l' de droit international*, Paris session, 1910, Vol.23, pp. 498-499.

[159] Ibid, 1911, Vol.24, pp.347-364.

[160] Ibid, pp.365-367.

[161] Ibid, Regulation, II (1, 2 and 4).

and violation of the right of navigation, and prohibiting an upstream State from engaging in works causing flooding in downstream States. The Resolution is aimed at contiguous watercourses, boundary lakes and successive watercourses, whereby the mutual consent of the States concerned was the basis for prevention of detrimental changes of watercourses.

In the 1950's, the IDI revived the issue of international law relating to international rivers, in particular the 1956 Grenada session.[162] In 1957, a preliminary paper on the subject was submitted,[163] followed by the 1959 interim report containing a draft resolution.[164] In 1960, a draft resolution was prepared to be submitted at the 1961 Salzburg Conference.

At the 1961 Salzburg Conference, the IDI adopted the Resolution on the Utilization of Non-Maritime International Waters based on the consideration of the economic use of international rivers.[165] The 1961 Salzburg Resolution recognized riparian States' right to utilize the waters that cross or border the territory of a State subject to the limitation of the principle of equitable utilization.[166] The Resolution is right-oriented, declaring a State's right to make use of shared waters through equity, taking into consideration the respective needs of States relevant to a particular case. Loss or damage sustained due to one State's utilization by another State(s), requires adequate compensation.[167] Advance notice is required before the start of water projects.[168] Disagreements between riparians should be resolved by negotiation within a reasonable time.[169] If negotiation fails, the controversy should be submitted to a judicial or arbitration settlement.[170] This shows that States are obliged to provide advance notice of new changes and to negotiate in the event of conflicting uses.

In addition to the 1911 Madrid Resolution and the 1962 Salzburg Resolution, the IDI adopted the Resolution on the Pollution of Rivers and Lakes at its 1979 Athens session. This Resolution recognizes that the exercise of sovereign rights to exploit its own resources should be in harmony with the environmental condition within and without the boundary of the State.[171] According to the 1979 Athens Resolution, riparian States should also decrease existing pollution and prevent further pollution within their best possible limits. To achieve such objectives, States should

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[162] *Annuaire de l'Institute de droit international*, Grenada session, 1956, Vol.46, p.92.
[163] *Annuaire de l'Institute de droit international*, Neuchatel session, 1959, Vol.48, p.213.
[164] Ibid, p.131.
[165] *Annuaire de l'Institute de droit international*, 1961, Vol.49, pp.381-384.
[166] Draft Article 3, ibid.
[167] Draft Article 4, ibid.
[168] Draft Article 5, ibid.
[169] Draft Article 6, ibid.
[170] Draft Article 8, ibid.
[171] For English translation of the authentic French texts by the IDI see, *Basic Documents of International Environmental Law, IELPS*, Vol.1,p.256.

also enact necessary legal rules and reach agreements or cooperate with other States concerned. A breach of such an obligation entails an international liability.

The Resolution is without prejudice to the obligations that are imposed upon States with respect to pollution occurring in their own territories. Pollution, according to the Athens Resolution, means "any physical, chemical or biological alteration in the composition or quality of waters which results directly or indirectly from human action as affects the legitimate use of such waters thereby causing injury."[172] The 1979 Athens Resolution recognizes common interests of States sharing international drainage basins and provides for equitable utilization in a rational manner balancing the various interests at stake and ensuring that activities within their borders cause no pollution in the waters of international rivers and lakes beyond their boundary.

Article III of the 1979 Athens Resolutions was subsequently revised in order to require States to prevent increases in existing levels of pollution, to abate existing pollution as soon as possible and to prevent new forms of pollution, and to cooperate with each other for achieving these objectives.

In 1991, a Program of Action on the Protection of the Global Environment was declared by the IDI.[173] This Program declared that the right to healthy environment forms a part of the fundamental human rights, and therefore the protection and preservation of the global environment are of paramount importance for humanity and its future. The Declaration also recognized that responsibility for damage to the environment falls to States and also to natural and juridical persons, national or international.

In sum, the work of the IDI in this field can be assessed on the basis of the important resolutions. The 1911 Madrid Resolution, representing the early 20th century, recognizes the concepts of contiguous and successive rivers as well as boundary lake. The emphasis in this resolution is on the right of navigation. Given the increase in non-navigational uses of international watercourses in the late 1950's and the concern over the consequences, the 1961 Salzburg Resolution takes a broader perspective in the concept of the hydrological basin and common interests of the basin States. While in the 1911 Madrid Resolution, the IDI recognized the mutual consent of riparians as a basis for watercourse use, the 1961 Salzburg Resolution takes the State's right oriented approach towards shared international basins and relies on equity as being the basis of use of international rivers. Further, in the 1979 Athens Resolution, the IDI included the State's duty to cooperate.

The following table illustrates IDI's harmonized approach to the legal regimes of the uses and protection of international watercourses. In this

[172] Article 1 of the 1979 IDI Athens Resolution on the Pollution of Rivers and Lakes and International Law, ibid.

[173] At its 65th session held at Basel (Switzerland) September 2, 1991.

table, the IDI's overall approach is considered to be the independent variable, and the Concepts and Approaches (CA), Substantive Principles (SP), Implementation Mechanism (IM) and Dispute Settlement (DS) are treated as the dependant variables.

	CA	SP	IM	DS
The IDI's overall Approach	*ir/idb/iw*	*eu/nh*	*an/pc/rt/ac*	*ad/a*

CA = Concepts and Approaches (*ir* = *international river*; *idb* = *international drainage basin*; *iw* = *international watercourse*); SP = Substantive Principles (*eu* = *equitable utilization*, *nh* = *no-harm*); IM = Implementation Mechanism (*an* = *advance notice*; *pc* = *prior consultation*; *rt* = *reasonable time*; *ac* = *appropriate compensation*); DS = Dispute Settlement venues (*ad* = *adjudication*; *a* = *arbitration*)

It is noteworthy in this table that depending on the type of water uses, the IDI embraces multiple Concepts and Approaches (CA), including international river (*ir*), international drainage basin (*idb*) and international watercourses (*iw*). For the navigational use, the IDI approach employs *ir*, for the non-navigational use allocation it adheres to *iw*, and *idb* for environmental protection.

Regarding the Substantive Principles (SP) of uses, the IDI generally recognizes that in cases of water allocation, the equitable utilization (*eu*) principal prevails over the no-harm rule (*nh*). However, according to Article 2 of the IDI's 1979 Resolutions, the no-harm rule (*nh*) prevails over equitable utilization (*eu*) in the case of water quality protection. This seems to be a balanced approach towards *eu* and *nh*, which in turn implies an integration of the regimes of uses and environmental protection.

The legal issues related to Substantive Principles (SP) and Implementation Mechanism (IM), promoted by the IDI, are requirements of an advance notice (*an*), and prior consultation (*pc*) before the commencement of water projects, as well as reasonable time (*rt*) for the response to *an* by the recipient party, and appropriate compensation (*ac*) for damage incurred by such projects. All these legal issues have contributed to the advancement of the harmonized perspective and management modality.

The IDI's venues of Dispute settlement (DS) related to international watercourses include adjudication (*ad*) and arbitration (*a*). This should be compared to the mixed courts (*mc*) adopted by the 1815 Final Act of the Congress of Vienna. Given the IDI's view on the dependent variables and management of international watercourses, it clearly subscribes to an integrated approach with respect to the regimes of uses and environmental protection.

Since the late 1960's, the IDI has coordinated its work with the ILA in the codification and development of the law of the international river, international drainage basin, and international water resource. The rules

adopted by the ILA provide for a much more integrated legal perspective of the regimes of uses and environmental protection, shifting the paradigm from a piecemeal to an integrated management.

2.5. International Law Association

The ILA[174] began its work with respect to international watercourses in the mid 1950's. At its 1966 Helsinki conference, the ILA adopted the Rules on the Uses of Waters of International Rivers (hereinafter referred to as the "1966 ILA Helsinki Rules").[175]

The 1966 ILA Helsinki Rules introduce new principles of equitable and reasonable sharing in beneficial water uses, which is commonly referred to as the equitable utilization, and the concept of an international drainage basin. It also contains rules on pollution control and prevention, and navigation (including timber floating). The settlement of water disputes is also addressed in the Rules. Each Article of the 1966 Helsinki Rules is accompanied by a short commentary. The rules have constituted an important soft law source, and have considerable contributed to the development of law in this field.

The 1966 ILA Helsinki Rules were not only a collection of the rules and principles of existing international law of the time, but also included new rules *de lege ferenda*. The need to elaborate upon, supplement and, in some cases, to complement the 1966 Helsinki Rules, was soon felt by the ILA Water Resource Committee (1966-86). This include issues with respect to flood control, marine pollution of continental origin, water pollution of international drainage basin and the relationship of water resources with other natural resources and environmental elements. A consolidated set of the ILA Rules on International Water Resources was adopted at the London Conference 2000. This consolidated text had been prepared by the ILA

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174 The ILA was founded in Brussels in 1873, the same year as the IDI, largely through the interests and efforts of American publicists. Unlike the IDI, the ILA has not been a purely scientific body and welcomes to its membership not only lawyers, whether or not specialists in international law, but also ship owners, underwriters, merchants and philanthropists, and receives delegates from affiliated bodies, such as chambers of commerce and shipping, and arbitration or peace societies, thus admitting all who, from whatever point of view, are interested in the improvement of international relations. The ILA has contributed to the development of numerous field of international law. It has been engaged for more than forty years in issues relating to international water law. The history of international water law is intimately related with the work of the ILA. The ILA texts on any topic of international law are referential, in contrast to the drafts made by the International Law Commission (ILC). However, the ILA Drafts have been an important basis for ILC Drafts.

175 *Report of the ILA Fifty-Second Conference*, Helsinki, 1966,pp.484-532. The 1966 ILA Helsinki Rules consists of Six Chapters and 37 Articles, covering topics such as the equitable utilization of international rivers, pollution control and prevention, navigation and timber floating, and procedures for preventing and dispute settlement.

Water Resources Committee at its meeting in Campione, Italy, 1999 (hereinafter referred to as the "1999 Consolidation of the ILA Rules").[176]

The first elaboration of the 1966 Helsinki Rules relating to flood control was made in the 1972 ILA Articles on Flood Control which require basin States to cooperate in times of flooding in a spirit of good neighborliness. The cooperation includes data collection and exchange as well as planning, designing and executing flood control measures. States are to communicate information about heavy rainfalls or other events likely to create flooding in neighboring States.[177] Upstream States are under no obligation to pay compensation for damage caused by floods unless the State acted "contrary to what would be reasonably expected under the circumstances."[178]

The Rules on Marine Pollution of Continental Origin were adopted in 1972 by the ILA, and are now consolidated in Chapter III, Articles 13 to 17 of the 1999 Consolidation of the ILA Rules. These rules define pollution in terms of both continental sea-water pollution and water pollution. They also define both *damage* as loss of life or personal injury, loss of or injury to property and the cost of reasonable measures to prevent or minimize such loss or injury. They further define *environmental damage* as harm to the environment of an international drainage basin as well as the costs of preventing, minimizing, or restoring the environment and any other loss or damage by any natural or juridical person.

In 1974, the Rules on the Maintenance and Improvement of Naturally Navigable Waterways were adopted as supplementary to Chapter IV dealing with navigation, and the text was to be added to Article XVIII of the 1966 Helsinki Rules.[179] The 1976 ILA Rules on the Protection of Water and Water Installations in Times of Armed Conflicts were consolidated in Chapter VII, Articles 37 to 44 of the 1999 Consolidation of the ILA Rules. According to the rules, attacks on water or water installations in times of armed conflicts are prohibited.[180] Other particular legal prohibitions include the poisoning of water or rendering it otherwise unfit for human

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[176] It consist of 10 Chapters, 67 Articles and two Annexes, see *Report of the ILA London Conference* 2000, pp.1-28.

[177] Articles 31 to 36 of the 1999 Consolidation of the ILA Rules include the 1972 Articles on Flood Control Rules.

[178] *Report of the ILA Fifty-fifth Conference*, New York, see Articles on Flood Control Related to the Helsinki Rules 1972, pp.XIV-XVI.

[179] *Report of the ILA Fifty-Sixth Conference*, New Delhi, 1974, p.xiii and pp.102-129: 1) A riparian State intending to undertake works to improve the navigability of that portion of a river or lake within its jurisdiction is under a duty to give notice to the co-riparian States. 2) If those works are likely to affect adversely the navigational uses of one or more co-riparian States, any such co-riparian State may, within a reasonable time, request consultation. The concerned co-riparian States are under a duty to negotiate. 3) If a riparian State proposes that such works be undertaken in whole or in part the territory of one or more the co-riparian States, it must obtain the consent of other co-riparian State or States concerned. The co-riparian State or States from whom this consent is required are under a duty to negotiate.

[180] *Report of the ILA Fifty-seventh Conference*, Madrid 1976, Rules on the Protection of Water and Water Installations in Times of Armed Conflicts Adopted in 1976, pp.231-156.

consumption and destroying or cutting off of water installations. The diversion of water for military purposes against civilian use is prohibited. These Rules also apply in occupied territories.

In 1976, the ILA also adopted the Guidelines of Administration of International Water Resources, suggesting to the basin States to undertake a joint international water resource administration with clear aims, adequate powers and, if needed, to include non-riparian State in such a joint venture.

The Rules on Regulation of the Flow of Water of International Drainage Basin were adopted in 1980, requiring basin States to cooperate to ensure stream flows adequate to protect the biological, chemical and physical integrity of the basin. Both the 1976 and the 1980 Rules are consolidated in Chapter VIII, Articles 45 to 50, and Annex A of the 1999 Consolidation of the ILA Rules. According to the Rules, the management and administration of an international drainage basin is to be settled by agreement and the parties should bear their own costs appropriate to the benefits derived therefrom.[181]

In 1980, the Rules on the Relationship of International Water Resources with Other Natural Resources and Environmental Elements were adopted at the ILA's Belgrade Conference. The Rules require States to ensure: (a) that the development and use of water resources within their jurisdiction do not cause substantial damage to the environment of other States or area beyond the limits of national jurisdiction, and (b) that the management of any natural resources (other than water) and other environmental elements located within their own boundaries, does not cause substantial damage to the natural condition of the water of other States.[182]

The 1982 Rules of International Law Applicable to Trans-Frontier Pollution and Rules on Water Pollution of International Drainage Basin[183] are consolidated in Chapter III, Articles 13 to 17, of the 1999 Consolidation of the ILA Rules dealing with pollution control rules in international drainage basins. Accordingly, the State of origin of transfrontier pollution has the duty to consult, give prior notice, promptly warn or provide information to the affected States so that the damage could be minimized. The basin States insofar as technically and economically feasible should ensure that waste pollutants and hazardous substances are handled and treated; cause no substantial damage to the environment; prevent new or increased water pollution that would cause substantial injury in the territory of another State; take reasonable measures to abate existing water pollution to the extent that no substantial injury is caused to the territory of

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[181] *Report of the ILA Fifty-ninth Conference*, Belgrade 1980, Regulation of the Flow of Waters 1980, pp.373-399.

[182] *Report of the ILA Fifty-nineth Conference*, Belgrade, Relationship of International Water Resources with Other Natural Resources and Environmental Elements, 1980, pp.373-399.

[183] *Report of the ILA Sixtieth Conference*, Montreal, Rules on Water Pollution on International Drainage Basins, 1982, pp.533-548.

another State; and attempt to further reduce any such water pollution to the lowest level practicable and reasonable under the circumstances.

The polluting State, without any discrimination, should provide access to justice for persons of another State who are or may be affected by water pollution originated from areas under State's jurisdiction or control. In cases of a breach of the international obligations relating to water pollution, the State in question shall cease the wrongful conduct and shall pay compensation for the injury resulting therefrom. The State whose conduct is not in accordance with its obligations, and the State which is aggravated or complaining, shall negotiate to reach a solution equitable under the circumstances.

In 1986, the ILA Complementary Rules Applicable to International Water Resources were adopted defining some of the issues not addressed in the 1966 Helsinki Rules.[184] The 1986 Complementary Rules provide that a basin State shall refrain from and prevent acts or omissions within its territory that will cause substantial injury to any co-basin State, provided that the application of the principle of equitable utilization as set forth in Article IV of the 1966 Helsinki Rules does not justify an exception in a particular case.[185] The Complementary Rules also provide that the concerned States shall use their best efforts to reach a just and reasonable arrangement in accordance with the principle of equitable utilization.[186] Furthermore, the concerned States should follow a process to reach an equitable solution in balancing the use and protection of waters.[187]

In 1986, the ILA also adopted Rules on International Groundwater Resources.[188] The term *aquifer* defined in the 1986 Rules is included in

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[184] *Report of the ILA Sixty-second Conference*, Seoul 1986, the ILA Complementary Rules Applicable to International Water Resources 1986, pp.21,275-294, 298-303.

[185] Article I, ibid.

[186] Article II, ibid.

[187] Article III: 1) When a basin State (hereinafter proposing State) proposes to undertake, or to permit the undertaking of, a project that may substantially affect the interests of any co-basin State, it shall give such State or States notice of the project. The notice shall include information, and data specification adequate for assessment of the effects of the project. 2) After having received the notice required by paragraph 1, a basin State shall have a reasonable period of time, which shall not be less than six months, to evaluate the project and to communicate its reasoned objection to the proposing State. During that period the proposing State shall not proceed with the project. 3) If a basin State does not object to the project within the time permitted under paragraph 2, the proposing State may proceed with the project in accordance with the notice. 4) If a basin State objects to the project, the State concerned shall make every effort expeditiously to settle the matter consistent with the procedures set forth in Article VI of the 1966 Helsinki Rules. The proposing States shall not proceed with the project while these efforts are continuing provided that they are not unduly protracted. If those efforts become unduly protracted, or an objecting State has refused to have resort to third party procedure for the settlement of the remaining differences, the proposing State may, on its own responsibility proceed with the project in accordance with the notice. 5) The notice and other communications referred in this Article shall be transmitted through appropriate official channels unless otherwise agreed.

[188] *Report of the ILA Sixty-second Conference*, Seoul 1986, pp.238-274.

Chapter I, Article 2 of the 1999 Consolidation of the ILA Rules, as a part of the definition of an international drainage basin. The waters of an *aquifer* that are intersected by the boundary between two or more States are international groundwaters, and such an aquifer, with its water, forms an international basin or part thereof. Those States are basin States within the meaning of the 1966 Helsinki Rules irrespective of whether or not the aquifer and its water form, with the surface waters, one part of a hydraulic system flowing into a common terminus. The 1986 Rules recognize the hydraulic interdependence of water systems. Accordingly, aquifers contribute water to or receive water from surface waters of an international drainage basin and, constitute a part of that international basin for the purposes of the 1966 Helsinki Rules. The 1986 Rules require basin States to take into account the interdependence of groundwater with other waters.

The 1994 ILA Buenos Aires Conference included two agenda items for elaboration: Cross-Media Pollution and Remedies.[189] The relation between water and other components of the environment is recognized in the ILA Rules on Cross-Media Pollution and Remedies. Cross-media pollution refers to the pollution of soil, water, air and atmosphere as a whole. The 1994 Draft Rules provide that States shall take measures to prevent, reduce, or control water pollution in an international drainage basin. They shall refrain from transferring or allowing the transfer of, such pollution to land, air, or other natural resources in such a way as to cause substantial injury beyond their territory.[190]

Individual and joint responsibility of co-basin States is recognized by the 1994 Draft Rules. Accordingly States shall, insofar as technically and economically feasible, manage the waters of an international drainage basin within their jurisdiction so that waste, pollution and hazardous substances are handled, treated, and disposed of in the manner which produces the least trans-boundary harm.[191] The objective of the States' duty to cooperate is to achieve an integrated management of water and related resources, including prior assessment of ecological impact.[192]

In 1996, the ILA adopted Supplemental Rules on Pollution.[193] According to its Draft Article 4, "States shall use their best efforts to achieve integrated management of the water resources of their international drainage basin".

Before proceeding further in the area of cross-media pollution and environmental protection, we shall look at the ILA's initial approach integrating the regime of navigational use and non-navigational uses.

The initial ILA Helsinki Rules concerning navigation[194] were elaborated upon by the Supplementary Rules on Maintenance and Improvement of

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[189] *Report of the ILA Sixty-Sixth Conference*, Buenos Aires, Argentina 1994, pp.229-242.
[190] Draft Article 1, ibid.
[191] Draft Article 2, ibid.
[192] Draft Article 3, ibid.
[193] *Report of the ILA Sixty-seventh Conference*, Helsinki 1996, pp.411-415.
[194] *Report of the ILA Fifty-Second Conference*, Helsinki 1966, pp.484-532.

Naturally Navigable Waterways Separating or Traversing Several States.[195] Rules on navigation contained in Chapter IV (Article 18-26) of the 1999 Consolidation of the ILA Rules are based upon established practices, claiming to have conventional value.

Article 18 of the 1999 Consolidation of the ILA Rules contains definitions of the key concepts, i.e. river, navigable rivers and lakes, and riparian States, relevant to the regimes of uses and environmental protection, as follows:

> 1. This Chapter refers to those river and lake portions which are both navigable and separate, or traverse the territories of two or more States.
> 2. Rivers or lakes are "navigable" if in their natural or canalized state they are currently used for commercial navigation or are capable by reason of their natural condition of being so used.
> 3. In this Chapter the term "riparian State" refers to a State through or along which the navigable portion of a river flows or a lake lies.[196]

According to the ILA commentary, rivers and lakes are navigable when their physical characteristics including the depth and width are adequate to permit passage of a vessel. Other rivers and lakes may be navigable in parts only, and it is only to the navigable portions that the rules stated in Chapter IV apply. Article 18 makes no reference to canals, they are nevertheless not excluded if navigable. For purposes of Chapter IV, a tributary is considered as a separate river. If a tributary lies wholly within the territory of one State, it is outside the scope of definition set out in this Article. Thus, a tributary wholly within the territory of one State but constituting a part of an international drainage basin would be subject to the rules of equitable utilization, as stated in Chapter II, and to those of pollution, as stated in Chapter III, but would not be subject to the rules stated in this Chapter of the ILA Rules.[197]

The freedom of navigation recognized by the ILA Rules is a subject to important limitations. Article 19, for example, states, "subject to any limitations or qualifications referred to in these Rules, each riparian State is entitled to enjoy rights of free navigation on the entire course of a river or

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[195] *Report of the ILA Fifty-Sixth Conference*, New Delhi, 1974, p.xiii and pp.102-129. Articles I, II and III of the 1974 ILA Rules on Maintenance and Improvement of Naturally Navigable Waterways Separating or Traversing Several States: "1) A riparian State intending to undertake works to improve the navigability of that portion of a river or lake within its jurisdiction is under a duty to give notice to the co-riparian States. 2) If those works are likely to affect adversely the navigational uses of one or more co-riparian States, any such co-riparian State may, within a reasonable time, request consultation. The concerned co-riparian States are under a duty to negotiate. 3) If a riparian State proposes that such works be undertaken in whole or in part in the territory of one or more the co-riparian States, it must obtain the consent of other co-riparian State or States concerned. The co-riparian State or States from whom this consent is required are under a duty to negotiate."

[196] *Report of the ILA London Conference* 2000, pp.1-28.

[197] The ILA's comment on Article 18 of the 1966 ILA Helsinki Rules.

lake."[198] The principle of free navigation insures that each co-riparian State may utilize the entire navigable course of the river for transportation or communication without regard to territorial boundaries. However, this principle does not assure that navigation receives any priority over non-navigational uses. Free navigation defined in Article 20 of the ILA Rules, which states that: "free navigation as the term is used in this Chapter, Article XIV, includes the following freedom for vessels of a riparian State on a basis of equality." This Article also includes the notion of the freedom of navigation as established by the PCIJ in an advisory opinion in 1927 concerning the jurisdiction of the *European Commission of the Danube between Galatzend and Brailia*. On the basis of equality, the freedom for vessels under Article 20 includes:

> a) Freedom of movement on the entire navigable course of the river or lake;
> b) Freedom to enter ports and to make use of plants and docks; and
> c) Freedom to transport goods and passengers, either directly or through trans-shipment, between the territory of one riparian State and the territory of another riparian State and between the territory of a riparian State and the open sea.[199]

Freedom of navigation is subject to policing by the host riparian State according to Article 21, which states:

> A riparian State may exercise rights of police, including but not limited to the protection of public safety and health, over that portion of a river or lake subject to its jurisdiction, provided the exercise of such rights does not unreasonably interfere with the enjoyment of the rights of free navigation defined in Articles 19 and 20.[200]

The right of free navigation is subject to the right of the State to enact and enforce within its territory reasonable measures necessary to effectively police its territory. Similarly, customs, public health and precautions against diseases fall within this area of regulation. Such measures must be applied to all the co-riparian States on a basis of absolute equality and must not unreasonably impede freedom of navigation.[201] The exercise of freedom of navigation needs to be conducted in a peaceful manner, as provided in

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[198] *Report of the ILA London Conference* 2000, pp.1-28.
[199] The ILA comment concerning Article 20 of the 1966 ILA Helsinki Rules states: "While freedom of navigation includes the movement of vessels to and from the sea, it is not limited to such movement. Not only does the rule of this Article apply to ships passing through a sector of the river, but it also extends to ships coming in or leaving a port. The Permanent Court of International Justice so held in its advisory opinion concerning the *European Commission of the Danube Case*, *PCIJS,B*, 1927, No.14, pp.64-65.
[200] *Report of the ILA London Conference* 2000, pp.1-28.
[201] The ILA's comment on Article 20 of the 1966 ILA Helsinki Rules.

Article 22: "Each riparian State may restrict or prohibit the loading by vessels of a foreign State of goods and passengers in its territory for discharge in such territory."[202] A riparian State may grant rights of navigation to non-riparian States on rivers or lakes within its territory according to Article 23. The scope of the right of navigation stated in this Article is an expression of the desirability of the freedom of navigation.

The grant of access by a riparian to a non-riparian State does not require the approval of a co-basin or even a co-riparian State. On the other hand, the exercise of such access may not interfere with the rights of basin States, including riparian ones, to an equitable utilization of the waters. For example, State Z, a lower riparian, may not permit navigation by vessels of State X, a non-riparian, on that portion of an international river within State Z's territory, if the result of such navigation would increase traffic to an extent which would interfere with the vessels of State A, an upper riparian exercising its right to equitable utilization, including navigation to and from the sea. The extent of the right of a riparian State to an equitable utilization of the waters of a river or lake is not enlarged by its grant of a right of navigation within its territory to a non-riparian State.[203]

The ILA in connection to Article 23 further illustrates the scope of the right of navigation:

> State A, a riparian State, permits vessels of State B, a non-riparian, to navigate within its territory on an international river. State C, a co-riparian which previously has not used the waters, seeks to initiate a use for irrigation and meets with State A to agree on an equitable utilization. State A takes the position that the use by State B for navigation be deemed a relevant factor in State A's favor in determining the rights of the co-riparian. The argument will fail. Only the uses of the waters of the riparian States are relevant in determining an equitable utilization.[204]

According to Article 24 the riparian States are under the obligation to maintain good order in the portions of the navigable courses of a river or lakes within its jurisdiction extent of the means available or made available. The ILA comment to this Article states:

> a) Existing Facilities; the right of free navigation includes the right to use the port facilities in the territory of a co-riparian State (Article XIV). Thus, the duty of maintenance extends to such facilities as well as to the river or lake itself. Maintenance includes the removal of any obstructions to navigation, dredging where required and other works

[202] *Report of the ILA London Conference* 2000, pp.1-28. The ILA's comment to this article deals with the matter of "cabotage."
[203] The ILA's comment on Article 23 of the 1966 ILA Helsinki Rules.
[204] Ibid.

necessary to preserve navigability. The obligation is limited, necessarily, by the financial ability of the riparian State.
b) Sharing of Costs; The riparian State may impose reasonable charges on the co-riparian using its port facilities or navigating the waters in its territory, to pay the costs of maintenance. Such charges should be related to the extent and nature of the use of the river or lake.[205]

Article 25 states that Chapter IV Rules are not applicable to the vessels of war or vessels performing police or administrative functions, or, in general, exercising any other form of public authority. This Article is substantially identical to Article 17 of the 1921 Barcelona Convention and its Statute. The principal purpose of the freedom of navigation is to facilitate commerce. Police boats or vessels of war or other vessels engaged in non-commercial activity, therefore, do not fall within the scope of the rules stated in this chapter.[206] Except for humanitarian purposes, the riparian States may derogate from its obligation under the circumstances mentioned in Article 26:

In time of war, other armed conflict, or public emergency constituting a threat to the life of the State, a riparian State may take measures derogating from its obligations under this Chapter to the extent strictly required by the exigencies of the situation, provided that such measures are not inconsistent with its other obligations under international law. The riparian States shall in any case facilitate navigation for humanitarian purposes.[207]

This Article restates the right of a State to protect its existence in time of emergency. The freedom of navigation as reflected in Articles XIII, XIV and XVII of the 1966 Helsinki Rules does not prevail when the riparian State and another State, whether or not a co-riparian, whose vessel seeks to navigate the international river or lake, are engaged in war or armed conflict with one another. Although naval vessels are subject to denial of passage, any restriction upon the passage of purely commercial vessels should be limited to situations where the passage would be detrimental to the military effort of the riparian State. Where humanitarian interests are involved, efforts should be made to permit navigation by non-military vessels where the situation permits. Article 15 of the Barcelona Statute provides: "This Statute does not prescribe the rights and duties of belligerents and neutrals in time of war. The, Statute shall, however, continue in force in time of war so far as such rights and duties permit."[208]

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[205] Ibid.
[206] Ibid.
[207] *Report of the ILA London Conference* 2000, pp.1-28.
[208] Ibid.

The following section focuses on the interrelationships between the regimes of international watercourses. In exploring the interrelationships between the regimes, it is necessary to see the relationships between Chapter II of the ILA Rules, which includes the general principles of uses, and Chapter IV of the ILA Rules on navigation. Article 3 recognizes that each basin State has rights of equal kinds and correlative with those of each co-basin State. A use of a basin must take into consideration the economic and social needs of its co-basin States for the use of the waters, and vice-versa. According to the ILA commentary to Article 18, the *basin State concept* employed elsewhere in connection with non-navigational uses is not applicable to uses by non-riparian States for navigation because international law does not accord the right to non-riparian basin States to use the rivers or lakes for navigation.[209] However, the use of an international drainage basin is subject to the principles of equitable utilization as stated in Chapter II and to rules applying to pollution, as stated in Chapter III, including the rules stated in Chapter IV on navigation.[210]

Most important of all is Article 19, which state "Subject to any limitations or qualifications referred to in these Chapters, each riparian State is entitled to enjoy rights of free navigation on the entire course of a river or lake."[211] In its commentary to Article 19, the ILA notes equal rights, perfect equality and community interests of riparian States and these principles do not assure navigation any priority over non-navigational uses.[212] The commentary notes that the state of applicable law has not gone so far in providing such a right to a non-riparian.[213] The ILA's commentary to Article 23 notes that the extent of the right of a riparian State to an equitable utilization of the waters of a river or lakes is not enlarged by its grant of a right of navigation within its territory to a non-riparian.[214]

The ILA commentary to Article 24 refers to the commentary of Article 4 that contains the principle of equitable utilization. Particularly, commentary (b) to Article 4 concerning the "beneficial use" is a key factor integrating the regimes of the navigational and the non-navigational uses under the 1966 Helsinki Rules. It states:

> To be worthy of protection a use must be 'beneficial' that is to say, it must be economically or socially valuable, as opposed, for example, to a diversion of waters by one State merely for the purpose of harassing to each.

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[209] *Report of the ILA Fifty-Second Conference*, Helsinki 1966, p.506.
[210] Ibid.
[211] Ibid.
[212] *Report of the ILAFifty-SecondConference,* Helsinki 1966, pp.484-532. As propounded by the PCIJ in the *River Oder Case*, *PCIJS, A*, No.23, 1929, pp.26-27.
[213] Ibid, p.507.
[214] *Report of the ILA Fifty-Second Conference,* Helsinki 1966, p.509.

> A 'beneficial use' need not be the most productive use to which the water may be put, nor need it utilize the most efficient methods known in order to avoid waste and insure maximum utilization. As to the former, to provide otherwise would dislocate numerous productive and, indeed, essential portions of national economics; the latter, while a patently imperfect solution, reflects the financial limitations of many States; in its applications, the present rule is not designed to foster waste but to hold States to a duty of efficiency which is commensurate with their financial resources. Of course, the ability of a State to obtain international financing will be considered in this context. Thus, State A, an economically advanced and prosperous State which utilizes the inundation method of irrigation, might be required to develop a more efficient and less wasteful system for with, while State B, an underdeveloped State using the same method might be permitted additional time to obtain the means to make the required improvements.[215]

While the ILA's Rules acknowledge that riparian States have the right to free navigation on inter-State navigable rivers, it subjects this right to limitations or qualifications referred to in Article 19. These limitations are derived from the principle of equitable utilization. For humanitarian purposes, basin States are required to facilitate navigation under Article 26 to take into consideration vital human needs in terms of preferential use. Furthermore, the use of an international drainage basin is subject to rules concerning pollution control. Based on the review of the 1999 Consolidation of the ILA Rules (1966-1999) an integrated perspective of the regimes of navigational use, non-navigational uses and environmental protection can be identified as follows:

First, Article 2 contains the concept of international drainage basin;[216] second, Article 3 requires each basin State, within its territory, to a reasonable and equitable share in the beneficial uses of the basin; third, Article 8 establishes the supremacy of the principle of equitable utilization in the prevention of pollution; and finally, Article 19 recognizes that each riparian State is entitled to the right of free navigation within the limitations or qualifications of the reasonable and equitable share in the benefit of uses, thereby balancing the use and protection.

The most progressive proposal for drafting the law of international drainage basin exist in Article 2:

> 1. An international drainage basin is a geographical area extending over two or more States determined by the watershed limits of the system of

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[215] Ibid, p.487.

[216] *Report of the ILA Fifty-Second Conference*, Helsinki 1966, pp.484-532; *Report of the ILA Forty-Eighth Conference*, New York 1958, pp.28-99.

waters, including surface waters and groundwater flowing into a common terminus.
2. The water of an aquifer that is intersected by the boundary between two or more States is international groundwater and such an aquifer with its water forms an international basin or part thereof. Those States are basin States whether or not the aquifer and its water form with surface waters part of a hydraulic system flowing into a common terminus.
3. As used in these Rules, 'aquifer' means all underground strata capable of yielding water on a practicable basis, including fissured or fractured rock formations and the structures containing deep, so-called 'fossil waters', 'basin State' means a State the territory of which includes a portion of an international drainage basin.[217]

According to the ILA's commentary to Article 2, an international drainage basin is an indivisible hydrologic unit. This is significant in that it recognizes that a State, although not riparian to the principal stream of the basin, may supply substantial quantities of water to that stream; such a State thus is in a position to interfere with the supply of water through action with respect to the water flowing within its own territory. An international drainage basin consist of the entire area, known as the watershed, that contributes water both surface and underground to the principal river, stream or lake or other common terminus.

The international drainage basin concept was first discussed in the meetings of the ILA Rivers Committee (1954-66). In the ILA New York Conference 1958, the Rivers Committee stated that the waters of a drainage basin should be treated as an integrated whole (and not piecemeal).[218] A reference to the idea of a river basin as an integrated whole was made at the 1959 meeting of the ILA River Committee.[219] However, at the working session of the 1960 ILA Hamburg Conference it was mentioned that "the New York Principle is not a principle of international law, or, at least, it is not unanimously accepted, not recognized as such in theory and has not been followed in State practice."[220] The ILA's Rivers Committee did not discuss the New York Principle more than once. It is reflected in Article II of the 1966 Helsinki Rules, which is now included in the 1999 Consolidation of the ILA Rules. Article 2 should be read with Articles 5 and 6 of the 1999 Consolidation of the ILA Rules. Article 5 states: "A use or category of uses is not entitled to any inherent preference over any other use or category of uses" and Article 6 says: "A basin State may not be

[217] *Report of the ILA Water Resource Committee*, London Conference 2000, pp.2-4.
[218] This is also referred to as the New York Principle I, among the four principles, appearing under heading Agreed Principles of International Law see, *Report of the ILA Forty-Eighth Conference*, New York 1958, pp. viii, and 99.
[219] Ibid, Knauth.
[220] Andrassy, see *Report of the ILA Forty-Ninth Conference*, Hamburg 1960, p.38.

denied the present reasonable use of the waters of an international drainage basin to reserve for a co-basin State a future use of such waters."

Article 3 of the ILA Rule provides that "each basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin." The ILA's Commentary to Article 3 says that the Article reflects the key principle of international law in this area, that the basin State has the right to the reasonable use of the waters of the drainage basin. It rejects the unlimited sovereignty position. This Article recognizes that the basin State has rights equal in kind and correlative with those of each co-basin State.

The equal and correlative rights of the basin States does not mean that each State will receive an identical share in the uses of the waters. That will depend upon the weight of factors relating to the economic and social needs of its co-basin States. The idea of equitable sharing is to provide the maximum benefit to each basin State from the uses of the waters with the minimum detriment to the others. A "beneficial use" need not be the most productive use of the water, nor need it utilize the most efficient methods known in order to avoid waste and insure maximum utilization.

Article 8 of the ILA Rules establishes the supremacy of equitable utilization over the prevention of pollution or harm:

> A basin State shall refrain from and prevent acts or omissions within its territory that will cause substantial injury to another basin State, provided that the application of the principle of reasonable and equitable utilization as set forth in the above Articles does not justify an exception in a particular case.[221]

Finally, the most important is the "subject to limitation" of uses. "Subject to limitation" of the use is mentioned in Article 19 of the ILA Rules on navigational use. It reads, "subject to any limitations or qualifications referred to in these Rules, each riparian State is entitled to enjoy rights of free navigation on the entire course of a river or lake." Reading together Article 19 with Article 8, the limitation and qualification of uses appears as the most important principle integrating the regime of navigational use, non-navigational uses and environmental protection. The ILA River Committee (1954-1966) was authorized by the 1956 Resolution of the ILA to widen the scope of its work to include all uses of the waters of international rivers. The right of use to an international river for navigation, thought by some to have priority over other uses, was replaced by the principle of equitable utilization, which also applies to timber floating. Article VI the 1966 Helsinki Rules consolidated under Article 5 of the 1999 Consolidation of the ILA Rules provides no priority of regimes: "A use or category of uses

[221] *Report of the ILA Water Resource Committee*, London Conference 2000, p.5.

is not entitled to any inherent preference over any other use or categories of uses".[222]

Reading together also, Articles 2 and 19 of the 1999 Consolidation of the ILA Rules, the treatment of navigational use and non-navigational uses of international rivers appears to be equal. In addition to Article 8, the protection of the river environment is to be maintained in accordance to the equitable utilization, this is the key to the ILA approach of harmonizing the regimes of international watercourses. The ILA Rules on International Water Resource Law (1966-1999) is the most comprehensive instrument providing an integrated approach between the regime of navigational use, non-navigational uses and the regime of environmental protection. There is evidence suggesting that some States accepts the ILA Rules as customary rules. For example, the Argentinean Government had approved the 1966 Helsinki Rules.[223] The governments of the four States comprising the Mekong River Committee adopted a joint declaration of principles referring to Article V of the 1966 Helsinki Rules.[224] In its Proposition III on the Law of International Rivers, the Asian-African Legal Consultative Committee referred to Articles IV and V of the 1966 Helsinki Rules.[225] Most important of all, the ILC's 1994 Draft Articles, providing the principle of equitable utilization, which is included in the 1997 UN Convention as a general principle for the use allocation and protection of international watercourses recognized the 1966 Helsinki Rules as customary rules.[226] The ILA's Water Resource Committee is continuing to complete the review and revision of the rules adopted by the ILA over the 37 years, corresponding to the present state of law.[227] In its London Conference 2000, the ILA's Water Resource Committee approved a new working title as "The Rules of Equitable and Sustainable Uses in the Management of Waters." The review or revision process under the new working title continued at the 2002 New Delhi Conference. Since then, the Committee considered various drafts prepared by the Rapporteur, integrating the earlier draft, particularly the international law relating to environmental law and sustainable use.

The 71st Conference of the ILA, held in Berlin 2004, adopted the revision of its rules, including the 1966 Helsinki Rules and the other Rules on International Water Resources.[228] Noteworthy development found in the

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[222] Ibid, p.5, see also *Report of the ILA Fifty-Second Conference*, Helsinki 1966, pp.484-532.
[223] *Report of the ILA's Fifty-fourth Conference*, The Hague 1970, p.922.
[224] Doc.E/CN.11/WRD/MKG/L.405.
[225] Chauhan, 1973, p.71.
[226] In their studies, the ILC´s Special Rapporteurs, Schwebel, Evensen and McCaffrey have concluded the principle of equitable utilization as a rule of customary law and their opinion was accepted by the ILC in its Draft Article 1994.
[227] *Report of the ILA Water Resource Committee* 2002, see<www.ila-hq.org> (visited Nov.9, 2004).
[228] *Report of the ILA Water Resource Committee* 2004, see<www.ila-hq.org> (visited Nov.9, 2004).

2004 Revision of the ILA Rules are: 1) the inclusion of the term "ecological integrity" in Articles 3 and 22, which comprises the biological, chemical and physical integrity of the aquatic environment; 2) the distinction recognized in Article 5 between the integrated management (which means integration of the water management with the other recourses) and the conjunctive management, which means the management of the surface and groundwaters with atmospheric waters; 3) the term sustainability defined in Article 7 include both the conjunctive and the integrated managements; 4) the right of access to waters for individuals is recognized in Article 17, and States are required to ensure the right; and 5) flooding and drought are considered to be the extreme situations in Article 35, and States are required to cooperate to mitigate the situations.

The following table illustrates the ILA's overall approach, integrating legal regimes of uses and environmental protection. For the purpose of this table, the overall ILA approach is considered to be the independent variable, and the Concepts and Approaches (CA), Substantive Principles (SP), Implementation Mechanisms (IM) and Dispute Settlement (DS) as the dependant variables.

	CA	SP	IM	DS
The ILA's overall Approach	*idb*	*eu*	*jb*	*ad/a*

CA = Concepts and Approaches (*idb* = *international drainage basin*); SP = Substantive Principles (*eu* = *equitable utilization*); IM = Implementation Mechanisms (*jb* = *joint bodies*); DS = Dispute Settlement venues (*ad* = *adjudication*; *a* = *arbitration*)

This table demonstrates a progressive development of law particularly as regards defining the international drainage basin and the principle of equitable utilization. Even though, the concept of international drainage basin and the principle of equitable utilization were also recognized by the IDI, it was the ILA that for the first time broadly defined them. It is noteworthy that despite the general recognition of the international drainage basin, the international river continues to be an applicable concept as to the navigational use (Article 18 of the 1999 Consolidation). As to the Implementation Mechanism, the ILA not only subscribes to the Joint Bodies between the basin States but also provides for the Guidelines of Administration of International Water Resources, especially in line with the definition of the international drainage basin and equitable utilization.

Another noteworthy development of the law made by the ILA is that freedom of navigation as such was initially recognized as the Substantive Principle by the 1815 Final Act and the 1921 Barcelona Convention. This has developed to the point where it is presently governed by the principle of equitable utilization. The ILA Rules suggest that adjudication and arbitration are the Dispute Settlement methods, which are to be applied in line with the notion of the principle of equitable utilization. Above all, the treatment of regimes of uses and protection by the ILA is equal, in

particular when one reads Articles 2, 8 and 19 of the 1999 Consolidation together. This equal treatment of the different regimes, which is supposed to be applicable to all international drainage basins, has progressively moved the law of international drainage basin towards the integrated approach, embracing the hydrological unit perspective.

The IDI's approach was that the principle of equitable utilization prevailed in cases of water use allocation over the no-harm rule and the no-harm rule prevails over the equitable utilization in cases of protection. The ILA takes a slightly different approach, recognizing the principle of equitable utilization as the Substantive Principle, governing both of the uses as well as protection. The protection of the drainage basin is one of the criteria to be taken into consideration in application of the principle of equitable utilization, whereby serious harm to human health and population are unacceptable. Appreciable harm is considered to be a matter of equity compensation. States are required to ensure the appropriate legal remedies for damage to persons, native or foreign, through peaceful means providing the access to courts or administrative authorities.

2.6. Appraisal

The 1815 Final Act of the Congress of Vienna is a noteworthy contribution of an inter-governmental network of the Concert of Europe to the modern development of the regime of navigational use of international rivers. The 1815 Act defined the concept of international river for the purpose of the navigational use, which was traditionally used for the demarcation of the riparian State boundaries. This Act also defined the principle of freedom of navigation, which became the substantive principle governing not only the navigational use of international rivers but also trade and commerce among States. It was not coincidental that, starting with the 1815 Final Act of the Congress of Vienna and its recognition of the freedom of navigation, many navigable international rivers of various continents were internationalized and used as a means of colonization.[229]

As the freedom of navigation has always been intimately linked with the freedom of commerce, transportation and communication, both the colonial powers and the colonized peoples began to realize its importance, though the colonial powers were in a position to take most of the benefits from it. This led to considerable cooperation between the riparian States (essentially, cooperation between colonial powers via their colonies), and to some extent cooperation between non-riparian States. Yet the struggle for control over territory in order to control the resources remained the historical legacy of colonial times. The legacy of States' struggle for power to control over territory and its resources, which is an integral part of the

[229] From 1815 to 1914, European direct colonial domination, especially that of Britain and France, expanded from about 35% of the earth's surface to about 85% of it. See, Said, E, *Orientalism,* 2003, p. 41.

history of nation-States, was transformed into a more sophisticated means of social control through the Mandate System of the League of Nations.

The 1921 Barcelona Convention enhanced the concept and the principle established by the 1815 Final Act. This was one of the contributions of the League of Nations to the development of the regime of navigational use. Another contribution of the League is the 1923 Geneva Convention, which despite the lack of implementation provided for the basis of the future codification of the rules on non-navigational uses. The management of international rivers continued to a piecemeal manner up until the 1950's, however international dispute settlement mechanism was developed within the framework of the PCIJ. The critical legal debate about the substantive principle governing the non-navigational uses intensified during the same period. In this debate, the international watercourses were seen as a factor not only in the upper and lower riparian State interests but also in the issues related to national independence and the right of self-determination between colonial powers and colonized territories.

Among the non-governmental organizations, the IDI - since the early 20th century, and the ILA - since the 1950's, have made significant contributions to the development of the regimes of uses and environmental protection. Particularly, the 1966 ILA Helsinki Rules made a breakthrough, purporting to state the existing law, and in some cases proposing new rules, focusing on the protection with equal importance of the use of water resources. An important contribution of the ILA Rules is that they launched the concept of the international drainage basin, the principle of equitable and reasonable share in the use of international drainage basin, and they subjected all kinds of uses to these principles.

From the 1966 Helsinki Rules to the Revision 2004, the ILA has enormously contributed to the development of the regimes of uses and protection. The revision of the rules in 2004 have incorporated the idea of ecological integrity, defining conjunctive management between water uses and integrated approach between water and other natural resources as well as the environment. In order to achieve such management, the ILA Rules suggest the establishment of joint bodies among basin States and peaceful settlement of disputes between them.

A general conclusion drawn from the work of the two leading institutions is that three salient regimes do exist in international law governing the use and protection of international watercourses. An interface between the legal regimes of navigational and non-navigational uses and intimate relationships between the regimes of uses and protection have clearly evolved.

CHAPTER 3: UNITED NATIONS

3.1. Introduction

With the establishment of the United Nations (1945), a new era for the development and codification of international law began. At its Plenary Meeting of November 21, 1959, the General Assembly adopted Resolution 1401(XIV), paving the way for the development and future codification of international watercourse law. This Resolution, as a point of departure for the further development of the law, cited the relevant legal materials for the codification, including the laws and legislation of the Member States, bilateral and multilateral treaties, decisions of international tribunals and the studies of international non-governmental organizations. It was pointed out in the Resolution "That it is desirable to initiate preliminary studies on the legal problems relating to the utilization and use of international rivers with a view to determining whether the subject is appropriate for codification". The General Assembly then:

> Requests the Secretary-General to prepare and circulate to Member States a report containing;
> a) Information provided by Member States requesting their laws and legislation in force in the matter, and when necessary, a summary of such information;
> b) A summary of existing bilateral and multilateral treaties;
> c) A summary of decisions of international tribunals, including arbitration awards and;
> d) A survey of studies made or being made by non-governmental organizations concerned with international law.[230]

Affirming its Resolution 1401(XIV), and being convinced of the importance of international waters, the General Assembly passed Resolution 2669 (XXV) 1970, recommending that the ILC study the non-navigational use of international watercourses, with the aim of adopting a multilateral convention.[231] The General Assembly reminded its recommendation in Resolution 3071 (XXVIII) 1973. The work of the ILC on this subject, which started pursuant to the said resolution, ultimately led to the adoption of the 1997 UN Convention.

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[230] *YILC*, 1974, Vol.II, Part Two, p.49.

[231] GA Resolution No. 2669, XXV, GAORSupp. No.28, UNDoc.A/8028, December 8, 1970. Resolution 2669(XXV) was followed by Resolutions 2780(XXVI), 2926(XXVII), 3071 (XXVIII) and 3315(XXIX) see, *YILC*, 1976, Vol.II, Part One, p.150.

3.2. International Law Commission

With the goal of progressive development and codification of international law, and inspired by Article 13 of the UN Charter, the ILC was established in 1948 by the virtue of UN General Assembly Resolution 174(II). The ILC is a subsidiary organ of the UN General Assembly, responsible for the progressive development and codification of international law. The most significant contribution of the ILC to the law of international watercourses is its study, which became the foundation of the 1997 UN Convention on the Law of Non-Navigational Uses of International Watercourses.

In accordance with the General Assembly Resolution 2669 (XXV),[232] the ILC prepared a questionnaire for the UN Member States in 1974.[233] The questions included, for instance, "what would be the appropriate scope of the definition of an international watercourse in a study of legal aspects of fresh water uses and of fresh water pollution?" It was also questioned whether the geographical concept of an international drainage basin is appropriate for a study of the legal aspects of non-navigational uses of international watercourses and the legal aspects of pollution. Only 25 States responded to the ILC's questions,[234] of which seven States submitted their replies after the deadline.[235]

In their responses to the ILC's questionnaire, States such as Argentina, Barbados, Finland, Hungary, Pakistan, Philippines, Sweden, the United States, and Venezuela indicated their support for the basin concept,[236] and considered it a legal concept. However, some other States did not recognize the concept because of the controversy involving territorial jurisdiction in shared drainage basins. Another controversial issue was the 1966 ILA Helsinki Rules mentioned as a term of reference for the future work of the ILC. Thus, the international drainage basin concept was put to a vote in the Sixth Committee of the General Assembly, and was voted down by a count of 41 to 25, with 32 abstentions.[237] Instead, the ILC proposed the term "international watercourse as a system" in 1980. It in 1986 the following 'provisional working hypothesis' for the term international watercourse "system:"

> A watercourse system is formed of hydrological components such as rivers, lakes, canals, glaciers and groundwater constituting, by virtue of their physical relationship, a unitary whole; thus any use affecting waters in one part of the system may affect water in another part. To the

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[232] *YILC*, 1971, Vol.II, Part One, p.350, para 121.
[233] UNDoc.A/CN.4/294 Ser.A/1976/Add.1, see in *YILC*, 1976, Vol.II, Part One, p.150.
[234] *First Report on the Law of* the *Non-Navigational Uses of International Watercourses*, DocA/CAN.4/295, see in *YILC*, 1976, Vol.II, Part One, pp.184-191.
[235] UNDoc.A/CN.4/352 and Add. 1, see in *YILC*, 1982, Vol.II, Part One, pp.192-175.
[236] *First Report on the Law of* the *Non-Navigational Uses of International Watercourse*s, DocA/CAN.4/295, see in *YILC*, 1976, Vol.II, Part One, pp.184-191.
[237] *Sixth Committee Report of the General Assembly*, UNGAOR, Sixth Committee, 25th session 1974, see also, *YILC*, Vol.II, Part One, p.101, para 16.

> extent that the uses of the waters of the system have an effect on one another, to the extent the system is international, but only to that extent; accordingly, there is no absolute, but a relative, international character of the watercourse.[238]

The concept of an international watercourse system, which was thus introduced by the ILC, was for many years a source of debate between and among States and jurists today.[239]

The First Draft of the Law of Non-Navigational Uses of International Watercourses was adopted in 1984. It included 5 Articles containing the ILC's proposals concerning the term *system* and the shared resource concept. In 1984 the ILC excluded the concept of international shared water from its agenda, realizing the fact that the term shared involves the question of sovereignty of a State, which is prioritized over shared resources. The debate over the concept of shared water has turned into a legal debate like the one regarding the high seas as the *common heritage of mankind*, where the focus of the debate between States is around the term *common* rather than the *common heritage*. As an alternative to "Shared Natural Resources", the principle of equitable utilization was proposed. However, the legal implications of the "Shared Resources" were never settled, and the discussion focused on controversies about territorial jurisdiction.

The Second Draft of the Law of Non-Navigational Uses of International Watercourses was adopted in 1991 at the ILC's 43rd session. The Draft comprised of 27 Articles. The term [system] was used within brackets, but there were other articles, which reflected an awareness of the interrelationship of various water bodies and the desirability of treating watercourses as a whole. With a few modifications, the principle of equitable utilization was referred to in the Second Draft of the ILC.

The 1991 Draft Articles of the ILC were transmitted, in accordance with Article 16 and 21 of the Commission's Statute, through the UN Secretary General to the Member States for comments and observations.[240] After receiving responses from the Member States, the ILC adopted the Third Draft Articles on the Law of Non-Navigational Uses of International Watercourses in 1994 in a set of 33 Articles, including the concept of international watercourses, the principle of equitable utilization and no-harm rule.

Specifically, the 1994 Draft Articles created a controversy concerning the order of precedence between the principle of equitable utilization and the no-harm rule.

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[238] *Second Report on the Law of the Non-Navigational Uses of International Watercourses*, UNDocA/CN.4/339, 1986.
[239] Goldenman, 1990, p.775.
[240] McCaffrey, 1991, p.160.

Although the 1994 ILC's Draft Articles concern the non-navigational uses of international watercourses, they also have implications for the navigational use since different uses can have impact on each other. As to the environmental protection of international watercourses, the 1994 Draft Articles of the ILC recognizes the no-harm as the governing rule over the principle of equitable utilization, which was balanced later in the process of its incorporation into the 1997 UN Convention.

The work of the ILC was largely focused on the most controversial aspects of the substantive principles of the use allocation and protection of international watercourses. After the first Special Rapporteur Kearney submitted his report (1976) based on the analysis of the replies from the Member States to the ILC's questionnaires, the Second Special Rapporteur Schwebel proposed the draft principle (Article 6, 1981) of equitable utilization. It reads: "without its consent, a State may not be denied its equitable participation in the utilization of the waters of an international watercourse system of which it is a system State."[241] He linked this draft article with responsibility for appreciable harm (Article 8). He expressed that equitable utilization is the principle of use allocation, and if any harm is inflicted in the process of use, such use comes under the principle of equitable utilization.

Paragraph 1 of Draft Article 8 provides that "the right of a system State to use the water resources of an international watercourse system is limited by the duty not to cause appreciable harm to the interests of another system State, except as may be allowable under a determination for equitable participation for the international watercourse system involved." In Schwebel's view, appreciable harm is not the decisive factor in determining the legality of a utilization of an international watercourse.

Schwebel was succeeded by Evensen, who submitted the 1982 Draft Articles, endorsing the principle of equitable utilization. Article 6 in the Evansen's Second Draft 1984 reads as follows:

> 1. A watercourse State is, within its territory, entitled to a reasonable and equitable share of the uses of the waters of an international watercourse.
> 2. To the extent that the use of the waters of an international watercourse within the territory of one watercourse State affects the use of the waters of the watercourse in the territory of another watercourse State, the watercourse State concerned shall share in the use of the waters in a reasonable and equitable manner in accordance with the articles of the present Convention.[242]

This shows that Evensen changed the status of the no appreciable harm rule, omitting the exception clause that Schwebel had adopted. Evensen made the no appreciable harm the dominant rule, reversing Scwebel's

[241] UNDOC A/CN.4/SER.A/1982/ADD.1.
[242] UN DOC. A/CN.4/381/1984.

stand, and thereby making the no-harm rule the substantive rule, which made the principle of equitable utilization subordinate to the no-harm rule. After discussion, the ILC adopted Evensen's Draft Article that had made the no harm rule the dominating concept of the rules.

In 1985, McCaffrey was appointed the Special Rapporteur, who inherited the two sets of Draft Articles that reflected a fundamental difference on the substance of the basic principles. McCaffrey reasoned that the principles of equitable utilization and no appreciable harm are in line with Schwebel's views. In the ILC discussions, some members supported McCaffrey's approach while others were supportive of Evensen.

McCaffrey held the view that according to many specialists, the most fundamental principle is that of equitable utilization. If a downstream State is able to develop its water resources before an upstream State, the downstream State could not object to subsequent development by the upstream State on the grounds that the later development would cause it harm. Under the principle of equitable utilization, the fact that the downstream State was first to develop its share of the water resources would be merely one of many factors to be taken into consideration in arriving at an equitable allocation of the uses and benefits of the watercourse.[243] He further expounded an approach to this problem with reference to an excerpt from the commentary to Articles 8:

> *Prima facie*, at least, utilization of an international watercourse (system) is not equitable if it causes other watercourses States appreciable harm. The ILC recognizes, however, that in some instances the achievement of equitable and reasonable utilization will depend upon the toleration by one or more watercourses States of a measure of harm. In these cases, the necessary accommodations would be arrived at through specific agreements."[244]

According to McCaffrey, this approach affords a measure of protection to the weaker State that has suffered harm. The stronger State cannot justify a use that gives rise to harm on the ground that it is *equitable*. The second reason he gave is that it is far simpler to determine whether the *no harm* rule has been breached, as opposed to an instance where water uses are governed from the start by the more flexible rule of equitable utilization. Finally, he reasons that the no harm rule is preferable in cases involving pollution and other threats to the environment. While a State could conceivably seek to justify an activity resulting in such harm as being an equitable use, the no harm rule would at least imply a *prima facie* requirement for abatement of the injurious activity.

There have always been divergent views between the principle of equitable utilization and the rule of no appreciable harm. However, harm

[243] McCaffrey, 1989, p.505-526.
[244] Ibid.

that threatens human health or safety or poses a grave or long-lasting threat to the environment should be proscribed and it should not be protected under the application of the principle of equitable utilization.

The main points of disagreement are whether these rules favor upstream or downstream States, whether or not the principle of equitable utilization is compatible with no harm, and which rule should prevail over the other. Unlike the no harm rule, the principle of equitable utilization has been accepted as an established norm of customary international law. Under the principle of equitable utilization, minor injury or harm may be allowed.

The term appreciable harm was used, but never explicitly defined, by the ILC. It was later replaced by due diligence in the 1994 ILC Draft Convention. But it still remains a matter of controversy whether due diligence is a principle in its own right or is a part of the standard code of conduct between States. Eventually, the 1997 UN Convention was adopted with the substantive principle of equitable and reasonable utilization without causing any detrimental effect to other watercourse States.

The question of non-discrimination was also addressed by the ILC, stating that citizens of either upper or lower riparian States may take action in national courts to combat extraterritorial pollution. The drafting committee forwarded this idea, referring to it as a non-discrimination clause, to the ILC for its consideration, which provided recourse under domestic law. Despite the existing State practices, (e.g. the 1971 Finnish-Swedish Frontier River Agreement), this triggered criticism from some of the ILC members, stating that it is wrong to include a provision granting such broad rights to foreign nationals or legal entities, regardless of their place of residence.

The overall ILC approach is designated as the independent variable and the specific Concepts and Approaches (CA), Substantive Principles (SP), Implementation Mechanisms (IM) and Dispute Settlement (DS) as the dependent variables. This table illustrates the harmonized approach to the regimes of uses and protection of international watercourses.

	CA	SP	IM	DS
The ILC's overall approach	*iw*	*eu/nh*	*jb*	*ad/a/ffc*

CA = Concepts and Approaches (*iw* = *international watercourse*); SP = Substantive Principles (*eu* = *equitable utilization*; *nr* = *no-harm*); IM = Implementation Mechanisms (*jb* = *joint bodies*); DS = Dispute Settlement venues (*ad* = *adjudication*; *a* = *arbitration*; *ffc* = *fact-finding commission*)

The ILC approach towards the dependent variables are for the most part similar to the approach taken by the ILA, except for the Concepts and Approaches, i.e. the ILA's international drainage basin concept is changed into international watercourse concept. As to the Substantive Principles, in its 1994 Draft Articles the ILC had proposed the no-harm rule to prevail

over the principle of equitable utilization, but the 1997 UN Convention takes the ILA approach as to the equitable utilization and no-harm rule.

In the ILC's approach the Implementation Mechanism is embedded with planned measures. The other detailed work and approach of the ILC will be discussed later in connection with the 1997 UN Convention.

Apart from the work of the ILC, which contributed to the evolution of international watercourse law, the UN system has been instrumental in coordinating the work of the ILA and the ILC. The UN Secretariat acting as a link, facilitating communication between the two institutions. The following section of the study deals with the global water issues and the UN policy principles developed by and through the UN system, relevant to the legal regimes of uses and protection and their changing management paradigms.

3.3. UN's Policy Principles

Along with the aims of progressive development and codification of international law, the UN Charter seeks "to promote higher standards of living, full employment, and conditions of economic and social progress and development."[245] The important policy principles emerging from these aims are the recognition of the relationship between the economic and social aspects of development and utilization of internationally shared resources. Obviously, economic development means the utilization of shared natural resources of States, including shared water resources.

Since the late 1950's, there seems to have been a general consensus at international level recognizing "water as the key to all world resources." This included both national and international watercourses. It is relevant to note that since the 1950's, the ECE began its studies of the legal arrangements concerning the transboundary watercourses of Europe, and after decades of work, this led to the adoption of the 1992 ECE Helsinki Convention.

With an awareness of the increasing water crisis and likelihood of water conflicts in different parts of the world, the United Nations Educational, Scientific and Cultural Organization (UNESCO) launched the International Hydrological decade in 1957, eventually leading to the *Water for Peace* conference (1967), as part of the UN campaign for protection of the globe against shortages of water resources. This was done in view of the growing demand for water for the 20th century due to expansion of industry and population growth.

In the 1960's, a wide range of policy principles emerged through the UN system. One example is the mentioned international Water for Peace Conference, held in Washington in 1967. The discussion at this conference was not limited to watercourses, but all types of fresh water were on the table. Also, in recognition of the increasing danger of misuse of nuclear

[245] Article 55 of the UN Charter.

energy, in 1969 the International Atomic Energy Agency (IAEA), among other things, established the Panel of Experts to study and report the dangers of disposal of radioactive wastes into rivers, lakes and estuaries.[246]

In the 1960's, there also emerged the recognition of the relationship between economic and social aspects of development and utilization of internationally shared resources, including international watercourses. For example, the General Assembly Declaration on Social Progress and Development 1969 (hereinafter referred to as the "1969 Declaration"), in its Article 1 provides that:

> All peoples and all human beings without distinction as to race, color, sex, language, religion, nationality, ethnic origin, family or social status, or political or other conviction shall have the right to live in dignity and freedom and to enjoy the fruits of social progress and should, on their part, contribute to it.[247]

In addition, according to the Declaration's Article 8 "each government has the primary role and ultimate responsibility of ensuring the social progress and well being of its people, of planning social development measures as part of comprehensive development plans, of encouraging and co-coordinating or integrating all national changes in the social structure."[248]

The UN Development Program (UNDP) is the global development network, advocating for change and connecting countries through knowledge, experience and resources to help people build a better life, working with them on their own solutions to national and global development challenges.[249] Apart from the promotion and protection of human rights, the UNDP's network links and coordinates global and national efforts to reach the set goals, which include, among others, democratic governance, poverty reduction, crisis prevention, energy and environment, information and communications technology.

The GPP developed during the 1960's through the UN system, embrace a wide range of issues. The GPP recognized: *Water for Peace*; increasing need for drinking water and industrial use; the need to safeguard water resource against radioactive waste; the link between social and economic development; and the need for implementation of these principles by States.

In the 1970's, the evolution of these principles continued. The Economic and Social Council of the UN established the Committee on Natural Resources in 1970 according to Resolution 1535 (XLIX), responsible for coordinating the work of the UN system in regard to shared natural resources. The Committee formulated "guidelines for actions in the

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[246] *Report of the Panel of Experts* 1969 see, YILC, 1974, Vol.II, and Part Two, para 361.
[247] *New International Economic Order, Selected Documents* 1945-1975, Vol.2, p.850.
[248] Ibid.
[249] See<http://www.undp.org> (visited Nov.10, 2004).

development of natural resources, including the technical and economic aspects of international river basin development."[250] The Natural Resource Committee recommended to the Economic and Social Council that it should hold the International Water Conference in order to create awareness concerning the importance of water resources.[251] The UN's convening of conferences and passing resolutions have directly led to the reorganization of policy principles applicable to the legal regimes of watercourses as well as shared resources like waters. These relevant policy principles of various UN conferences and adopted resolutions during the last three decades will be touched upon in the following.

3.3.1. Human Environment

The UN Conference on the Human Environment was held in 1972, in Stockholm, adopting principles of guidance for the preservation of the natural environment and enhancement of the human environment. The 1972 UN Conference Declaration, also known as the Stockholm Declaration, addresses the issues of the human environment and the protection of shared natural resources, including water.[252]

Principle 2 of the 1972 Stockholm Declaration provides that "the natural resources of the earth, including air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate."[253] This recognizes the importance of natural resource use by present and future generations.

According to Principle 8: "Economic and social development is essential for ensuring a favorable living and working environment for man and for creating conditions on earth that are necessary for the improvement of the quality of life."[254] This principle reinforces the notion contained in Article 55 of the UN Charter aiming to improve the quality of human life, the protection of environment being the condition for a better standard of life.

Principle 11 recognizes the developmental need of developing countries, and says that:

> The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries, nor should they hamper the attainment of better living conditions for all, and appropriate steps should be taken by States and international organizations with a view to reaching agreement on

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[250] *Official Records of the Economic and Social Council, Fifty-second Session*, Supplement No.5 E/5097.
[251] Ibid, Fifty-fourth Session, Supp. No.4, E/5247.
[252] *Report of the UN Conference on the Human Environment*, Stockholm, June 5-16, 1972, UNDoc.A/CONF.48/14.
[253] *Declaration of the UN Conference on the Human Environment*, UNDocA/CONF.48/14.
[254] Ibid.

meeting the possible national and international economic consequences resulting from the application of environmental measures.[255]

Principle 21 provides reconciliation between the sovereignty of States and their responsibility for protecting its own or other's environment. This principle may be regarded as an innovation concerning the right to exploit the resources and the protection of the environment, providing that:

> States have, in accordance with the UN Charter and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[256]

Whether a general obligation exists in international law for States to prevent and abate significant environmental damage within the interpretation of Principal 21 may be debatable. However, Principle 21 is incorporated within Article 193 of the UN Convention on the Law of the Sea.[257]

As regards land-based marine pollution, Article 207 of the Convention provides that States should prevent, reduce and control the pollution from land-based pollution sources. International watercourses are one of the sources of land-based marine pollution. The ICJ in its advisory opinion on the *Legality of the Threat or Use of Nuclear Weapons* reiterated the content of Principle 21 in the Stockholm Declaration and confirmed a general obligation of States to protect the environment, providing that "the existence of a general obligation of States to ensure that activities within their jurisdiction or control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment."[258]

Following the 1972 UN Conference on Human Environment, various UN agencies worked for the promotion and enhancement of international watercourse law. The UN Environment Program (UNEP) was established in 1973. That UNEP's activities cover a wide range of issues, including atmosphere and terrestrial ecosystems, the promotion of environmental science and information, an early warning and emergency response capacity to deal with environmental disasters and emergencies. Apart from fresh water management, the current functional programs of the UNEP are: 1) environmental policy development and law; 2) early warning and assessment; 3) environmental policy implementation; 4) technology,

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[255] Ibid.
[256] Ibid.
[257] UNDocA/Conf 62/122, 1982.
[258] *ICJ Reports*, 1996, p.226, para 29.

industry and economics; 5) regional cooperation; 6) environmental conventions; and 7) global environment facility coordination.[259]

The GPP, as they apply to the human environment, especially principles 2, 11 and 21, had an influence on the wide range of issues. For example, in its 1973 study on the legal control of water pollution, the Food and Agricultural Organization (FAO) stressed the need for an integrated approach regarding the interdependence of international and national (comparative) laws, as well as inland water and marine pollution.[260] Based on the International Digest of Health Legislation, the World Health Organization (WHO) in 1973 stated the importance of health legislation and the control of water pollution in international water bodies.[261]

In 1973, the World Meteorological Organization (WMO) stressed the importance of its two important investigations: one, the effect of saline intrusions into the lower riches of rivers as a result of the erection of dams and other watercourse management structures; and second, the thermal pollution of waters due to effluents from energy producing installations.[262]

In 1973, the IAEA referring to the Panel of Experts Report on Disposal of Radioactive Wastes into Rivers, Lakes and Estuaries, "warned of the threat of radioactive wastes into watercourses and the need for prevention and control of such wastes".[263]

Despite the fact that there are several examples of treaties recognizing Principle 21 of the 1972 Stockholm Declaration, it should be noted that the implementation of the principle is constrained by the vast inequalities between States. Most developing States cannot afford to protect environments. On the contrary, their economies are often dependent on the exploitation of natural resources, leading to environmental and social crises. The increasing human population in developing States creates pressure for the exploitation of resources in order to meet their needs, which in turn decreases the quality of the natural environment, ultimately leading to conflicts.

3.3.2. Sovereignty Over Natural Resources

In 1974, the General Assembly adopted the Charter of Economic Rights and Duties of States.[264] In its Article 2(1), the Charter declared that every State has and shall freely exercise full permanent sovereignty including possession, use and disposal, over all its wealth, natural resources and economic activities. This also applies to water resource development. While there remains little doubt that the right of States and people to permanent

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[259] See<http://www.unep.org> (visited Nov.10, 2004).
[260] *YILC*, 1974, Vol.II, Part Two, p. 335.
[261] *International Digest of Health Legislation* 1966 see, *YILC*, 1974, Vol.II, and Part Two, para 359.
[262] *YILC*, 1974, Vol.II, and Part Two, para 360.
[263] Ibid see, *Report of the Panel of Experts* 1969, para 361.
[264] UNGOAR 29th session, Supp. No.31at 50 UNDoc.A/9631, 1974.

sovereignty over natural resources is an established principle of international law, it would seem that a substantial majority of States would go further and assert that it is an imperative norm having the character of *jus conges*.[265]

According to Article 3 of the 1974 Charter, in the exploitation of natural resources shared by two or more countries - including water resources – it is the States' duty to cooperate on the basis of a system of information and prior consultation in order to achieve optimum use of such resources without causing damage to the legitimate interests of others. The 1974 Charter was also designed to reform global inequalities,[266] aimed at reforming international trade, the monetary system, debt relief, and the technological transfers from developed to developing States. Most importantly, it recognized the economic sovereignty of States over their own natural resources.

Article 7 of the 1974 Charter provides that:

> Every State has the primary responsibility to promote the economic, social, and cultural development of its people. To this end, each State has the right and responsibility to chose its means and goals of development, to mobilize fully and use its resources, to implement progressive economic and social reforms and to ensure the full participation of its people in the progress and benefits of development. All States have the duty, individually or collectively, to cooperate in order to eliminate obstacles that hinder such mobilization and use.[267]

Article 7 recognizes a State's right to choose the means and goals of development, and the responsibility to promote economic, social and cultural development of its people. Furthermore, Article 29 foresees the establishment of an international regime and an international treaty of universal character, generally agreed upon, which shall establish appropriate international mechanisms to give effect to its provisions.

In essence, the 1974 Charter subscribes to the principle of the permanent sovereignty of States over their own natural resources, and this also includes economic sovereignty. In addition, it recognizes the duty of States

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[265] UN DocA/38, 265 and E/ 1983/85, June 21,1983.

[266] New International Economic Order, based on 15 principles, is explained and amplified in 29 articles: a) sovereignty, territorial integrity, political independence of states; b) sovereign equality of all states; c) non-aggression; d) non-intervention; e) mutual and equitable benefit; f) peaceful co-existence; g) equal rights of self-determination of peoples; h) peaceful settlement of disputes; i) reminding injustices which have brought about by force and which deprive a nation of the natural means necessary for its normal development; j) fulfillment in good faith of international obligations; k) respect for human rights and fundamental freedoms; l) no attempt to seek hegemony and sphere of influence; m) promotion of international social justice; n) international cooperation for development; and o) free access to and from the sea by land-locked States within the frame work of the above principles.

[267] UNGOAR 29th session, Supp. No.31at 50 UNDoc.A/9631, 1974.

to cooperate on the basis of information and prior consultation in order to achieve optimum use of resources without causing damage to the legitimate interests of others.

The issues covered in the 1974 Charter are extremely relevant to management of watercourses. In the absence of mutual cooperation, information and consultation, the regimes of uses and protection of internationally shared watercourse and management modalities cannot be sustained.

In the wake of the 1974 Charter, several policy principles emerged through the 1977 UN Water Conference, which are the focus of the following section.

3.3.3. Right of Access to Water

The UN Water Conference was held in Mar del Plata in 1977, to create worldwide awareness of the water resource supply/demand picture.[268] The Conference adopted a Resolution and a Plan of Action, calling for an International Drinking Water Supply and Sanitation Decade for 1980-1990, to provide all people of the world with water of safe quality and adequate quantity and basic sanitary facilities by the year 1990, according priority to the poor and less privileged.[269]

The 1977 UN Water Conference explicitly recognized the right of access to water for basic needs: "All peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality to their basic needs."[270] The Resolution that came out of this Conference stressed the need for integrated water resource management.

In consideration of the right of access to water as a basic need and human right, a few other legal instruments adopted prior to the 1977 UN Conference, need to be mentioned.

The right of access to clean water and a safe environment are not explicitly mentioned in the Universal Declaration of Human Rights (1948).[271] However, Article 25 of the Universal Declaration of Human Rights provides, "everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food clothing and housing." The adequate health and *well being* mentioned in this article may, in some interpretations, imply water rights.

Article 6 of the International Covenant of the Civil and Political Rights (1966) states that "every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his

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[268] *Report of the UN Water Conference*, Mar Del Plata, March 14-25, 1977, see *YILC*, 1986, Part I, pp.1,325. There were 116 representatives of States, 17 inter-governmental and 58 non-governmental organizations in the Conference.

[269] Ibid.

[270] *Report of the UN Water Conference*, Mar del Plata, 14-25 March 1977, No.E.77.

[271] UNDoc.A/64. Res.217.

life."[272] Even though the right to water and a decent environment are not explicitly referred to as a part of the right to life, the right to life may imply such an important right.[273]

The International Covenant on Economic, Social and Cultural Rights (1966) recognizes basic human rights, including a right to education, employment, housing, medical care and security in old age, from which the right to food, clean water and safe environment can be derived. Since 138 Member States of the UN have ratified this Covenant, they have a legal obligation to ensure that their citizens enjoy these rights.[274]

The Commission on Human Rights, another UN body dealing with the human right issues, has dealt in recent years with the issues of the right to drinking water as a human right. According to the Commission, despite the recognition of the right of access to water by the 1977 UN Conference, the issue of the right of individuals to drinking water supplies and sanitation services still remains undefined.[275]

Upon the request of the Commission of Human Rights, the Sub-Commission on the Promotion and Protection of Human Rights is doing a further study on these issues, in order to define the right to drinking water and establish its possible relationships to other human rights.[276] Whether an individual should be accorded the right to water or whether it should be known as *access* rather than a *right* is currently a matter of discussion among experts.[277] In either case, it is important nationally to allocate the

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[272] UNDoc.CCPR/C/21/Rev.1.

[273] The Human Rights Committee established under the International Covenant of the Civil and Political Rights has taken a broad interpretation of the right to life.

[274] Gleck, 1999, p.483.

[275] The Commission on Human Rights decision No.108, April 27, 1999, *United Nations Economic and Social Council, Commission on Human Rights, Sub-Commission on the Promotion and Protection of Human Rights Fifty-second session, Item 4 of the provisional agenda, The Realization of Economic, Social and Cultural Rights*, E/CN.4/Sub.2/2000/16 19 July, 2000.

[276] One of the proposals, in that regard, is the Madeira Declaration on the sustainable management of water resources adopted by the European Council on Environmental Law 1999, recognizing the water rights of all. The European Council on Environmental Law Draft 1999 includes water rights with the following principles:

(a) Everyone has the right to water of sufficient quantity and quality for his life and health;

(b) Public authorities should adopt the necessary measures to promote access to water for all and should regulate the actions of various public or private bodies involved in the management of water supplies;

(c) Within each community with responsibility for water supply, service cost should be shared in such a way that every one can benefit from the right to water; and

(d) In the course of their activities, economic actors and individuals should respect the right to water. *The Madeira Declaration on the sustainable management of water resources adopted by the European Council on Environmental Law* on 17 April 1999, /CN.4/Sub.2/2000/16.

[277] Nuel Rodriguez Cuadros, a Sub-Commission expert, argues access to drinking water as a condition for the right to life, food, economic and social rights, as opposed to the right to water as such. Francoise Jane Hampson, another expert of the Sub-Commission shares that opinion. According to Henri Smets (the International Council of Environmental Law), providing water free of charge is needed in some cases, the basic requirement 40 litres per

right/access to individuals and local communities on an international scale to riparian States.

The importance of the 1977 Water Conference is that it provides the basis for the future definition of water access rights in terms of sustainable development and intergenerational rights. Subsequent UN initiatives relevant to the use of natural resources and the protection of the environment further enhanced this concept.

3.3.4. Sustainable Development

Despite the fact that the 1972 UN Conference in Stockholm brought the various principles of the human environment to the forefront of the international forum, the assumed conflict between the environmental protection and development remained unsettled. The UN General assembly established the World Commission on Environment and Development in 1983 in order to try to settle this conflict. The Commission published its Report "Our Common Future" in 1987, also known as the Brundtland Commission Report.

The main concept introduced by this Commission to reconcile the environmental protection and development was sustainable development. It was defined as "development that meets the needs of the present without compromising the ability of the future generation to meet their own needs."[278] In consideration of economic development and protection of the environment, the World Commission Report availed itself the notions of Principles 11 and 23 of the 1972 Stockholm Declaration.

The definition of sustainable development in the 1987 Report include the concept of intergeneration equity, and has undergone further redefinitions to include conservation of planetary resources, ensuring equitable use, avoidance of adverse impacts, prevention of disasters, minimization of damage, emergency assistance and compensation for environmental harm.

For the most part, the above mentioned obligations are mentioned only in the preambles of conventions. This may not be viewed as substantial law, but it still possesses a certain legal authority. Sustainable development requires States initiating or engaging in water resource development to ensure that water projects have enough sustainability to serve livelihoods.[279] Thus, it can be said that sustainable water use is related to sustainable livelihood, a self-evident and inalienable human right, and deprivation from such a right may be linked to deprivation from an individual's human right to life.

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day per person, the right to water is corollary to the right to health, food and housing, in *Sub-Commission on Human Rights, August 8, 2000 Report*, on file with the author.

[278] The World Commission on Environment and Development was established in 1983 by the General Assembly, which is known as the Brundtland Commission, see its Report *Our Common Future*, 1987, p.43.

[279] *EPL* 22/1, 1992, pp.54-55.

In terms of the world's fresh water resources, sustainable use refers to a State's obligation to regulate the uses of scarce water resources as well as to respect the interests of current and future generations of co-riparian States. Although there is abundant fresh water on the earth, the resources are far from infinite and are distributed unevenly. The unsustainable actions that will prejudice future generation's rights with respect to fresh water mentioned in a study of the UN University Project on Global Concern, to include: the contamination of water by toxic chemicals, hazardous waste or salinization; consumption of underground water supplies in excess of natural recharge rates; the mining of the fossils of groundwater aquifers; and the engineering of large-scale diversions of water from rivers or lakes.[280]

In the current world of uneven development and excessive resource use, the developing States, poverty, and dependency have become synonymous with foreign aid and debt crisis. At the same time environmental degradation has become yet again synonymous with the exploitation of natural resources. The widening gap between the developed and developing countries seems to indicate the defeat of the 1970's initiatives, in particular the New International Economic Order. In the 1980's, a further rethinking of the pattern of economic development became inevitable, and sustainable development gained currency.

Among the 1980's development, the 1982 World Charter of Nature need to be mentioned. Principle 23 of the Charter recognizes the need for preservation of a life-sustaining ecosystem and promotion of human rights and duties regarding the environment.[281]

Whether sustainable development will be practically achieved or not remains a question. However, it is noteworthy that the 1987 Report brought the concept of sustainable development to the forefront of international attention, and later the 1992 UN Conference on Environment and Development (Rio), made it a central feature of the modern international environmental law.

3.3.5. Agenda 21, Chapter 18

The 1992 UN Conference on Environment and Development held in Rio (hereafter referred to as "1992 Rio Conference") recognized the need for sustainable use and integrated management of international fresh water.[282] One of the most important documents adopted by this conference, namely Agenda 21, in its Chapter 18, addresses the issues of the quality and the supply of fresh water resources.[283] In a set of principles enshrined in another significant document, the 1992 Rio Declaration outlines the rights

[280] Brown-Weiss, 1989.
[281] World Charter for Nature, 1982, GARes.37/7UNGOR, Supp.No.51.UNDoc.A/37/51.
[282] UNDoc.A/Conf.151/26/Rev.1, *Report of the UNCED,* 1992 (Johnson, 1993, pp.333-359).
[283] Ibid.

and responsibilities of the States with respect to economic development and the protection of the environment.[284]

As to the economic development, the 1992 Rio Declaration outlines, among other things, the need for the elimination of unsustainable patterns of development. For example, Principle 3 provides that, "the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations."[285] In addition, Principle 4 provides that, "in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it."[286] With respect to environmental protection, the 1992 Rio Declaration states that the polluter of the environment should bear the cost of pollution and precaution measures should be taken for the prevention of environmental degradation.

Agenda 21, Chapter 18, recognizes the need for sustainable use and integrated management of international fresh water.[287] Chapter 18 deals with multi-interest utilization of water resources for water supply and sanitation, agriculture, industry, urban development, hydropower generation, inland fisheries, transportation, recreation, low and flat lands management and other activities; freshwater as an essential component of the earth's hydrosphere, which is characterized as the hydrological cycle responsible in balancing of the global climate; and the incompatible activities between the use and the protection of the world's fresh water resulting problems demanding an integrated water resources planning and management covering all types of interrelated freshwater bodies, including both surface water and groundwater, and duly consider water quantity and quality aspects.[288]

Regarding transboundary waters, Agenda 21, Chapter 18, underlines the importance of cooperation among riparian States in conformity with existing agreements and/or other relevant arrangements, taking into account the interests of all riparian States concerned. The cooperation should aim at materializing programs such as:

> a) Integrated water resources development and management; b) Water resources assessment; c) Protection of water resources, water quality and aquatic ecosystems; d) Drinking-water supply and sanitation; e) Water and sustainable urban development; f) Water for sustainable food production and rural development; and g) The impacts of climate change on water resources.[289]

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[284] Ibid.
[285] Ibid.
[286] Ibid.
[287] Ibid.
[288] Agenda 21, Chapter 18.1-3.
[289] Agenda 21, Chapter 18.4.

While freshwater as a finite and vulnerable resource is viewed holistically in Chapter 18, the sector water plans and programs, recommended for implementation within the framework of integrated management of economic and social policy, are of paramount importance for action. The application of integrated approaches to the development, management and use of water resources at national and international levels are recommended in Chapter 18, with the overall objective to satisfy the fresh water needs of all countries for their sustainable development.[290] Chapter 18 also declares that:

> Integrated water resources management is based on the perception of water as an integral part of the ecosystem, a natural resource and a social and economic good, whose quantity and quality determine the nature of its utilization. To this end, water resources have to be protected, taking into account the functioning of aquatic ecosystems and the potentiality of the resource, in order to satisfy and reconcile needs for water in human activities. In developing and using water resources, priority has to be given to the satisfaction of basic needs and the safeguarding of ecosystems. Beyond these requirements, however, water users should be charged appropriately.[291]

Chapter 18, further provides that integrated water resources management, including the integration of land- and water-related aspects, should be carried out at the level of the catchment basin or sub-basin. Four principal objectives to be pursued are as follows:

> a) To promote a dynamic, interactive, iterative and multisectoral approach to water resources management, including the identification and protection of potential sources of freshwater supply, that integrates technological, socio-economic, environmental and human health considerations; b) To plan for the sustainable and rational utilization, protection, conservation and management of water resources based on community needs and priorities within the framework of national economic development policy; c) To design, implement and evaluate projects and programs that are both economically efficient and socially appropriate within clearly defined strategies, based on an approach of full public participation, including that of women, youth, indigenous people, local communities, in water management policy-making and decision-making; d) To identify and strengthen or develop, as required, in particular in developing countries, the appropriate institutional, legal and financial mechanisms to ensure that water policy and its

[290] Agenda 21, Chapter 18.6.
[291] Agenda 21, Chapter 18.8.

> implementation are a catalyst for sustainable social progress and economic growth.[292]

With regard to water for sustainable urban development, Agenda 21, Chapter 18, states:

> Scarcity of freshwater resources and the escalating costs of developing new resources have a considerable impact on national industrial, agricultural and human settlement development and economic growth. Better management of urban water resources, including the elimination of unsustainable consumption patterns, can make a substantial contribution to the alleviation of poverty and improvement of the health and quality of life of the urban and rural poor. A high proportion of large urban agglomerations are located around estuaries and in coastal zones. Such an arrangement leads to pollution from municipal and industrial discharges combined with overexploitation of available water resources and threatens the marine environment and the supply of freshwater resources.[293]

With respect to the water for sustainable food production and rural development, Agenda 21, Chapter 18, taking an integrated policy perspective, states:

> Sustainability of food production increasingly depends on sound and efficient water use and conservation practices consisting primarily of irrigation development and management, including water management with respect to rain-fed areas, livestock water supply, inland fisheries and agro-forestry. Achieving food security is a high priority in many countries, and agriculture must not only provide food for rising populations, but also save water for other uses. The challenge is to develop and apply water-saving technology and management methods and, through capacity building, enable communities to introduce institutions and incentives for the rural population to adopt new approaches, for both rain-fed and irrigated agriculture. The rural population must also have better access to a potable water supply and to sanitation services. It is an immense task but not an impossible one, provided appropriate policies and programs are adopted at all levels - local, national and international. While significant expansion of the area under rain-fed agriculture has been achieved during the past decade, the productivity response and sustainability of irrigation systems have been constrained by problems of water logging and Stalinization. Financial and market constraints are also a common problem. Soil erosion, mismanagement and overexploitation of natural resources and acute

[292] Agenda 21, Chapter 18.9.
[293] Agenda 21, Chapter 18.56.

competition for water have all influenced the extent of poverty, hunger and famine in the developing countries. Soil erosion caused by overgrazing of livestock is also often responsible for the siltation of lakes. Most often, the development of irrigation schemes is supported neither by environmental impact assessments identifying hydrologic consequences within watersheds of inter basin transfers, nor by the assessment of social impacts on peoples in river valleys.[294]

The above mentioned sections of Agenda 21, Chapter 18, relating to transboundary watercourses, inland waters, estuarine zones and coastal areas of seas, underline several significant points: 1) the integrated management of transboundary watercourses needs to be carried out at the catchments basin or sub-basin levels; 2) an integrated management approach to fresh waters (inland or transboundary) needs to be the focus when it comes to sustainable urban/rural development; 3) in terms of food production, attention should be given to rain-fed areas, livestock water supply, inland fisheries and agro-forestry, as well as to water conservation technology and management methods; 4) soil erosion, mismanagement and overexploitation of natural resources and acute competition for water have all contributed to the current levels of poverty, hunger and famine in the developing countries; and 5) pollution from municipal and industrial discharges, combined with overexploitation of available water resources, threatens the marine environment and the supply of freshwater resources.

Agenda 21, Chapter 18, therefore suggests the introduction of appropriate institutions and incentives for rural populations to rectify these problems. The Agenda is to serve as a framework in order to influence the legislative works at local, national and international levels. Chapter 18 of Agenda 21 is the defining instrument in the sustainable development and integrated management of the fresh waters.

3.4. Commission on Sustainable Development

One of the follow-ups of the 1992 Rio Conference is the 1992 General Assembly Resolution 47/191, providing for the establishment of the Commission on Sustainable Development. Based on this resolution, the Economic and Social Council established the Commission.[295] It is an inter-governmental body elected by the Economic and Social Council from amongst the UN Member States and its specialized agencies.[296]

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[294] Agenda 21, Chapter 18.65.

[295] See<http://www.un.org/esa/sustdev/csd.htm>(visited Nov.10.2004).

[296] Composed of 53 members elected for three years, the Commission's members are elected; thirteen from Africa , eleven from Asia, ten from Latin America and the Caribbean, six from Eastern Europe, and thirteen from Western Europe and others. One-third of the members elected annually and outgoing members are eligible for re-election. Other States, UN agencies, accredited inter-governmental and non-governmental organizations can attend sessions as observers.

One of the functions of the Commission is to review progress at the international, regional and national levels in the implementation of Agenda 21, including Chapter 18. The Commission meets annually and reports to the Economic and Social Council, through which the report reaches to the Second Committee of the General Assembly.

The Commission has made an assessment of the fresh water resources of the world from a sustainable development point of view. According to the assessment, "all people require access to adequate amounts of clean water, for basic needs as drinking, sanitation and hygiene, and develop sustainable strategies that address basic human needs, as well as the preservation of ecosystem, and it is essential that planning secure basic human and environmental needs for water."[297]

The Commission on Sustainable Development appointed an Expert Group with the task of identifying the principles of international law related to sustainable development. The Expert Group Report 1995 identified a long list of such principles.[298] The most significant finding in the report is the interrelationship of the concepts and principles related to the environment and development. They include: 1) right to development; 2) right to a healthy environment; 3) eradication of poverty; 4) equity, including equitable use of natural resources and inter-generation equity; 5) sovereignty over natural resources and responsibility not to cause damage to the environment of other States or to areas beyond national jurisdiction; 6) sustainable use of natural resources; 7) prevention of environmental harm; and 8) precautionary principle.

Principles identified relating to international cooperation include: 1) Duty to cooperate in the spirit of global partnership, including; a) common concern of humankind; b) common but differentiated responsibilities; and c) special treatment of developing countries, including small island developing States and countries with economic transition: 2) Common heritage of mankind: 3) Cooperation in trans-boundary context, which includes: a) equitable and reasonable use of transboundary natural resources; b) notification to and consultation with neighboring and potentially affected States; c) environmental impact assessment in transboundary context; and d) prior informed consent as an emerging principle in specific contexts of cooperation to discourage or prevent the relocation and transfer of activities and substances that cause severe environmental degradation or are harmful to human health.

Principles related to participation, decision-making and transparency include: 1) public participation; 2) access to information; and 3) environmental impact assessment and informed decision making. Principles related to dispute avoidance, resolution procedures, monitoring

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[297] *Assessment of the Fresh Water of the World;* Commission on Sustainable Development, Stockholm Environmental Institute, 1997, pp.3, 29, 25.

[298] *Report of the Expert Group Meeting on the Identification of Principles of International Law for Sustainable Development*, Geneva, Switzerland, September 25-28, 1995.

and compliance includes: 1) peaceful settlement of disputes in the field of environment and sustainable development; 2) equal, expanded and effective access to judicial and administrative proceedings; 3) national implementation of international commitments; and 4) monitoring of compliance with international commitments.

The Expert Group Report 1995 clearly includes the right to development and the right to a healthy environment as principles of international law for sustainable development. Apart from this report, some experts have further elaborated the list of principles with respect to sustainable development including integration of environment and development and application of equity between States.[299]

A definition of sustainable use provided for in Article 2 of the 1992 Convention on Biological Diversity, in which sustainable use means "the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations."[300] According to the General Measures for Conservation and Sustainable Use provided by Article 6 of the 1992 Convention of Biological Diversity, each Contracting Party shall, in accordance with its particular conditions and capabilities:

> a) Develop national strategies, plans or programs for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programs which shall reflect, inter alia, the measures set out in this Convention relevant to the Contracting Party concerned; and
> b) Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programs and policies.[301]

This Article basically recognizes the need for the application of sustainable use of biological diversity. Article 2 of the 1992 Convention on Biological Diversity is relevant to Articles 5 and 24 of the 1997 UN Convention, which defines the equitable/sustainable use/development. Article 6 of the 1992 Convention of Biological Diversity is relevant to Article 22 of the 1997 UN Convention concerning the protection of the biological diversity in international watercourses, which requires the watercourse States to take preventive action in case of introduction of species, alien or new.

At the Millennium Summit (2000), Heads of State pledged to stop the unsustainable exploitation of water resources. They also agreed to promote an equitable access and adequate water supplies to the proportion of

[299] *BYIL*, 65, 1994, pp.338 and 379.
[300] See, 31 *ILM*, 1992, p.818.
[301] Ibid.

population lacking safe drinking water and sanitation by the year 2015.[302] World leaders have also agreed to develop an efficient integrated water resources management plans by year 2005.

The UN General Assembly Resolution (A/RES/55/2) on the Millennium Declaration (2000) reaffirmed the need for protection of the environment in line with the notion of Agenda 21. Ideas of Agenda 21 have also found expression in the UN Millennium Development Goals (MDG), especially ensuring the peoples access to water and food.[303] Among others, the two vital MDG are to ensure environmental sustainability and to promote partnership for development.

The World Summit on Sustainable Development was held in 2002, in Johannesburg, South Africa.[304] This Summit (building on earlier works of the UN conferences in Stockholm 1972 and in Rio 1992), for all its limitations, revealed an ongoing concern whose detailed declarations on matters dealing with the environment, famine, the gap between advanced and developing countries, health and human rights, suggest the emergence of a collective theme of community rights.

The table below considers various UN declarations and conferences of general application, starting from the early 1970's through the early 1990's, and treats them as independent variables. The specific Concepts and Approaches (CA), Policy Principles (PP), Implementation Mechanism (IM) and provisions on Dispute Settlement (DS) are treated as dependent variables. This table illustrates the policy principles that developed through the UN system as regards development and environmental protection, and the adoption of an integrated approach.

	CA	GPP	IM	DS
The 1972 Stockholm Conference/Declaration	*gra*	*ie/ bupnr*	*v*	+
The 1974 Charter	*gra*	*co/i/pc*	*nieo*	+
The 1977UN Water Conference	*gra*	*wr/im*	*ap*	+
The 1982 World Charter	*gra*	*ecoa*	*v*	+
The 1987 World Commission Report	*gra*	*ie*	+	+
The 1992 Rio Conference	*gra*	*ppp*	*csd*	+
Agenda 21, Chapter 18	*gra*	*sd/im*	*csd*	+

CA = Concepts and Approaches (*gra = global resource approach; sj = social justice*); GPP = General Policy Principles (*ie = intergenerational equity; bupnr = balanced uses and protection of natural resources; co/i/pc = cooperation, information and prior consultations; wr = water right*; *im = integrated management; v = voluntary; ppp =*

[302] An estimated 1.1 billion people lack access to safe drinking water, and 2.4 billion people are without basic sanitation. See<http://www.un.org/millenniumgoals/index.shtml> (visited Nov.10, 2004).

[303] Ibid.

[304] See< http://www.johannesburgsummit.org/> (visited Nov.19, 2004).

polluter pays principles; sd/im = sustainable development and integrated management; eco = ecological approach; IM = Implementation Mechanisms (*v = voluntary*; *nieo = new international economic order*; *ap = action plan*; *csd = commission of sustainable development*) ; DS = Dispute Settlement venues (+ *adjudication)*

This table illustrates that the Concepts and Approaches (CA) of the UN's General Policy Principles (GPP) adhere to the general resource approach (*gra*), as to natural resource development and protection of environment. This approach takes all natural resources, not only water, into account. The 1972 Stockholm Declaration subscribes to the balanced approach between environmental protection and developmental needs, underlining the intergenerational equity (*ie*) as part of its GPP, but the Implementation Mechanism (IM) is voluntary (*v*).

Similarly, the 1974 Charter takes the general resource approach (*gra*), and it adheres to the GPP of cooperation, information and prior consultations (*co/i/pc*). The 1977 Water Conference recognizes the individual's right of access to water, or water right (*wr)*, for basic needs. The 1977 Water Conference resolution also recognize the need for integrated management (*im*) of water resource development.

The 1982 World Charter for Nature takes an ecological approach (*ecoa*), and compound to all other UN instruments, takes the broadest view, going beyond the relatively narrow focus of the environment.

In line with the notion of the 1972 Stockholm Declaration, the 1987 World Commission Report has defined sustainable development (*sd*) on the basis of intergenerational equity (*ie*), taking into account the balanced uses and protection of natural resources (*bupnr*). Further, the 1992 Rio Conference underpins the issues of protection of environment and need for development, which also takes the global resource approach (*gra*). This Conference also recognizes the polluter pays principle (*ppp*).

All these UN GPP's are indirectly related to the legal regimes of international watercourses. However, Agenda 21, Charter 18, is a directly relevant instrument as it concerns the regimes of uses and protection of international watercourses. Chapter 18, in particular, recommends integrated water resources management, which includes land and its water-related aspects, including water for sustainable urban development, water for sustainable food production and rural development.

All these GPP's, which developed through the UN system, clearly suggest a balance between resource development and environmental protection. The modern management paradigm as applied to global natural resources is represented by the Commission on Sustainable Development (*csd)*, which is also the IM of the GPP's. Finally, as illustrated in the table in the DS column, the + indicates that all means or venues of dispute settlement are available under the UN Charter, whether relating to water or the general environment.

3.5. Appraisal

The UN system has been active since the early 1950's for the development of international law. The ILC can be considered as the major source of development of the law of international law watercourses. It was indeed the ILC's systematic work and reputed drafts that become basis of the 1997 UN Convention. The ILC's work is clearly reflected in the various provisions of the Convention, including the concept of international watercourse, the substantive principles of equitable utilization, the planned implementation mechanism, and dispute settlement through adjudication and arbitration as well as the impartial fact-finding.

Various conferences and resolutions of the UN have proclaimed a number of policy principles taking a global perspective on natural resources and subscribing to the principle of sustainable development. Particularly, Article 21 of the 1972 Stockholm Declaration has spelled out the most fundamental principle with respect to the management of natural resource use and environmental protection. It recognizes the sovereign right for all States to exploit natural resources within their territory. At the same time, it prohibits States from causing damage to the environment of other States. In addition, the declarations of the 1992 Rio Conference and the 2002 Johannesburg Summit reiterate State's right to use/development of natural resources and responsibility to protect the environment. Such a right and duty of States have been recognized in a number of bilateral and multilateral treaties, which in turn not only have harmonized between the uses and protection of global natural resources but also shifted the natural resource management model towards an integrated paradigm.

A series of organizations are established within the UN network as the implementation mechanisms to achieve the objectives of sustainable development. Mention can be made of the UNEP and the Commission on Sustainable Development. As the Commission is an inter-governmental body elected from various continents, it can be further empowered with active responsibilities to implement the principle of sustainable development, recognizing use of the earth's natural resources and protection of its environment as the common interests of the international community as a whole.

Indeed, the UN system has provided for the motivation to translate the widely perceived need for sustainable development into the soft law. It is apparent from the various UN declarations that the sustainable development is not a coincidental occurrence within the law of international watercourses and it has been part of the overall trends in global resource issues.

The UN could activate its good office for the negotiation of agreements between States in line with the notion of the principle of sustainable development. However, there is still lack of a network to supervise the implementation of treaties related to the natural resource use and environmental protection. Thus, it can be suggested that the UN establish a

diplomatic network to influence watercourse States in the ratification and implementation of the 1997 UN Convention and/or any other treaties related to the use and protection of natural resources.

An active international cooperation among States is a vital tool to achieve the objective of the earth's resource management and environmental protection. This requires the mutual confidence between States and a will to compromise, which stems from the perception of common norms governing the civilized behavior of States. This ideally may lead to the negotiation of treaties based on actual needs. Under these conditions, a will to compromise among States would emerge, and the foundation for the rule of law can be established under the UN system. Within this foundation, there can be equality before the law and equal protection of the law in the true sense.

The important principles relating to the natural resources use and environmental protection proclaimed by the declarations of the 1972 Stockholm, the 1992 Rio conferences and the 2002 Johannesburg Summit encompasses the various political, social, economic and scientific dimensions, which are relevant to an integrated approach to water and environment but outside the scope of the present study.

PART III: DEVELOPMENT OF THE LEGAL REGIMES THROUGH TREATIES

In this part, the development of the regimes of uses and environmental protection of international watercourses through the riparian State treaties will be examined.

The treaties selected for this study represent different geographical, legal and political circumstances. Moreover, the selection has been done with due regard to the contribution of various treaties to the development of the legal regimes in general.

CHAPTER 4: TREATIES RELATING TO EUROPEAN RIVERS

4.1. Introduction

As regards European rivers, the point of departure is about 500 years BCE when Greek traders extended their navigational network significantly. They started from the Gaul River and then moved on to the Rhine River, eventually leading to the Atlantic Ocean,[305] navigating on Europe's inland waters to the oceans, mostly in an effort to promote trade and commerce. In succeeding centuries, formal agreements were concluded between city-states regulating the navigational use of the European rivers, e.g. Rhine, Oder and Danube.[306]

The importance of navigational access is readily apparent in Europe, as is evident by the effort undertaken to link the two major river systems through inter-basin water transfers. The Rhine-Main-Danube Canal was opened at the end of the 20th century after decades of work in joining the two canals, providing a trans-European waterway from the North Sea to the Black Sea. This does not mean to suggest that non-navigational uses are less important than navigational uses; it means that the treaties concerning navigational use of European international rivers were concluded much earlier than those concerning non-navigational uses. This may be so because of the hydrological reality that there was enough seasonal rain so that irrigation was less necessary for agriculture needs in Europe. It is only with the advent of the European industrial age that hydroelectricity development, among others, came to the fore and the legal regime of the non-navigational uses of international rivers begins to develop. This development further leads to the evolution of the legal regime of environmental protection.

The first phase of evolution of the legal regimes of the European rivers can be seen to begin with Roman Law, though it did not mean to deal with the concept of international river. Historical records indicate that the Romans had used water to provide energy for various forms of industry, e.g. textiles, paper, iron, gold and beer.[307] Within its borders, the Roman Empire had granted the right of navigational use of rivers to the public, but controlled the commercial aspects of river traffic. Under Roman Law, all water rights were classified and granted in varying degrees to the general public, the State and individual riparian owners.[308]

From the point of view of the evolution of the regimes of international rivers, it is interesting to note that rights of navigation and fishing were given to the general public, whereas the rights to collect fees, to undertake

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[305] Historian notes about Greek and Roman period (Cary M, *The Geographic Background of Greek and Roman History*, 1949, pp.251-252).

[306] The riparian States of the Rhine and Danube rivers initially recognized their commercial important (Day C, *A History of Commerce*, 1957, p.58).

[307] McCaffrey, 2001, p.62.

[308] Kaeckenbeeck, 1918, pp.6-8.

works of canalization, policing and repair were vested in the State. The individual riparian owner had no avenues for remedy or compensation, even in cases of loss or damage resulting from State-sponsored works of canalization. The control of commercial aspects of river traffic was a prerogative of as well as a revenue source for the Roman Empire. Under Roman Law, the individual riparian owner had the right to divert waters for their own use, but it was subject to authorization by the State. The appropriation of abandoned riverbeds and the parceling out of newly formed islands on rivers was within the rights of the riparian owners. However, it was obligatory for the riparian owners to receive authorization for such uses of waters, and it was stipulated that they do so without injury to the rights of third parties. This indicates that Roman Law adopted the river concept (although it did not follow the concept of the drainage basin as a single unit), as it pertains to the regimes of navigational use and non-navigational use. Even though the regime of environmental protection had not evolved in Roman Law in the sense that it is understood today, the legal origins of such responsibility was implied. The fact that the individual right of riparian owners to utilize waterways was not allowed to preclude the interests of third parties, may be interpreted as early evidence of a basis for environmental protection.

The principle *sic utere tuo ut alienum non laedas*, "use your property so as not to harm that of others", is usually attributed to Roman Law. While some experts link its origin to Roman law, others are doubtful.[309] It was, anyhow, the responsibility of the individual riparian owner to refrain from infringement upon third party rights under Roman law. Despite criticism of *sic utere* principle as "mere verbiage,"[310] it has been regarded as the genesis of the modern principle of equitable utilization governing the regimes of multiple uses. The notion of the right of individual riparian owners recognized in Roman Law, also known as the doctrine of riparian right, is widely recognized in the major legal systems developed after the demise of the Roman Empire.

As far as treaty practices are concerned, the modern phase of the evolution of the legal regimes of the European rivers starts with the rise of the European nation-states. Since then, international law has developed with the concept of State sovereignty over its territory as well as territorial boundaries, including rivers and lakes. One of the earliest riparian State treaty of Europe is the 1312 Lake Ladoga Treaty between Sweden and Russia concerning the territorial boundary between the two countries.[311] Another early treaty which relates to a lake as city-state boundary is the

[309] Lammers, 1984, p.570; McCaffrey, 2001, p.136.
[310] Sikri, see *Report of the ILA Forty-Seventh Conference*, Dubrovnik, 1956, pp.x-xi.
[311] Treaty between Sweden (Finland) and Russia (the Principality of Novgorod) concerning the Lake Ladoga, *FAO Index*, pp.1-4.

1554 Lake Constance Treaty between the Bishop of Constance and the representative of Switzerland.[312]

One cannot expect that these classic treaties could have regarded lakes, or any other bodies of water, as more than border markings. The concept of the drainage basin, which was developed in the 20th century, had yet to appear in the regimes. Yet a treaty from the early 17th century shows evidence of an early evolution of regimes, from mere border markings to regulating channels and water flows. This regime is from 1604, when Switzerland and the city-state of Milan signed the Tresa River treaty.[313]

Europe went through thirty years of war before the 1648 Peace of Westphalia Treaty. This treaty dealt with, among other things, the regime of navigational use of international rivers. It provided for freedom of navigation, at the same time as it recognized the sovereignty of States as the basis of international law. The principle of State sovereignty, which was thus born through the peace of Westphalia Treaty, would take various twists, turns and interpretations in connection to legal regimes of international watercourses before it was overshadowed by the principle of equitable utilization, which was generally recognized during the 1990's.

As a foundation for the modern European international system, the 1648 Westphalia Treaty seems more concerned about the freedom of navigation than non-navigational uses.[314] In regard to navigational uses of international rivers, regimes regulating such use developed primarily in Europe, and aimed at promoting transportation, communication, trade and commerce between States. As sovereign entities, the riparian States of the European international rivers perceived the control of the commercial aspects of river traffic as a prerogative, adopting the Roman law principle of riparian rights. In order to collect revenues from the navigational use of the major European rivers, toll stations were installed and operated in the Middle Ages. These kinds of revenues were initially resisted by cities at the time of the Roman Empire, as they were considered an encroachment on the right of navigation. However, this very right was exercised by the cities that became independent States after the fall of the Roman Empire.[315]

A few agreements of the 17th century regulated European rivers, e.g. the Rhine, Oder and Danube rivers. However, it was only in the 18th century that more general treaties were concluded regulating European rivers, setting the stage for the development of the regimes via treaties. During the 17th and 18th centuries, several inter-governmental treaties replaced a number of inter-city agreements. One such early treaty is the 1616 Turkey-

[312] Ibid.
[313] Ibid.
[314] Ibid.
[315] Day (Day C, *A History of Commerce*) 1957, p.58.

Austria Treaty, in particular (Articles 9 and 10) regulating navigation on the Danube River.[316]

Since the 17th century, the riparian State borders have changed more frequently in Europe than in other continents, not only affecting riparian State boundaries but also speeding up the evolution of the regimes of international rivers. As early as 1797, the term *thalweg*[317] was used at the Congress of Rastadt, determining the middle channel of the boundary river as the riparian State boundary, and in the case of navigation on international rivers, the deepest channel serves as the State boundary line. Since then, the *thalweg* has been recognized as a customary rule of international law, unless the State boundary line in international rivers is determined to be otherwise by separate treaty.

Application of the boundary rule in international rivers is as important today as ever; several States emerged in the last decade of the 20th century as a result of dissolution of the Soviet Union and the break-up of Yugoslavia. In the latter case, issues arose anew over the sharing of the Danube River, which crosses or traverses the boundaries of nine European States. The break-up of Czechoslovakia into two independent States, the Czech Republic and Slovakia, is the latest European example of ongoing changes in the riparians' positions, influencing the boundaries and also the rights and obligations. While the political map of Europe has changed due to the disintegration of the Eastern European States, there is also the ongoing integration of the European Union to consider. The riparian States will have to adjust the existing legal arrangements of international rivers to accommodate the changes of the times, including the rights and obligations as to multiple uses of transboundary waters along with their protection.

The starting point for the development of the legal regime of navigational use of European international rivers was the recognition in the 17th century of the principle of freedom of navigation. This development continued in the 18th century. In 1792, the French Executive Council pronounced that impediments to navigation on the Scheldt and Moselle rivers were contrary to the principle of natural law, the navigable river being considered common property to all riparian States.[318] In the following two centuries, the idea that navigable international rivers were to be considered as common property of riparian States developed into a theory of the community of riparians.[319] According to Lammers, "the concept of common use also implies that neither of the two States nor their

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316 Fauchille, (Fauchille P, *Traite de Droit International Public*, 1925, Vol.1, Part II) 1925, referred in Tecllaff, 1991, p.47.

317 The Common Law adopts the centerline of the river channel (*Kent Commentaries*, 1840, Vol.III, Part 6, Sect.52, pp.433,438). The term *Thalweg* was applied in the Brazil-British Guiana Boundary decision; see *BFSP*, 99, p.930. In the *Girsbadarna Case* between Norway and Sweden, the tribunal refused to apply *thalweg* (Scott H, 1916, p.121). The United States' Supreme Court has applied the *thalweg* whenever the problem has arisen.

318 Kaeckenbeeck, 1918, p.32.

319 *River Oder Case* 1929, *PCIJS, A*, 1929, No.23.

inhabitants have an unlimited right to use the waters of the watercourse concerned or to impair the quality of those watercourses."[320]

The 1816 Treaty of Aix-la-Chapelle concluded between France, Germany and Luxemburg, concerning the canalization of the Moselle river, adopted the notion of the "common use" of an international river. This provided that "in absence of stipulations to the contrary, brooks, rivers and streams which constitute the boundary will be common to the both Parties."[321] The legal provision concerning the common use of boundary waters is also found in 19th century treaty practice, e.g. the frontier treaty between Spain and Portugal, which established a regime of common use concerning boundary waters.[322] However, the notion of a river as a boundary between and common property of riparian States, as provided for in the pronouncement of the French Executive Council (1792), relates only to navigational use; it does not give any impression that a similar approach can be applied to either non-navigational uses or the environmental protection of international rivers.[323]

The pronouncement of the French Executive Council influenced the 1804 Convention of Paris whereby France and Germany stipulated that the Rhine River should always be considered common and its navigation should be regulated by agreement between the parties.[324]

The first step towards the admission of *free traffic* on a navigable river was taken at the 1804 Congress of Rastadt,[325] which abolished the various tolls on the Rhine River. This marks a milestone in the development of the legal regime of navigational use of European international rivers. A second example in admitting free traffic is the 1812 Treaty of Bucharest,[326] signed by Russia and Turkey, which dealt with navigation in the lower part of the Danube River. As mentioned earlier, under Roman Law, the commercial aspects of river traffic were a prerogative as well as a source of revenue for the riparian States.

The above mentioned treaties provide the historical origins of the development of modern regimes. Even though these treaties are too early in the history of water management to contain elements of an integrated approach, one can generally find the following basic elements for such an approach: the river is the concept; freedom of navigation is the principle of

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[320] Lammers, 1984, p.93.

[321] The Treaty of Aix-la-Chapelle 1816 see, *ST/LEG/SER.B/12*, Legislative series Treaty No. 203 Frontier Treaty of 1816 see, *ST/LEG/SER.B/12*, Legislative series Treaty No.204.

[322] *ST/LEG/SER.B/12*, Legislative series Treaty No.241.

[323] Some thought provoking legal views in recent times are raising the interest of the international community regarding sustainable development of national or international watercourses in the same fashion as it is in the interests of the international community to protect human rights. A theory of international community of interests concerning the use of the earth's fresh waters including national or international watercourses remains underdeveloped to date, see Boyel, 1997, pp.13-20.

[324] Article 2 of the 1804 Convention on the Rhine, see *MRT*, 2nd ed., p.261.

[325] Colombos, 1967, p.237.

[326] Ibid, p.244.

use; sovereignty is the basis of the rights and duties of riparian States; and, negotiation of treaties are the integral to the resolution of disputes as well as management.

In order to highlight the importance of free traffic concerning navigational use of international rivers, it is necessary to see the relationships between free traffic, the concept of international rivers, and freedom of navigation. The relationships between these three issues and interrelationships between the independent and dependent variables will be explored here in connection with the two main rivers of Europe, the Rhine and Danube.

4.2. Rhine River

The Rhine is one of the important European rivers, constituting not only a significant waterway connecting Europe's inland rivers to the sea (at Rotterdam in the Netherlands), but it is also a key source of prosperity in the region. France, Germany, the Netherlands and Switzerland share the Rhine River. After the completion of the Rhine-Main-Danube Canal in the 1990's, providing a trans-European waterway from the North Sea to the Black Sea, the basin States of the respective rivers became uniquely interrelated, sharing the two river basins which had, in effect, become a single entity. After exploring the evolution of the legal regime of the Rhine River, we shall focus on the legal regimes of the Danube.

Freedom of navigation on the Rhine was declared for all States by the 1814 Peace Treaty of Paris, which declared free navigation on the Rhine to and from the sea, albeit with some stipulations.[327] The Treaty of Paris left the question of free navigation as a matter for further examination and definition, and was left short of achieving the actual legal arrangement. One year later, the 1815 Final Act of the Congress of Vienna, providing a legal concept of international rivers and defining the freedom of navigation, addressed this. Article 108 of the 1815 Final Act of the Congress of Vienna provides that:

> The Powers whose States are separated or crossed by the same navigable river engage to regulate, by common consent, all that regards its navigation. For this purpose they will name Commissioners, who shall assemble, at least, six months after the termination of the Congress, and who shall adopt, as the basis of proceedings, the principles established by the following articles.[328]

This Article recognizes navigable rivers as boundaries of riparian States. Article 108 provides the foundation of the regime of navigational use of international rivers, being the first treaty of its kind recognizing the legal concept of "international rivers." This does not suggest that the concept did

[327] Definitive Treaty of Peace, May 30, 1814 see, 1 *MNRGT*, 63.
[328] See, 2 *BFSP*, 52.

not exist prior to the 1815 Final Act of the Congress of Vienna. In fact, the concept developed concurrently with the development of international law itself, but Article 108 reinforced the customary legal concepts of international rivers in respect to separating or traversing two or more States. Article 108 provides a legal definition for "international river" in the framework of a generally applicable treaty relating to navigational use.

Despite the narrow focus of the concept of international rivers in a geographical scope, neglecting a broader concept of drainage basin as a single unit, the legal concept is also used by the riparian States for non-navigational uses, and in some cases, it is used for the regime of environmental protection. Article 108 implies that the mutual consent of the riparian States is essential, suggesting particularly that the regime of navigational use is a matter of regulation of mutual consent of riparian States. The regime has to be regulated by the principles established by the 1815 Final Act of the Congress of Vienna; Article 109 provides that:

> The navigation of the rivers referred to in the preceding article, along their whole course, from the point where each of them becomes navigable, to its mouth, shall be entirely free, and shall not, as far as commerce is concerned, be prohibited to anyone, due regard, however, being had to the regulation to be established with respect to its policing; which regulation shall be alike for all and as favorable as possible to the commerce of all nations.[329]

Consistent with the notions contained in the above article, Prussia and Saxony agreed to apply freedom of navigation in 1821 concerning the Elbe River, with certain restrictions.[330] A practical test of Article 109 arose in 1827 as to the freedom of navigation on parts of navigable international rivers. In 1827, Prussia, Austria and Russia demanded the freedom of navigation on the Rhine River, but the Netherlands raised difficulties in regard to defining the branches constituting parts of the Rhine, thereby excluding freedom of navigation on the branches of the Rhine that constituted arms of the sea on its territory.[331] On the Scheldt River, Belgium and the Netherlands agreed to joint supervision of the enforcement of the principles agreed to under the 1839 Treaty of London,[332] though earlier the Netherlands had objected to the application of similar principles contained in the 1815 Final Act of the Congress of Vienna.[333] According to the Netherlands, the freedom of navigation mentioned in Article 109 of the 1815 Final Act did not include the Rhine River to and from the sea, but

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[329] Ibid.
[330] Ibid.
[331] See, 59*BFSP*, 470. The Convention of Mannheim 1868 established the Commission to regulate the Rhine and fixed the competent jurisdiction to decide disputes without appeal.
[332] The Treaty of London April 19, 1839 see, Colombos, 1967, p.242.
[333] Article 15 of the 1856 Treaty of Paris see, ibid.

Prussia, Austria and Russia insisted that it was applicable to the Rhine River. This controversy persisted until the 1831 Convention of Mayence (hereinafter referred to as the "1831 Convention"), accepting the main stream of the Rhine and the Waal branch as the continuation of the Rhine River in the Netherlands.[334] The 1831 Convention provided for the freedom of navigation, but only to the riparian States, by reiterating Article 109 of the 1815 Final Act.[335] In accordance with Article 116 of the 1815 Final Act, the 1831 Convention established the Central Commission of the Rhine for Navigation, consisting of representatives of each riparian State.[336]

Initially, the Commission was authorized to regulate river traffic, but in due course of time it gained extraordinary powers, including the authority to formulate mandatory regulations for navigation and the enforcement of its decisions through a special Rhine Navigation Tribunal. The national courts of the riparian States retained jurisdiction in criminal matters to adjudicate contraventions of the regulations relating to navigation.[337] The Rhine Tribunal has the right to hear appeals against judgments of the national courts and has exerted its power in many cases, both the criminal and civil cases.[338] The Rhine Tribunal has created a uniform interpretation of law governing navigation throughout the riparian States. There is also a separate Chamber of Appeal for the judicial functions within the commission.[339]

Along with the development of the Rhine regime, a simultaneous development of legal regimes of other European international rivers occurred, beginning with the 1866 Peace of Vienna. For example, freedom of navigation was maintained on the Po River to the Adriatic Sea since 1866 through the application of Article 96 of the 1815 Final Act of the Congress of Vienna. The 1868 Convention of Mannheim replaced some of the regulations established by the 1831 Convention of Mayence, to remove the ambiguity arising from the clause stating that all ships of all nations could transport goods and passengers. Nevertheless, technically the freedom of navigation continued to be limited to the riparian States, i.e. the right to navigate a sailing vessel or steamer was limited to persons who could prove that they had actually navigated the Rhine for a given period of time, and had been issued a license by one of the governments of the riparian States.[340]

Alongside the evolution of the regime of navigational use of European international rivers, the development of legal aspects of the other regimes is relevant to note at this stage, as treaties were being concluded in the late

[334] Ibid, p.237.
[335] Article 39.
[336] Ibid.
[337] Schermers, 1980, p.336.
[338] Ibid, p.336.
[339] Ibid, p.336.
[340] Articles 1, 15, and 22.

19th century that included prohibitions on pollutants. In 1880, France and Switzerland signed a convention establishing a uniform regulation that restricted factory pollution in order to protect fisheries in the boundary waters.[341] In 1892, Germany and Luxemburg concluded a fisheries convention requiring the parties to protect the frontier sections of the Moselle, Our and Sauer rivers against pollution. This may be considered one of the first conventions of its kind concerning the protection of fish against pollution. According to critics, however, "this convention had had very little effect in that respect."[342] Nonetheless, it may be considered a precursor of future practices of riparian States as to environmental protection. However, it is true that few serious measures were taken under this convention with respect to the environmental protection of international rivers.

In the second half of the 19th century, multilateral conventions containing specific provisions of fishing were adopted in Europe. For example, the 1857 Convention between Austria-Hungary, Baden, Bavaria, Liechtenstein, Switzerland and Wuttemberg laid down uniform rules concerning fishing in Lake Constance.[343] In 1869, Baden (Germany) and Switzerland signed the Convention Establishing Uniform Regulations concerning fishing in the Rhine.[344] The 1892 Convention between Germany and Luxemburg concerning the Regulations of Fishing in the Boundary Waters is important from the point of view of the regime of uses and environmental protection, prohibiting in principle any new or substantial pollution.[345] The 1885 Convention between Switzerland, Germany and the Netherlands regulated salmon fishing in the Rhine.[346]

As to the non-navigational uses of international rivers, the 1892 Convention between Germany and Luxemburg provides that polluting substances injurious to fish may be permitted by agreement between the two States only in the case of agricultural or industrial activity of exceptional importance. One shortcoming of the 1892 Convention was that by referring to "new" sources of pollution, it made possible that the discharge of substances injurious to fish be permitted by agreement between the two States in the case of an agricultural or industrial activity of exceptional importance.[347] This provision seems to prioritize irrigation and industrial use of water over the protection from pollution. Nonetheless, the priority is given only to agricultural and industrial activities of exceptional importance.

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[341] *Parry's Treaty Series* 90, p.295.
[342] Lammers, 1984, p.169.
[343] *ST/LEG/SER.B/12,* Legislative series Treaty No.114.
[344] *MNRGT*, 20, p.166.
[345] *ST/LEG/SER.B/12*, Legislative series Treaty No.200.
[346] *ST/LEG/SER.B/12*, Legislative series Treaty No.112.
[347] Lammers, 1984, p.117.

Despite the flaws of the provision, the 1892 Convention took into account the protection of water from pollution aiming at the protection of fish stocks. In other words, it recognizes that fishing was affected by the pollution of international rivers in the late 19th century.

The legal measures provided for in the European riparian State treaties of that time indicate shift of focus from the watercourse uses towards protection; from the riparian State's fishing rights to their corresponding obligation to protect fish stocks. This shift also indicates the beginning of concern for protection of the environment, though it merely prohibits only new pollution, and fails to address the existing pollution.

The Rhine regime of navigational use changed after World War I, although the 1919 Treaty of Versailles reiterated the regime established by the 1868 Convention of Mannheim. One of the extraordinary measures provided by the 1919 Treaty of Versailles is the admission of non-riparian representatives including Great Britain, Italy and Belgium to the Rhine Central Commission.[348] This was an extraordinary step in the evolution of the regime of navigational use of international rivers, not only because regulations of international waterways are a strategic position commercially, but also because of the implications for the vested interests and the sovereignty of the riparian States.[349]

The 1919 Treaty of Versailles recognized the freedom of navigation in the Rhine River to all flag States, including the non-riparian States. This development indicates that the commercial interests of riparian and non-riparian States are shared, and because of mutual needs the sovereignty of the riparian State was taken in relative terms. However, this raises a question concerning the other regimes of international rivers: whether riparian States should also take into consideration the needs and interests of non-riparian States regarding the regime of non-navigational uses, in particular the legal regime of environmental protection.

The 1919 Treaty of Versailles was renounced by Germany in 1936, suspending the function of the Central Commission for Navigation on the Rhine. It was reinstated in 1945 after the Allied victory. Since then, the Central Commission of the Rhine for Navigation has consisted both of riparian and non-riparian States. The Commission, along with other developments discussed below, has enhanced the other regimes of the river. In the 1946 session of the Central Commission for Navigation on the Rhine, the question of pollution of the Rhine was raised.

In 1948, the international conference concerning salmon fishing in the Rhine also discussed the problem of pollution and took a decision for the

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[348] Treaty of Peace June 28, 1919, Articles 354, 225; *Parry's Treaty Series,* 189, pp.361-362.

[349] McLaughlin, 1984, p.267. Indeed, the preparatory discussions of the 1815 Final Act of the Congress of Vienna reveal that the freedom of navigation was a subject of debate between proponents and opponents of riparian control. Prussia (mainly) and Russia asserting riparian control, versus the proponents of the freedom of navigation for *all flag States*, led by England see, Kaeckenbeeck, 1918, pp.40-48.

establishment of an international commission for the protection of the Rhine. The Federal Republic of Germany, France, Luxemburg, the Netherlands and Switzerland in 1959 formally recognized the International Commission for the Protection of the Rhine against Pollution.[350] The Rhine Commission for Protection prepared a draft convention for the protection of the Rhine.[351]

The study of the legal regimes of the Rhine River up to the 1950's shows that the navigational use was prioritized to the non-navigational uses. Principles and rules in the non-navigational use allocation were lacking and everything was solely based on mutual agreement among the parties. The regime of environmental protection was not taken seriously into consideration despite the pollution of European international rivers. The legal argument at that time was that riparian States were free to develop their international rivers according to their needs. However, the mutual consent of riparian States was necessary for navigational use of international rivers. Despite several agreements for navigational use of international rivers, the general principle of law concerning multiple uses and the protection of rivers had not yet developed through the conclusion of treaties. Except for the boundary rule of *thalweg*, no customary rule had emerged. The legal arrangements of international rivers at that time lacked a harmonized legal approach between the uses and protection of international rivers, taking water resources for granted.

The following table illustrates the constituent elements of the legal regimes of the Rhine River, as it developed from 1815 to the 1950's. This table is based on consideration that the conventions in the table represent the independent variables, and the various constituent elements of the regimes, grouped into Concepts and Approaches (CA), Substantive Principle (SP), Implementation Mechanisms (IM) and Dispute Settlement (DS), are regarded as the dependent variables.

	CA	SP	IM	DS
The 1815 Final Act	*ir*	*fn*	*rc*	*mc*
The 1831 Convention	*ir*	*fn*	*rc*	*rt*
The 1857 Convention	*ir*	*fn*	*rc*	*ad*
The 1868 Convention	*ir*	*fn*	*rc*	*mc*
The 1869 Convention	*ir*	*fn*	*jc*	*mc*
The 1880 Convention	*ir*	*rpf*	*jc*	*ad*
The 1882 Convention	*ir*	*pap*	*jc*	*ad*
The 1919 Treaty of Versailles	*ir*	*fn*	*rc*	*mc*
The 1959 Rhine Commission	*ir*	*pap*	*rc*	*ad*

[350] *Feuill Federale de la Confederation Sussie II,* 1963, pp.1498-1499.
[351] The Convention was signed in 1963 see more in detail below 4.5.

CA = Concepts and Approaches (*ir = international river*); SP = Substantive Principles (*fn = freedom of navigation*; *rpf = restriction of pollution from factories; pap = protection against pollution);* IM = Implementation Mechanisms (*rc = river commission*; *jc = joint commission*); DS = Dispute Settlement venues (*mc = mixed courts*; *rt = Rhine tribunal*; *ad = adjudication*)

In this table, the international river (*ir)*, freedom of navigation *(fn)*, river commission (*rc)*, mixed court (*mc)* and the Rhine tribunal (*rt)* signify the CA, SP, IM and DS in the respective conventions concerning the Rhine River. The independent and dependent variables of the table constitute the regime of navigational use of the Rhine River, but do not indicate non-navigational uses. A noteworthy element in the Rhine regime is the protection against pollution (*pap*) including the restriction of pollution from factories *(rpf)*, which is one of the principles related to the regimes of non-navigational uses and environmental protection. The IM of the Rhine regime is the Rhine Commission (*rc*) and the DS venue is provided by the mixed court (*mc*).

4.3. Danube River

From its origin in the Black Forest up to the place where it merges into the Black Sea, the Danube runs through the territory of nine European States: Germany, Austria, Slovakia, Hungary, Serbia, Croatia, Romania, Ukraine and Moldavia. It is one of the most important rivers of Europe not only to these States, but also to Switzerland, Italy, Poland and Albania (among others), who are affected by the drainage basin as well.

The Habsburg Empire dominated the Danube River, at least in its major section, for centuries. The Danube was not on the agenda for the deliberations in the 1815 Congress of Vienna because of the complexities of the law and the politics of the Danube.[352] With the changing European political map, the legal regime of Danube began to change. Russia became a riparian of the Danube River, acquiring the Kilia branch of the Danube from Turkey. With the 1829 Treaty of Adrianople, Russia also obtained a monopoly for navigation in the Suline mouth of the Danube. It was only after the 1840 Treaty between Austria and Russia concerning the Danube River that Article 109 of the Final Act of the Congress of Vienna was applied to the Danube in respect to the freedom of navigation.[353] In principle, this terminated Russia's monopoly as provided by the 1829 Treaty of Adrianople.[354] However, for strategic reasons Russia continued to obstruct the freedom of navigation of others on the lower Danube until its defeat in the Crimean war in 1856 whereby Turkey reacquired control over the Kilia.

[352] For the detailed discussion on the law and politics of the Danube and the strategic interests of the riparian and non-riparian States see, Gorve, 1964.
[353] Article 1 see, *Parry's Treaty Series,* 90, p.297.
[354] *PCIJS, B,* No.23, 1927, p.59.

At the 1856 Congress of Paris, convened for the purpose of concluding a peace treaty between Russia and Ottoman Empire (and its allies), the participant States' opinions were divided. While Prussia and Austria narrowly interpreted the freedom of navigation provided for in Article 109 of the 1815 Final Act of the Congress of Vienna, limiting it to the riparian States, England and France insisted on a broader interpretation applying to the flags of all States.[355] Thus, the ambiguity relating to Article 109 remained.

The 1856 Treaty of Paris re-examined the regime of the Danube, and established the European Danube Commission.[356] The 1856 Treaty of Paris also declared the 1815 Final Act of the Congress of Vienna as a part of the public law of Europe.[357] In addition, it established a permanent Riparian Commission responsible for preparing regulations for the navigational use of the whole course of the Danube River, including a temporary one known as the European Commission. This consisted of the majority of non-riparian States, responsible for clearing the delta channels of the lower Danube, i.e. from Galaza to the Black Sea, which had been neglected by Russia. In this instance, the involvement of the non-riparian States was temporary, because after the dissolution of the European Commission, the Riparian Commission was responsible for navigation on the delta and adjoining parts of the Black Sea. Still, the Commission of the Danube continued to admit non-riparian States. In 1857, the Riparian Commission produced regulations conceding the freedom of navigation for ships sailing to and from the high seas, while reserving the full freedom of navigation for riparian States. The proposed regulations were already applied by the upper riparian States, i.e. Austria-Hungary, Bavaria and Wuttemberg, to their section of the Danube. Therefore, the non-riparian States rejected the 1857 regulations proposed by the Riparian Commission. At the same time, the European Commission (by 1865) was transformed into an independent international organization, extending its mandate to the preparation of the regulations concerning the lower Danube regarding navigation, authority over necessary works, and legislative, executive, administrative and judicial powers.[358]

The sanctity of the 1856 Peace Treaty of Paris remained intact and the Danube regime continued to function, developing even further with the 1871 London Treaty between the Great European powers.[359] However, the politics of the Danube changed dramatically after the Russia's victory over Ottoman Empire, which led to the 1878 Treaty of San Stefano, in which

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[355] Kaeckenbeeck, 1918, pp.208-210.

[356] A similar Commission was set up for the river Elbe by the 1922 Treaty of Dresden, see 26 *LNTS*, 219.

[357] Kaeckenbeeck, 1918, pp.208-210.

[358] Articles 1-7 of Protocol of the European Commission see, *Parry's Treaty Series* 339.

[359] Treaty regarding navigation of the Black Sea and Danube see, *Parry's Treaty Series* 99, pp.102-103.

Russia returned to the delta by way of concessions of Romanian territory. The European powers of the time persuaded Russia to sign the 1878 Treaty of Berlin,[360] which reaffirmed the legal position of the European Commission in the lower Danube, i.e. from Galaza to the Black Sea, also extending from Galaza upstream to the Iron Gates.

The European Commission revised the regulations of the Danube in 1881, exercising its complete independence from the territorial authorities, and then in 1882 authorizing the creation of a separate Mixed Commission for the section from the Iron Gates to Galaza on the lower Danube. To assure proper internationalization of the Danube River, the Mixed Commission was composed of Austria along with Romania, Serbia and Bulgaria. However, controversies arose, i.e. Romania refused to participate in the Mixed Commission complaining of encroachment of the authority of the European Commission because Russia had limited the power of the Commission over the Kilia branch of the Danube River in Romanian territory. The legal measures adopted by the above-mentioned treaties reflect not only the interests of the riparian States of the Danube River but also the non-riparian States concerning navigational use, which appears to have been influenced by strategic military interests, particularly freedom of navigation on navigable portions of international rivers.

The political map of the riparians of the Danube River changed before the end of World War I. Romania and Ukraine allied themselves with the Central Powers and the whole of the Danube came under the control of Germany and Austria. As a result, the 1918 Peace Treaty of Bucharest instituted a Commission of the Danube Delta, i.e. the maritime Danube from Braila, and upstream Galaza to the Black Sea, composed of the riparian and the coastal States of the Black Sea, replacing the European Commission.[361] As Romania was under occupation, the freedom of navigation on the maritime Danube was applied to the parties of the 1918 Peace Treaties of Bucharest, meaning freedom of navigation for the States of the region instead of freedom for all flags. The application of the 1918 Peace Treaties of Bucharest fell by the way side with defeat of the Central Powers. Together with the 1919 Treaties of Versailles and St.Germain-en-Laye, this internationalized the Danube River.[362]

An effort was made to establish equal access to the important European international rivers by a Statute on the Regime of Navigable Waterways of International Concern, which was an annex to the 1921 Barcelona Convention drafted by the League of Nations, declaring navigation open to all on an equal basis in waterways navigable to and from the sea.[363] Even though ratifications were limited to the said Convention, it is remarkable

[360] Treaty of Berlin, 2 *MNRGT*, 449.
[361] Peace Treaty of Bucharest, see 3 *MNRGT*, 856.
[362] Treaty of Versailles, *ST/LEG/SER.B/12,* Legislative series Treaty No.115
[363] See, 7 *LNTS*, 35.

that the 1921 Paris Convention established a regime for the Danube,[364] proclaiming freedom of all flags on the mainstream, reserving only the tributaries to the riparian, and retaining the administrative division between maritime and fluvial navigation. The regime relating to the maritime part of the Danube, from Braila to the Black Sea, was under the jurisdiction of the European Commission, the fluvial Danube, down to Braila, was held under the jurisdiction of an international commission composed of riparian and non-riparian States. In 1927, the Permanent Court of International Justice, in an advisory opinion, reaffirmed the powers of the Commission over the section of the Danube from Galaza to Braila.[365]

A few of the riparian State treaties of Europe signed in the first half of the 20th century contained general provisions concerning the regime of the waters of international rivers, e.g. the 1919 Treaty of St.-Germain-en-Laye with Austria,[366] and the 1923 Treaty of Lausanne with Turkey.[367] However, most of the treaties signed in the first half of the 20th century included provisions regulating navigational use. For example, the 1921 definitive Statute of the Danube, signed by the Twelve States, declared the Danube River open to ships of all flags, on the basis of complete equality.[368] Following the 1921 Barcelona Convention, the 1922 Statute of Navigation was promulgated for navigation, implying a freedom of navigation and an equality of treatment in line with the regimes of the Danube, Rhine and Elbe rivers. As to the regime of the Danube, Germany proposed replacing the regime established by the 1919 Treaty of Versailles with bilateral agreements between the riparians. In 1936, with World War II looming on the horizon, Germany renounced the regime established by the 1919 Treaty of Versailles concerning the Rhine and Danube rivers which were of vital strategic interest to Germany. By 1938, Germany was navigating freely from the Elbe towards the mouth of the Rhine River.

The riparian positions of the Danube changed with the occupation of Austria and Czechoslovakia by Germany, which led to the opposition of France and Great Britain against Germany on matters before the European Commission. Without the consent of these members, Germany dissolved the Commission and replaced it with an advisory committee limited to riparians, including its ally Italy. The Soviet Union was also included in that advisory committee, once again being the riparian of the Danube after forcing Romania to cede Besarabia. Until the 1941 German invasion of the Soviet Union, both countries were dragged into negotiations for the establishment of a greater regime of the Danube. At the same time,

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[364] The 1921 Statute see, 26 *LNTS*, 219.
[365] *European Commission of the Danube Case, PCIJS, B,* 1927, No.14.
[366] *ST/LEG/SER.B/12*, Legislative series Treaty No.116.
[367] Ibid, *Legislative series Treaty* No.119.
[368] Opinion of the PCIJ regarding *the Jurisdiction of the European Commission of the Danube between Galaza and Braila*, see *PCIJS, B,* No.14.

Romania, Great Britain and France reached an agreement in 1938, reducing the status of the European Commission to a consultative one, without mentioning the freedom of navigation, ceding the right of control to Romania in the Galaza-Braila section of the Danube.[369] The 1947 Treaty of Peace between Romania, Bulgaria and Hungary repeated that the Danube River was to be open to all nations on a basis of equality. It is noteworthy that until 1948, the United Kingdom, France and the United States were represented in the Danube Commission. The treaties signed in the 1940's included provisions regulating use allocation and water supplies but no general regime emerged as to the waters of international rivers in this period.[370]

The first meeting of the International Commission for the Control of the Rhine was held in 1945 with the participation of the United States. In 1948, a conference took place in Belgrade to draft a new convention for navigation on the Danube, attended by the United States, Great Britain, France, Russia, Bulgaria, Czechoslovakia, Hungary, Romania, the Ukraine, Yugoslavia and Austria. The majority of States attending the conference accepted the draft on the Danube Convention proposed by the Soviet Union. However, the United States, Great Britain and France refused to take part in the drafting, and Italy, Greece and Belgium were absent. Since the acceptance of the 1948 Danube Convention, the control of navigation on the Danube is under the control only of the riparians.[371]

Non-participation of the Western Bloc States in the 1948 Belgrade Conference provided for the Soviet Union an opportunity to fully influence the content of the 1948 Danube Convention. However, Article 3 of the 1948 Belgrade Convention requires the riparian States of the Danube to refrain from hindering navigation. Nonetheless, under its Article 8, the riparian States could ask the Danube Commission to decide whether or not navigation was hindered by a particular project, i.e. non-navigational uses. Under Article 15 of the 1948 Belgrade Convention, the Commission had power to rule on pollution caused by navigation, i.e. discharge into the waters from ships. The riparian States had an obligation to notify each other as provided for in Article 17 of the Convention.

Over a decade after the conclusion of the 1948 Danube Convention, the Federal Republic of Germany and Austria participated in the Commission established by the 1948 Belgrade Convention. The new Commission remained a shadow of the old Commission, a coordinating center rather than an autonomous institution. The real power was vested with the riparians. Under the 1948 Convention, in principle, freedom of navigation was granted to nationals, merchants, vessels and merchandise of all States.

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[369] Agreement of Sinaia (1938) between United Kingdom, France and Romania, 196 *LNTS*, 113.

[370] The Treaty of Peace with Italy, February 10, 1947 regarding French-Italian and Italian-Yugoslav border see, 49 *UNTS*, 126.

[371] Kunz, 1949, pp.104-113.

However, it excluded navigation on the tributaries which encompasses freedom for all flags and omitted equality of treatment, and the right of access to river ports depended upon agreements with the relevant agencies of the riparian States. Since 1948, several bilateral and multilateral treaties have been signed by the riparian States of the Danube to develop the European waterways and join the Rhine-Main-Danube system. The relevant conventions and constituent elements of the legal regimes of the Danube, as it developed from 1840 to the 1950's, can be illustrated as follows.

	CA	SP	IM	DS
The 1840 Treaty	*ir*	*fn*	*rc*	*ad*
The 1856 Treaty	*ir*	*fn*	*rc*	*ad*
The 1857 Regulations	*ir*	*fn*	*rc*	*ad*
The 1878 Treaty of Berlin	*ir*	*fn*	*ecd*	*ad*
The 1881/82 Regulations	*ir*	*fn*	*mic*	*ad*
The 1918 Peace Treaty	*ir*	*fn*	*cdd*	*ad*
The 1919 Treaty of Versailles	*ir*	*fn*	*rc*	*ad*
The 1921 Paris Convention	*ir*	*fn*	*rc*	*ad*
The 1922 Statute of Navigation	*ir*	*fn*	*rc*	*ad*
The 1938 Agreement	*ir*	*fn*	*ecd*	*ad*
The 1947 Treaty	*ir*	*fn*	*rc*	*ad*
The 1948 Danube Convention	*ir*	*fn*	*ecd/mic/cdd*	*ad*

CA = Concepts and Approaches (*ir* = *international river*); SP = Substantive Principles (*fn* = *freedom of navigation*); IM = Implementation Mechanisms (*rc* = *river commission*; *ecd* = *European Commission in the lower Danube*; *mic* = *mixed commission*; *cdd* = *commission of the Danube delta*); DS = Dispute Settlement venues (*ad* = *adjudication)*

This table signifies the elements of the legal regime of navigational use of the Danube River, adopting international river (*ir)*, freedom of navigation (*fn)*, river commission (*rc)* and adjudication (*ad)* as the Concepts and Approaches (CA), Substantive Principle (SP), Implementation Mechanisms (IM) and Dispute Settlement (DS) procedures respectively. This also shows that up until the first half of the 20th century the legal regimes of the Danube was based on a piecemeal management approach despite the fact that the riparian States of the Danube established a variety of institutions, e.g. the Mixed Commission (*mic*) the European Commission in the lower Danube (*ecd)*, and the Commission of the Danube Delta (*cdd)*. These commissions remained to be unconnected institutions lacking integrated approach.

4.4. Treaties of the first half of the 20th century

The focus of this section is on treaties starting from the 1920's to the mid-20th century concerning the other international rivers of Europe. Along with the development of legal regimes of the Rhine and Danube, there was a simultaneous development of the regimes of the other Western European international rivers. Especially, the 1920's was marked by a progression of the regime of non-navigational uses of international watercourses in Western and Northern Europe.

An important trend in riparian State practice that emerged concerning the regime of non-navigational uses in the 1920's seems to be the use of the term "watercourse" in the riparian States treaties.[372] The term "watercourse" used in the 1922 Agreement between Denmark and Germany relates to *watercourses* together with a final Protocol and instructions for the Frontier Water Commission.[373] Another agreement in the same year, i.e. the 1922 Agreement between Demark and Germany regarding Fisheries and Reed Cutting in the Rudeböl Lake and the Vidaa River provided for the term "river" instead of "watercourse."[374] This selective use of the concept is used for fisheries. At around the same period, the concept of "watercourse" was adopted and enhanced by the 1929 Convention between Norway and Sweden concerning the other uses.[375] Both countries later even promulgated the Watercourse Act[376] in their domestic laws relating to the 1929 Convention, adopting the concept of watercourse.

Treaties from the beginning of the 20th century recognized the mutual consent of States as a general principle of international law in the use allocation and protection of international watercourses. The 1929 Convention between Norway and Sweden concerning common lakes and watercourses recognized mutual consent as a general principle of international law and emphasized that it was necessary for water diversion.[377] This represents an attempt to harmonize between the use and protection of shared waters. Even though the 1929 Convention did not refer to general principles of international law mentioned in the earlier convention,[378] some concepts and principles used in the previous conventions remained, e.g. requiring mutual consent for the diversion of water, which may cause serious changes in water level or quality.

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372 The term "watercourses" has been adopted by the 1997 UN Convention.

373 *ST/LEG/SER*.B/*12,* Legislative series Treaty No.166.

374 Ibid, Legislative series Treaty No.167.

375 Ibid, Legislative series Treaty No.168.

376 Act of 12 June 1931 (Norway) relating to the Convention of 11 May 1929 between Norway and Sweden on certain questions relating to the law of watercourses, see *ST/LEG/SER.B/12*,p.34; and Act No.405 (Sweden) of December 1929 containing regulations relating the application in Sweden of the Swedish-Norwegian Convention of 11 May 1929 relating to the Law on Watercourses, see *ST/LEG/SER.B/12*, p.36.

377 See, 34 *MNRGT*, 10.

378 *ST/LEG/SER.B/12*, Legislative series Treaty No.168.

With regard to the regime of non-navigational uses, a multilateral convention of general application was adopted for the first time in the 1920's, providing substantive rules concerning hydropower development. The 1923 Geneva Convention relating to the Development of Hydraulic Power Affecting More than One State provides that "States may use the hydraulic power of international waterways only if a preliminary agreement between the States has been concluded, it can not be established as a customary rule or, still less, as a general principle of law."[379] The *Lake Lanoux Arbitration* relied upon the 1923 Geneva Convention, concluding that international practice did not allow a decision on anything more than the above-mentioned provision.[380] However, controversies surrounding this provision of a prior consent between riparian States of an international river are attributable to the failure of the Convention; the idea that necessity of a prior consent between the riparian States for the development of an international river is incompatible with the territorial sovereignty. Of the eleven States that are parties to the 1923 Geneva Convention, Austria and Hungary had held such opinions. It is maintained "even their adherence may have been largely for historical, rather than substantive reasons."[381] However, the European riparian State treaty practice in the early 1920's adopted substantial provisions in harmonizing between the non-navigational uses and environmental protection of international rivers. For example, the 1923 Agreement of Italy and Austria concerning the economic relations between the frontier zones of the two States provides that:

> For industrial or power-producing installations or for the executions of the works for the protection of the watercourses located in the frontier area, the Contracting Parties, as far as possible, prevent the impairment of fishing rights and shall endeavor not to destroy fish.[382]

This provision regulates industrial use of water and hydropower production as well as the protection of fish, implying that without the proper protection of water, fish cannot be protected and where there are protected water conditions for fish, there is also environmental protection of watercourses. This is not a provision of general application. As to the protection of fish and fishing, it should be noted that the 1923 Agreement between Italy and Austria resembles the late 19th century convention between Germany and Luxemburg concerning the regulations of fishing in the boundary waters.[383] However, there are differences between the two. The late 19th century treaty practice provides that polluting substances

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[379] See, 36 *LNTS*, 76.
[380] McCaffrey, 2001, p.128.
[381] Ibid.
[382] Article 14 of the 1923 Agreement translated by Lammers see, Lammers 1984, p.94.
[383] *ST/LEG/SER.B/12,* Legislative series Treaty No.200.

injurious to fish may be permitted by agreement between the two States, particularly in the case of agricultural or industrial activity of "exceptional importance." On the contrary, the 1923 Convention between Italy and Austria requires the parties to prevent the impairment of fishing rights and endeavor not to destroy fish stocks. These are important legal formulations, including the right to fish and the protection of fish stocks, representing the different concerns of the day.

Even though there exists no multilateral convention regulating the right and responsibilities of riparian States concerning the living resources in inland waters, the provisions provided for by the 1892 Convention between Germany and Luxemburg, and the 1923 Convention between Italy and Austria, provide some insight concerning the living resources of international watercourses.

The legal regimes and management paradigms of the Western European international watercourses, as prescribed in the 1920's treaties, can be illustrated in terms of the independent variables (i.e. the conventions) and dependent variables, i.e. Concepts and Approaches (CA), Substantive Principle (SP), Implementation Mechanisms (IM), Dispute Settlement (DS) procedures as follows:

	CA	SP	IM	DS
The 1922 Agreement	*ir/iw*	*mb*	*fwc*	*ad*
The 1923 Geneva Convention	*ir*	*pc*	*jc*	*ad*
The 1923 Agreement	*fr*	*rfpfs*	-	*ad*
The 1929 Convention	*cliw*	*muc*	*fwc*	*ad*

CA = Concepts and Approaches *(ir = international river*; *fr = frontier river*; *iw = international watercourses*; *cliw = common lakes and international watercourses*); SP = Substantive Principles (*mb = mutual benefit*; *pc = prior consent*; *rfpfs = right to fish and protection of fish stocks; muc = mutual consent*); IM = Implementation Mechanisms (*fwc = frontier water commission*; *jc = joint commission)*; DS = Dispute Settlement venues (*ad = adjudication*)

This table illustrates that there was a remarkable progress in the 1920's concerning the application of the concepts and approaches, substantive principle and institutional arrangement of international rivers. The concepts of international river (*ir*) and the international watercourse (*iw*) were the focus of the 1922 Agreement, which is governed by the principles of mutual consent (*muc*) and mutual benefit (*mb*). As stated in the 1923 Geneva Convention, prior consent (*pc*) between the riparians was considered as an essential principle concerning the non-navigational use of international rivers (this is in line with the 1921 Barcelona Convention recognizing *pc* as an essential principle for navigational uses). In the 1923 Agreement concerning the frontier zones of the two States, the recognition of right to fish and protection of fish stocks (*rfpfs*) is noteworthy, because it established the interconnection between the right to fish and the obligation

for protection of the living resources. Above all, the 1929 Convention is noteworthy for establishing the broader approach to the uses and protection of watercourses. This adopts the concept of the common lakes and international watercourses (*cliw*), establishes a frontier water commission (*fwc*) or joint commission (*jc*), and recognizes that diversion should not alter water levels to the point of affecting navigation or timber floating, where it causes serious harm.

4.5. Treaties since the 1950's

In this section, the focus will be on treaties concerning the Rhine, Danube, and the other European international rivers since the 1950's. This is done in order to describe a simultaneous development between the 1950's and the 1980's, relating to the regimes of uses and protection, as well as the changing management modalities of international rivers.

The political map of Europe, including the riparian State positions, changed dramatically after World War II, leading to a division between Western and Eastern Europe. The division of Europe hampered cooperation between the European States. Since the beginning of the 1950's, several studies of the legal aspects of the rivers and lakes of common interests for the European States were undertaken aiming for the conclusion of a general convention,[384] but in the period of four decades from the 1950's onward, no convention of a general application to the European international watercourses came into being. However, more specific international watercourse agreements were concluded in Europe, within the Western and Eastern blocs.

The riparian State treaties in the 1950's and 1960's, when looked at from the perspective of the two opposing blocs of European States, reflect that within their own blocs the riparian States were concerned about the use and protection of international watercourses, recognizing the interrelationships between the uses and environmental consideration. In Western Europe, as was mentioned before, there was the establishment of the Rhine Commission for Protection in the late 1950's and its decision concerning a draft convention. In the 1960's, the 1963 Rhine Convention exemplifies the further development concerns the legal regime of the Rhine.[385] This constituted the Rhine Commission with the duty to combat water pollution. However, the Convention lacked by substantive principle, which was considered as a "serious handicap and reflected the considerable conflicts of interests which existed between the riparian States of the Rhine."[386] Since the scope of the mandate of the Commission was limited, the Rhine downstream from Lake Constance, considerable parts of

[384] The ECE is one of the first organizations, since the 1950's, to initiate study on such common rivers and lakes. Its efforts led to the conclusion of the 1992 ECE Helsinki Convention.

[385] *FFCS*, II, 1963, pp.1510-1515.

[386] Lammers, 1984, p.169.

the water system of the Rhine remained outside the scope of the Commission.[387] This situation exposed the lack of a harmonized approach as to the Rhine.

For the protection and improvement of the Rhine River, two specific conventions were adopted in the 1970's, targeting two specific pollutions, chlorides and chemicals. These are the 1976 Chloride and Chemical Conventions.[388] The Chloride Convention is aimed at reducing (at least 20%) of salinity of the Rhine within four years after the entry into force of the Chloride Convention, while the Rhine Commission for Protection is responsible for offering proposals for further reduction of salinity of the Rhine. The Chemical Convention is aimed at the protection of the Rhine against two categories of dangerous chemical substances; the most dangerous substances - in terms of toxicity, persistence and accumulation in the living organism or sediments, e.g. mercury, cadmium and aldrin, endrin – are categorized in a black list in Annex I of the Convention. This *black list* aims at the elimination of the dangerous substances in the Rhine by setting emission standards authorization. The substances include metalloids and metal compounds. Annex II of the Chemical Convention provides a list of chemicals which may be dangerous, and are classified as the *gray list*. States are required to establish national programs aiming at the reduction of such substances in the waters.

As to the thermal pollution of the Rhine, the Commission for Protection made a few recommendations to the Member States in the 1970's, aiming at concluding a convention. The above-mentioned examples indicate that the issue at stake for the protection and use of international watercourses is not only the conclusion of the treaties for cooperation between riparian States and the establishment of the river commissions, but also the identification of dangerous chemical or biological substances that affect the watercourses, and the elimination and reduction of discharges of substances according to their toxicity and effects.

An important development of the 1980's with respect to the Rhine watercourse is the Program of Action started in 1987 as a follow-up to the 1976 Chloride and Chemical Conventions. The Rhine regime that developed in the 1980's include provisions: 1) to improve river eco-systems including the protection of living organisms in the water; 2) to guarantee the protection of drinking water; and 3) to reduce water pollution by reducing hazardous substances to such a level that sediment could be used on land without causing harm. The development of the legal regimes of

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[387] Ibid.

[388] Convention on the Protection on the Rhine against Chemical Pollution 1976 see, 16 *ILM*, 1977, p.242. Convention on the Protection of the Rhine against Pollution by Chlorides 1976 see, 16 *ILM*, 1977, p.265. The Central Rhine Commission issued an Ordinance Concerning the Carriage of Dangerous Goods by the Rhine in 1970 according to which certain goods are not allowed to be transported on the Rhine and others can be carried according to established security provisions.

uses and protection of the Rhine River, during the 1960's through the 1980's, can be illustrated as follows:

	CA	SP	IM	DS
The 1963 Rhine Convention	*ir*	-	*rc*	*ad*
The 1976 Chloride and Chemical Conventions	ir	*reds/elds/rds*	*pa*	*ad*
The 1987 Plan of Action	-	-	*pa*	-

CA = Concepts and Approaches *(ir = international river*); SP = Substantive Principles (*ophs = obliging the parties for the public health and safety*; *prp = prohibiting radioactive pollution*; *reds = reduction of salinity*; elds = *elimination of dangerous substances*; *rds = reduction of substances*); IM = Implementation Mechanisms (*leg = legislation*; rc = *river commission*; *pa = plan of action*); DS = Dispute Settlement veneus (*ad = adjudication*).

As with the previous tables, along with the independent variables (i.e. the treaties), the dependent variables are: Concepts and Approaches (CA), Substantive Principles (SP), Implementation Mechanisms (IM), and Dispute Settlement (DS) venues. A noteworthy trend in the Western European treaty practice is that the CA up until the 1980's remains that of the international river (*ir*), at least as concerns the Rhine. From the 1950's to the 1980's, there was recognition of the need for the protection of watercourses in a broader perspective as well as the commitment of European States to take measures for the public health and safety. At the same time, the 1963 Rhine Convention surprisingly lacks Substantive Principles (SP). However, the two conventions of the 1970's mentioned in the table have a more focused approach as to the reduction of salinity (*reds*) and combating pollution, including reduction of chloride substances and elimination and reduction of chemical substances (*elds = elimination of dangerous substances* and *rds = reduction of substances*) with the 1987 Plan of Action (*pa)*. The European treaties from the 1950's to the 1980's clearly demonstrate a transition from a piecemeal to a harmonized approach with regard to the management of the shared watercourses.

As regards other European rivers, since the 1950's, the trend of the riparian States appeared to shift from the mere use to the protection of international watercourses, aiming for the harmonization between the legal regimes of protection and uses. For example, the 1950 Protocol between Belgium, France and Luxembourg established the Tripartite Standing Committee on Polluted Waters.[389] This Protocol represents an important trend in Europe, relating to the environmental protection of international watercourses. This Committee has promoted cooperation through the years with the aim of abating water pollution. In this respect, it has succeeded the

[389] *YILC*, Vol.II, Part Two, 1974, p.109.

1892 Convention between Prussia and Luxemburg[390] and the 1923 Convention between Italy and Austria[391] on the preventing of pollution in order to protect fish stocks. France and Spain signed the 1952 Convention concerning fishing in the international section of the contiguous waters, i.e. the Spanish section of the Bidassoa, prohibiting pollution from factories and similar works.[392]

The legal regime of Lake Constance can be used as an example to show a trend of riparian State practice in the 1960's concerning the protection of water in the Western European context. The developments in the 1960's concerning Lake Constance should be seen in the light of the background of the relevant legal regimes since the 19th century.[393] In 1960, Austria, West Germany and Switzerland adopted a new Convention concerning the protection of Lake Constance against pollution, employing the substantive principle of prohibiting pollution. The 1960 Convention focuses on the environmental protection of the Lake, prohibiting the existing as well as new pollution.[394]

The 1960 Convention aimed at combating pollution as long as the said protection inflicts no substantial injury to the other parties. From the point of view of the regimes of uses and environmental protection, the legal arrangements of Lake Constance demonstrate an evolution over a period of over one hundred years, concerning the rules of flow of water, navigation, fishing and environmental protection, respectively. Regarding water use allocation, the legal arrangement of Lake Constance appears to be based on the mutual consent of the parties. As to the protection of the water, the provisions provided for in the 1960 Convention are substantive, adopting the no substantial injury or no harm rule. The legal provisions of the 1960 Convention are, according to Lammers, soft with regard to existing pollution and not stringent with regard to new pollution.[395] Still, there is a harmonized approach in the legal arrangement of Lake Constance concerning the rules of flow of water, navigation, fishing and environmental protection, despite being dealt in separate legal documents.

The development of the legal regimes of the Western European rivers can be seen through the prism of legislation of the European Community (EC), which issues directives whereby the Member States have certain discretion in implementing the legislation in accordance with their national

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390 *ST/LEG/SER.B/12,* Legislative series Treaty No.200.

391 Lammers, 1984, p.94.

392 *ST/LEG/SER.B/12*, Legislative series Treaty No.192.

393 The 1857 Convention between Baden-Wuttemberg, the free State of Bavaria, Austria and Swiss Confederation provided for the regulation of waters in Lake Constance, the 1867 Convention established international regulations for navigation and port service and the 1893 Convention provided for fishing regulations in Lake Constance. This late 19th century riparian State treaty practice had prioritized water use for irrigation and industrial use, deeming such uses of utmost importance compared to the protection of fish from pollution.

394 *ST/LEG/SER.B/12,* Legislative series Treaty No.127.

395 Lammers, 1984, p.125.

legal and administrative standards. Among the EC Directives, the 1976 Directive on Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment of the Community is important, in that it prohibited the discharge of dangerous substances into "fresh waters." This directive is based on a broader approach, which encompasses all fresh waters (not just watercourses) and distinguishes the dangerous substances from other substances. According to Article 1(2) of the Directive, the "fresh water limit" is fixed at the place in the watercourse where, at low tide and in a period of low fresh water flow, there is an appreciable increase in salinity due to the presence of seawater.[396]

Other directives relating to the fresh water of the European Community include bathing, drinking, irrigation, industrial use, etc.[397] In the 1980's, a spectrum of laws developed within the EC, governing the various aspects of the aquatic environment. The whole bunch of the European Community Water Laws can be seen from different perspectives,[398] in particular the water use and water quality objectives, pollution discharge including dangerous substances, specific processes and product standards.[399]

Another development in the 1980s can be found in the decisions or declarations of the ECE. For example, the 1980 ECE Declaration of Policy on Prevention and Control of Water Pollution including Transboundary Pollution,[400] takes an integrated approach, suggesting that water pollution control should be handled while taking into account possible interactions of pollutants on air, land and waters. The policy prohibits all discharges of liquid and solid wastes from domestic, industrial and agricultural activities to surface waters and aquifers, unless the competent authority in charge of water pollution control has authorized them.

The 1982 ECE Decision on International Cooperation on Shared Water Resource,[401] calls upon governments to strengthen their efforts to cooperate in the elaboration of policy aims, program and planning regarding the development, use, and conservation of shared water resources.

The 1984 ECE Declaration of Policy on the Rational Use of Water recognizes the community's water interests as well as the interrelationship between surface and groundwater. In formulating and adopting future-oriented rational water policies, it declares that water, as a common resource, must be used in the interest of the public at large. The policy further states that special emphasis should be put on to: a) a unified strategy for water withdrawal, distribution, treatment, use and discharge;

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396 EEC 76/464/1976; *ECEL*, Water 7, 1992.

397 *Environment, Nuclear Safety and Civil Protection,The Commission of the European Communities Directorate General*, XI, 1992, pp.463.

398 Macroy, 1993, pp.119-140.

399 The EC Water Framework Directive (ECWFD) replaces many of the earlier directives. This directive takes an integrated approach and set an objective to achieve safe water status by the year 2015. ECWFD was adopted in October 23, 2000, see *OJ*, 37, pp.1-72.

400 As adopted by the ECE at its Thirty-fifth Session, in it's Decision B (XXX).

401 As adopted by the ECE at its Thirty-seventh Session, in its Decision D (XXXVII).

b) coordinated utilization of both surface water and ground water, taking into account their close interrelation; and c) priority of public drinking water supply in the use of ground water.

In its Decision on Cooperation in the Field of Transboundary Waters 1986, the ECE urged the governments of the riparian States to discuss and negotiate questions relating to pollution control and flooding as well as monitoring systems.[402] Furthermore, in 1987 on the basis of the principles of reciprocity, good faith and good neighborliness, the ECE called upon States to foster and strengthen cooperation and establish institutional mechanisms and early warning system.[403]

The 1989 ECE Charter on Groundwater Management called upon States to formulate and adopt a long-term policy to protect groundwaters from pollution and overuse.[404]

The overall development of the legal regimes of uses and protection of the Western European river, starting from the 1950 to the 1980's, is illustrated in the following table:

	CA	SP	IM	DS
The 1950 Protocol	*ir*	*awp/prp*		*ad*
The 1957 Convention	*ir*	*prp*		*ad*
The 1960 Convention	*ir*	*prp/ nsi*		*ad*
The 1976 EU Directives	*reia*	*pdds*		*ad*
ECE 1980's Decision	*reia*	*rauc*	*eim*	*ad*

CA = Concepts and Approaches (*ir = international river*; *reia = regional integrated approach*); SP=Substantive Principles (*awp/prp = abatement of water pollution/prohibition of pollution*; *nsi = no substantial injury*; *pdds = prohibitions of the discharge of dangerous substances*; *rauc = rational use of waters in the community*); IM = Implementation Mechanisms (*eim = establishment of the implementation mechanism*); DS = Dispute Settlement venues *(ad = adjudication*)

This table, as in the previous tables, employs the independent variables (i.e. the treaties) as well as the dependent variables, which are: Concepts and Approaches (CA), Substantive Principle (SP), Implementation Mechanisms (IM), and Dispute Settlement (DS) venues. A noteworthy trend of the treaties, as shown in this table, is that they focus on the regime of environmental protection, i.e. the abatement of water pollution (*awp*), the prohibition of pollution (*prp*) and the establishment of the implementation mechanism (*eim*). The treaties also include prohibitions of the discharge of dangerous substances (*pdds*) into waters and the States' obligation not to cause substantial injury (*nsi*) to each other. In the EU Directives, there is a regional integrated approach *(reia*), which requires rational use of waters in

[402] As adopted by the ECE at its Forty-first Session, in its Decision B (41).
[403] As adopted by the ECE at its Forty-second Session, in its Decision I(42).
[404] As adopted by the ECE at its Forty-forth Session, in its Decision E (44).

the community (*rauc*). The Institutional Mechanism (IM) and Dispute Settlement (DS) rules established by the pre-1950's treaties remain in effect.

As regards the Eastern European treaties, it should be noted that, since the 1950's, the frontier treaties sought to regulate the protection and use of contiguous waters, i.e. the 1950 Treaty between Hungary and the Soviet Union[405] The 1952 Agreement between the German Democratic Republic (East Germany) and Poland provided for free navigation in frontier waters, including the use and maintenance of such waters.[406] Austria and Hungary signed the 1956 Treaty concerning their frontier waters, which pertained to questions of economy that were dependent on waters of the region, and required the parties to combat pollution.[407] The 1958 Treaty regulating the Soviet-Afghan frontier included a provision requiring the parties to take the necessary measures to protect frontier waters from pollution, particularly acid and waste products.[408] In 1963, the Polish-Czechoslovak bilateral commission initiated measures for the protection of frontier waters against pollution and salinization.

Austria signed the 1967 Treaty with Czechoslovakia concerning the regulations of water management questions for the protection of shared waters against pollution.[409] Though this treaty imposes a soft standard for combating pollution, the Parties are required to take measures to prevent serious adverse effects on the water conditions in the territory of the other party.[410]

Among the Eastern European States, the rules concerning pollution of international navigable watercourses from the discharges of oil residues developed further in the late 1950's. For example, the Danube Commission adopted a set of the fundamental rules concerning navigation in 1958, containing certain provisions to control pollution caused by navigation, particularly by discharge of oil residues.[411] This may be also considered as a definitive turning point of the legal regime of the Danube River concerning navigational use and environmental protection.

Regarding the fish stocks in the Danube River, the 1958 Convention concerning the fishing in the waters of the Danube was concluded by Bulgaria, Czechoslovakia, Hungary, Romania, the Soviet Union, and Yugoslavia.[412] The Convention required cooperation in the protection of

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[405] *ST/LEG/SER.B/12*, Legislative series Treaty No.226.
[406] Ibid, Treaty No.214.
[407] Bruhacs, 1993, p.97.
[408] *ST/LEG/SER.B/12*, Legislative series Treaty No.86.
[409] *UNTS*, 728, p.313.
[410] Austria and Czechoslovakia Treaty of the Settlement of Legal Questions concerning the Frontier 1928 see, *LNTS*, 108, p.10. It needs to be mentioned here that in the different political circumstances of the late 1920's, Austria and Czechoslovakia, (which were, in the early 1990's, again in a different situation, separated into Czech Republic and Slovakia), had signed a Treaty regarding the Settlement of Legal Questions concerning the Frontier, including regulating the right to fish.
[411] UNDoc.A/CN.4/274.
[412] *UNTS*, 339, p.58.

fish, and prevention of pollution caused by sewage and other wastewater including industrial and municipal undertakings.[413]

Among many bilateral and multilateral agreements among the Eastern European countries concerning the Danube River,[414] a few more representative ones have been studied for further scrutiny. They are: the 1955 Treaty between Hungary and Yugoslavia; the 1977 Treaty between Hungary and Czechoslovakia; and the 1986 Convention on the Protection of the Tisza River and its Tributaries against pollution.

The 1955 Treaty between Hungary and Yugoslavia is noteworthy from the point of view of an integrated management perspective. This covers various elements of integrated water management, including the canalization of international watercourse and preservation of river bed and drainage basin: flood and ice prevention; storage and discharge of waters; water supply; protection against pollution; inland waters; hydroelectricity development; soil erosion; agricultural use; planning, execution of works, costs operation and maintenance; and exchange of data.[415] It needs to be mentioned here that as to the upper section of the Danube, the 1963 Treaty established the Hydraulic Power Plant and Navigation System of the Iron Gate,[416] which involves the navigational use and non-navigational uses of the Danube River.

Apart form many piecemeal agreements currently in force,[417] one of the agreements of the 1970's concerning the Danube indicates a harmonization between the regimes of navigational use, non-navigational uses and environmental protection. This can be seen with the 1977 Treaty between Hungary and Czechoslovakia,"Concerning the Construction and Operation of the Gabcikovo-Nagymaros System of Locks" (hereinafter referred to as the "1977 Danube Treaty").[418] According to the Preamble, the barrage system was designed to attain "the broad utilization of the natural resources of the Bratislava-Budapest section of the Danube River for the development of water resources, energy, transport, agriculture and other sectors of the national economy of the contracting parties".[419] In the Preamble, the interrelationships are indicated between navigational use, non-navigational uses and the environmental protection of the Danube River, i.e. the objectives of hydro-electricity production, navigation, flood protection and regional development.

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413 *ST/LEG/SER.B/12,* Legislative series Treaty No.125.

414 As to the Damnbe River, a number of bilateral agreements were concluded since the 1950's: the 1950 Romania-Hungary Treaty including the subsequent update agreements of 1962 and 1969; the 1954 Czechoslovakia-Hungary Treaty; and the 1955 Hungary-Yugoslavia Treaty; and the 1956 Austria-Hungary Treaty. See Bruhacs, 1993.

415 See, Article 1, translated by Bruhacs see, Bruhacs, 1993, p.97.

416 Bruhacs, 1993 p.98.

417 Ibid, p.89.

418 *ICJ Reports*, 1997, pp.1-72, para 15.

419 Ibid.

The 1977 Danube Treaty is based on the joint investment (Article 3[1]) and equal measure in the use of the Danube (Article 4[4]). The treaty requires the Parties to maintain the water quality (Article 15), riverbed (Article 16), and to protect the fisheries (Article 20). The project required the building of two dams and a system of locks, one on Czechoslovakian territory at Gabcikovo and another on Hungarian territory at Nagymaros, including navigational improvement of 200 kilometers of the Danube River. This is one of the international watercourse treaties regulating ice discharge. The interpretation of the 1977 Danube Treaty gave rise to a dispute concerning the *Danube Gabcikovo-Nagymaros Project Case*, [420] which was decided by the ICJ.

Among the developments in the 1980's, the most noteworthy is the 1986 Declaration by Hungary, Czechoslovakia, Yugoslavia, Romania and the Soviet Union which dealt with cooperation among the riparian States concerning hydro-economic matters of the Danube and its protection against pollution. The signatories of this declaration have committed themselves to combat pollution by cooperation. The Parties of the 1986 Declaration have also signed the 1986 Convention on the Protection of the Tisza River and its Tributaries against Pollution. In its Article 1, the 1986 Convention defines "pollution" as the result of human interference making the watercourse "partly or completely inappropriate for a specific utilization". The development of the regime of Danube from the 1950's to the 1980's can be illustrated in the following table:

	CA	SP	IM	DS
The 1955 Treaty	*ir/iw/idb/*	*pap*	*co*	*ad*
The 1977 Treaty	*idb*	*bu/ji/em/pf-wa*	*co*	*ad*
The 1986 Declaration	*ir/idb*	*pap*	*co*	*ad*
The 1986 Convention	*idb*	*pap*	*co*	*ad*

CA = Concepts and Approaches (*ir = international river*; *iw = international watercourse*; *idb = international drainage basin; rb = river bed*); SP = Substantive Principles (*pap = protection against pollution and water quality*; *bu = broad utilization*; *ji = joint investment*; *em = equal measures*; *pf-wa = protection of fisheries and water quality*) IM = Implementation Mechanisms (*co = cooperation*); DS = Dispute Settlement venues (*ad = adjudication*)

This table illustrates that from the 1950's to the 1980's, as a result of the increasing awareness regarding the protection of watercourses against pollution, the concerned States began to commit themselves to environmental protection. The table illustrates that the parties to the treaty have taken a wider, international drainage basin (*idb*) approach; protection against pollution is the agreed principle (*pap*), though not stringent. The 1986 Declaration have a wider territorial application, but the 1986

[420] Ibid.

Convention was limited to two countries. The conditions of cooperation (*co*) include the exchange of information, and obligations of notification especially in times of flooding and in case of pollution. Implementation of these documents depends on mutual cooperation, which relies on periodic consultations between the signatories.

It can be summarized that Eastern European States adopted the principle of solidarity and collaboration through the Council for Mutual Economic Assistance. According to a view expressed in the Sixth Committee of the UN General Assembly Eastern European States generally recognized sovereign equality, mutual benefit and respect for the interests of the State concerned.[421] These are generic principles regarding the uses and protection of international watercourses. Based upon these generic principles, experts suggest that Eastern European States were able to conclude treaties among themselves adopting substantive rules of binding characteristics concerning control of pollution in international watercourses.[422] On paper, these rules called for high standards of protection. In reality, not much was achieved. In sharp contrast to the Eastern European State treaties concerning watercourses up to the 1960's, the development in Northern Europe in the 1970's is noteworthy for its stringent standards and practices, which we will take up in the following section.

4.6. Finnish-Swedish Frontier River

An outstanding example of riparian State treaty practice evolved in the 1970's in northern Europe concerning frontier rivers. The 1971 Finnish-Swedish Frontier River Agreement established the Frontier River Commission between the two countries.[423] This can be considered an outstanding model agreement concerning the use and protection of international watercourses, because of the following structures and strengths.

The Finnish-Swedish Frontier River Commission, an autonomous body in which both Parties are represented, has the extraordinary right of granting or refusing permission for water uses.[424] This is typically a right inherent to the States, whether or not to grant or refuse permission for water uses, yet here it is ceded to the Frontier River Commission under the 1971 Finnish-Swedish Frontier River Agreement. With respect to the regime of environmental protection, the Frontier River Commission has the following rights: to prohibit injurious activities,[425] to inspect sites and

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[421] *UNGAOR 25th Session, Sixth Committee 1233rd Session Report*, see Ukraine, p.309, Bulgaria, pp.311-312, Romania and the Soviet Union, pp.310-311.

[422] For example, Lammers, 1994, p.256.

[423] *UNTS*, 825,p.91. According to Article 1 of the Agreement, the Commission consists of six members, each government appointing three.

[424] Article 4 and Annex C of the Agreement.

[425] Article 11.

obtain evidence,[426] and to order compensation from polluters to victims, including foreigners.[427] This kind of legal arrangement is also noteworthy in a situation where portions of an international watercourse are situated entirely in different States, where injurious acts occur in one State, resulting in injuries in another, and thereby the victims and perpetrators fall under different legal systems. In such cases, a conflict of jurisdiction arises, which requires determination of jurisdiction and applicable law, dealing with transboundary interference concerning international watercourses.

The 1971 Finnish-Swedish Frontier River Agreement appears to be an appropriate model prohibiting transboundary injurious activities, providing for inspection sites to obtain evidence and ordering compensation from polluters to victims. Compared with the other joint commissions existing today, the rights and responsibilities possessed by the Finnish-Swedish Frontier River Commission are extraordinary. The most common features of joint river commissions are: a) advisory capacity as opposed to executive power; b) authority to undertake or co-ordinate studies and investigations leading to recommendations; c) the technical expertise of the secretariat staff, which prevents the domination of political influence, concentrated at the commissioner's level; d) the establishment of a permanent diplomatic commission and secretariat staff; and e) judiciary power to settle disputes, and to decide on appointment issues and other matters.[428] The powers of the Finnish-Swedish Frontier River Commission encompass both judicial and executive powers.

In addition to the above-mentioned legal structures, important features of the 1971 Finnish-Swedish Transfrontier River Agreement are as follows.

First, the Agreement recognizes transfrontier jurisdiction and thereby settles the issue of conflicts of laws as regards jurisdiction of the courts, the applicable law and the enforcement of judgment. Second, the national laws of the Parties have a supplementary role and the substantive law applied by the Commission has been harmonized with the national laws.[429] The national governments shall examine applications for permits regarding water use.[430] The Commission's decision can be reviewed by inter-governmental examination if either government considers it necessary, depending on the nature of a given case.[431] An appeal against the

[426] Article 6 and Chapter 8, Article 7.

[427] Chapter 8, Article 13. The substantive law has been harmonized with the national law (Annex A paras 2 and 13). According to the circumstances, the language of the Commission is either Finnish or Swedish or both. The individual's right to protect the interest against interference originating in the territory of the other State is recognised, including the recognition of locus standi of the foreign victims. If the Commission decides to grant a permit for an activity whereby another person's property will be damaged, compensation has to be paid by the applicant for the permit. Chapter 6, Articles 5, and 13, and Chapter 8, Article 10.

[428] Caponera, 1992, p.237.

[429] Article 13.

[430] Article 4.

[431] Ibid.

Commission's decisions can be brought to the Water Courts of the concerned State, to resolve issues concerning compensation for expropriated property.[432] Third, the individual's right of protection against an interference originating in the territory of the other State is recognized, including the recognition of the right to sue the perpetrators, *locus standi* of victims irrespective of their nationality;[433] and the payment of compensation to the victim is governed by the law of the State where the damage is sustained.[434] Finally, with respect to the environment, protective measures taken, or to be taken, should be judged on the basis of what is technically possible. The balance between competing interests of water use is to be determined by the nature of the area, on a case-by-case basis.[435]

The 1971 Finnish-Swedish Frontier River Agreement can also be considered a model similar to collective utilization, as distinct from equitable utilization. Some authors have redefined the concept of normative security, focusing on the environmental security in terms of fresh water resources. They argue that the principle of equitable utilization is based on a competitive-use orientation of States, aiming to balance competing sovereign interests, rather than the common environmental security interests.[436] Viewed from the stand point of "environmental security,"[437] the joint river commissions that exist today are careful to preserve sovereign rights, although the commissions meet the perceived need of the time.[438]

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[432] Article 9.

[433] Annex paras 2 and 13.

[434] Article 3.

[435] Article 6.

[436] Brunnee and Toope, 1997, pp.26-59. The two authors argue that in a traditional sense, trans-boundary environmental degradation is considered to interfere with State sovereignty, which remains the cornerstone of the two main principles of present-day international water law: 1) it is the sovereign right of States to control the natural resources including water within their boundaries not causing significant harm to other States while exploiting such resources; 2) equitable share or equitable utilization shall be employed to waters straddling States' territories. Normative emphasis on competing sovereign rights is also manifested in compliance issues. Dispute resolution involves a step-by-step procedure leading to arbitration or adjudication. Environmental principles are considered to be subordinate to competing sovereign interests, and are thus ineffective because they lack flexibility to adapt to new changes. Older treaties reflect the problems caused by polarized positions, and thus result in normative stagnation. In eco-system fresh water regime building, realizing the importance of common concern is more vital. The focus of regime building is to encourage States to cooperate with each other and show common concern.

[437] In the Hague Declaration 2000, the Ministers and Heads of Delegations recognized "water security" as a common goal in the 21st Century and pledged to meet the challenges by coherent national and, where appropriate, regional and international institutions in a transparent and accountable manner, see pares 1, 6 and 10 of the *Ministerial Declaration of the Hague on Water Security in the 21st Century, 22 March 2000 The Hague*.

[438] Of the 90 river commissions, 48 are in Europe, 23 in the Americas, 10 in Africa, and 9 in Asia. The literature classifies joint river commissions in a variety of ways: a) by geographical jurisdiction, i.e. national boundaries or drainage basins; b) by form, i.e. informal, formal, autonomous; c) by duration, i.e. temporary, fixed, permanent; d) by membership, i.e. bi-

Compared with the other joint river commissions, the focus of the Finnish-Swedish Frontier River Commission appears to be on the common interests. What accounted for the successful negotiation of the 1971 Finnish-Swedish Frontier River Agreement may not be integral to success in other international watercourses where there are conflicts. However, in the Finnish-Swedish Frontier River regime, the negotiations of the needs, i.e. the harmonized regulation of water use and its protection, seemed to be the deciding factors affecting the agreement and the States' cooperation, although arguments may be made that social, political and cultural configurations supported the cooperation between the two States. On the whole, it must be noted that the 1971 Finnish-Swedish Frontier River Agreement harmonizes not only the uses and protection of international watercourses, but also national and international water laws. The frontier watercourse regime of the 1971 Finnish-Swedish Frontier River Agreement can be illustrated in the following table:

	CA	SP	IM	DS
The 1971 Treaty	*fr/iw*	*mu/es*	*frc*	*frc/nc*

CA = Concepts and Approaches (*fr* = *frontier river*; *iw* = *international watercourses*); SP = Substantive Principles (*mu* = *multiple uses*; *es* = *equal share*); IM = Implementation Mechanisms (*frc* = *frontier river commission*); DS = Dispute Settlement venues (*nc* = *national courts* and *frc*)

This table illustrates that the 1971 Treaty treats the frontier rivers (*fr*) approach as synonymous with the international watercourse (*iw*) approach, which aims at multiple uses *(mu*), including hydraulic construction and timber floating. The Substantive Principle (SP) adopted by this treaty is equal share (*es*) of the water volume. The treaty also established the Frontier River Commission (*frc*) with wide powers, including the power to render judicial decisions. It does establish a mixed national court (*nc)* system, which means that an appeal against the Commission's decisions can be brought to the national Water Courts.

Apart from the 1971 Finnish-Swedish Frontier River Agreement, there were a few other developments in northern Europe in the 1970's: the harmonization of private and public international law and the recognition of the right of access to justice of foreign victims concerning transfrontier environmental interference. Another important development was the 1974 Nordic Environmental Convention signed by Denmark, Finland, Norway and Sweden.[439] An innovative approach adopted by the Convention is that each contracting State is required to appoint a "supervisory authority" responsible for supervision of the environmentally harmful activities in

party, multi-party, including all riparians; and e) by subject matter, i.e. navigation, flood control, developmental issues, including planning allocation and optimum use. See also Radosevich, 1992, pp.261-262.

[439] Article 3 see, 13 *ILM*, 1974, p.591.

other contracting States.[440] One of the purposes of this Convention is "to predetermine a guaranteed standard of compensation for the plaintiff as well as certain degree of severity to the law for tortfeasor [polluter]."[441]

Along with the notion of prohibiting transboundary environmental interference, the other development in Northern Europe in the 1970's and the 1980's relates to the development of the legal regime on land-based pollution of the sea,[442] international watercourses being the main sources of the pollution of the sea. The 1990's mark an important development, especially in Europe, of the harmonization between the use and protection of watercourses, which will be the focus in the following section.

4.7. Treaties in the 1990's

As a result of the increasing awareness of the importance of water resources and the value of the environment in the 1970's, several measures were taken in Europe in the last decade of the 20th century. This concerns the use, improvement and protection of international watercourses, whereby the riparian State treaties formally recognized the principles of equitable use, as well as sustainable and integrated management of shared water resources. A few (but representative) examples of the development in Europe in this respect during the 1990's will be examined here.

The 1991 Chloride Agreement and the 1992 Additional Protocol[443] were signed by the concerned States to combat the Rhine salinity problem. The high salinity levels of the Rhine are the result of the combined effect of brackish waters and salt disposal from industrial activities, making the waters of the Rhine unsafe for drinking and irrigation purposes. The 1991 Chloride Agreement and the 1992 Additional Protocol are the further elaboration of the 1976 Chloride Convention. According to the 1992 Additional Protocol, France (30%), Germany (30%), Switzerland (6%) and the Netherlands (34%) are required to share the cost of the Dutch efforts to divert the brackish waters to the sea in accordance with the formula agreed in 1972 by the parties. The problem of the salinity in the Rhine continues to this day despite the fact that a) the French Parliament ratified the 1976 Chloride Convention (in 1985); b) the French company was held

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[440] Article 1, ibid.

[441] Mahmoudi, 1990, p.134.

[442] The important ones are as follows: The 1972 London Convention on the Prevention of Marine Pollution by Dumping Waste and Other Matters, see 11 *ILM*, 1972, p.1294; The 1972 Oslo Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircrafts, obliging the Parties to take all possible steps to prevent the pollution of the sea, provided for in the list of harmful substances from vessels or aircrafts, see 11 *ILM*, 1972,p. 262; The 1974 Paris Convention for Prevention of Marine Pollution from Land-Based sources, see 13 *ILM*, 1974, p.352; and The 1974 Helsinki Convention on Protection of the Marine Environment of the Baltic Area, see 13 *ILM*, 1974, p.546.

[443] See<htt://www.iksr.org> Tractatenblad van het Koninkrijk der Netherlanden No.3.

responsible for the problem in the *Mines de Potasse d' Alsace* (MDPA*) Case*;[444] and c) it is legally prohibited to dispose waste into waters by the ECWFD.[445] Thus, the success (or lack thereof) of the 1991 Chloride Agreement and the 1992 Additional Protocol lies in their implementation. This most likely will occur upon the closure of the mines in the regions, which appears to be likely only when the mineral resources have been exhausted.[446]

In the 1990's, a contractual model of environmental management of international watercourses emerged by harmonizing private and public international law. This is related to the protection of the Rhine River. For example, the German Association of Chemical Industries (VCI) concluded the Rhine Contract with Rotterdam to improve the Rhine water quality by reducing mud levels. The VCI insures that certain categories of substances, listed in 3 Annexes - including chromium, cadmium, nickel, quicksilver, and copper - shall be reduced by the set limit of the contract no later than 2010. According to Article 3 of the Rhine Contract, Rotterdam shall waive claim for compensation, non-performance and other claims that may arise by 2010 through the VCI's subscribing firm on the river Rhine and its tributaries. Under the terms of this contract, claims for new parameters shall be waived until a competent authority shall be created to determine binding procedures to dredge the harbor of mud. If a reduction is not forthcoming in a timely fashion, Rotterdam can withdraw from the contract after a three-month grace period, after which existing claims shall be received. The 1991 Rhine Contract aims at improving both water quality and reducing the mud of the Rhine River, falling within the ambit of both private and public international law.[447] It should be also noted that the International Moselle Company was established as an international public

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[444] The District Court of Rotterdam (the Netherlands) found a French State-owned company the *Mines de Potasse d' Alsace Case* (MDPA) responsible for a considerable discharge of salt into the water of the Rhine. The case was brought by a grower and non-profit organization in Rotterdam against MDPA. The tribunal was asked to declare that the rising level of salt in the Rhine was due to the illegal act of MDPA, which should pay compensation for damages inflicted upon the grower's garden. Even though, the issues involved in this case were initially related to private international law, the Court of the first instance in 1979 decided to apply principles of public international law. The Court thereby referred to general principle of law according to Article 38(1)(c) of the Statute of the ICJ, and cited the *Trail Smelter* arbitral decision. The Court held that the waste discharge into the Rhine was illegal and those entitled to use the Rhine water are obliged to take one another's interest into account. The damage sustained by the claimants, which was attributable to the discharge of waste salt by MDPA was "significant." The Court also noted, "upstream users of an international river are no longer entirely free in the use of the river, but must when taking decisions regarding the use have reasonable regard for the interests of other, downstream users." The case reflected a trend toward liability for transfrontier pollution, something which later developments have affirmed. See, *NYIL*, 1976, pp.344-345.

[445] See, *OJ*, 37, pp.1-72

[446] McCaffrey, 2001, p.260.

[447] *Documents and Reports of the International Conference on Environmental Contracts and Conventions*, Rotterdam August 16, 1992, see Rest, 1993, pp.260-272.

corporation, with the three basin States as its shareholders, for financing and coordinating construction works.[448] These two examples represent the recent model of governance of river regimes.

At the continental level, the ECE adopted the 1990 Code of Conduct on Accidental Pollution of Transboundary water Pollution.[449] According to the Code, States should take appropriate national legislative and administrative measures to prevent and/or deal with such accidents, including risk assessment, early warning, rehabilitation and contingency planning. In 1990, the ECE also adopted Guidelines on Responsibility and Liability[450] regarding transboundary water pollution. The Guideline defined substantive rules that stated that States should take necessary legal and administrative measures to provide responsibility under national law for transboundary water pollution. In cases of hazardous activities States should take necessary legal and administrative measures to provide *liability* under national law for transboundary water pollution.

The 1992 ECE Helsinki Convention is the most important development in Europe in the 1990's. It is a regional treaty that (arguably) takes a global approach.[451] The Convention was initiated by the ECE, which entered into force in 1996. The 1992 ECE Helsinki Convention is a framework convention concerning the transboundary watercourses and international lakes. Article 2(2)(c) of the 1992 ECE Helsinki Convention requires "the Parties of the Convention to ensure that transboundary waters are used in a reasonable and equitable way."[452] The Convention foresees the adoption of bilateral or multilateral arrangements concerning transboundary watercourses of Europe.

Article 3(i) of the Convention concerns sustainable water resource management, which since the 1980's has been an agenda item in most if not all negotiations. Equitable utilization, sustainable development and eco-system approach, which characterize the 1992 ECE Helsinki Convention, were incorporated into several European treaties during the 1990's. For example, in 1994, Belgium, France and the Netherlands, the riparian States of the Meuse and Scheldt rivers, signed agreements concerning each river for the purpose of preserving and improving the water quality of the

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[448] Yu, 1991, p.96.

[449] Adopted by the ECE at its Forty-Fifth Session, in its Decision C(45), No.19d.

[450] Ibid, No.19e.

[451] *Report of the First Meeting of the Parties of the Convention*, Helsinki from 2 to 4 July 1997 GE.97-31534, and ECE/MP,WAT/2, August 12, 1997. The Parties are: Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, San Marino, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Tajildstan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, United Kingdom, United States, Uzbekistan, Yugoslavia, and European Community.

[452] See, 32 *ILM*, 1992, p.1312.

rivers.[453] Article 2(2)(b) of the 1994 Agreement on the Protection of the Meuse signed by France, the Netherlands and Belgium underlines the agreements of the parties "to endeavor to take appropriate measures to achieve an integrated management of the Meuse/Scheldt drainage basin area" and to work together to ensure sustainable development for the (Meuse/Scheldt) and its drainage basin area.[454] In this provision, integrated management is incorporated with an approach, taking into account the drainage basin concept.

Several European national courts had applied the principle of equitable utilization in the 20th century regarding the utilization of international rivers.[455] However, the 1990's treaty practice focused on protection rather than mere use. The 1992 ECE Helsinki Convention requires States to integrate the regimes of protection and uses.

Pursuant to the 1992 ECE Helsinki Convention, the nine riparian States of the Danube basin, Austria, Yugoslavia (Serbia & Montenegro), Croatia, Germany, Hungary, Moldavia, Romania, Slovakia and Ukraine, as well as the European Community, signed the 1994 Convention on Cooperation for the Protection and Sustainable Use of the Danube River (hereinafter referred to as the "1994 Danube Convention").[456] In line with the notion of Article 2(2)(c) of the 1992 ECE Helsinki Convention, Article 2 of the 1994 Convention provides that, "the parties agree to strive at achieving the goals of a sustainable and equitable water management, including the conservation, improvement and rational use of surface waters and ground waters in the catchment area as far as possible."

Article 2 of the 1992 ECE Helsinki Convention not only defines transboundary impact but also sets "best efforts standards" concerning application of appropriate measures.[457] Another convention, which was adopted pursuant to the 1992 ECE Helsinki Convention, is the 1998 Convention on the Protection on the Rhine.[458] Parties to this Convention are Germany, France, Luxembourg, the Netherlands and Switzerland, as well as the European Union.

In the current riparian State treaty practices of European international watercourses, it is apparent that the principles of equitable utilization and sustainable development are recognized as substantive principles, which

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[453] Agreement on the Protection of the Meuse, April 26, 1994, between France and Netherlands with Flanders, Wallonia and Brussels - Capital Region, 34 *ILM*, 1995, p.854. Agreement on the Protection of the Scheldt, April 26, 1994, between France, the Netherlands and Belgium, 34 *ILM*, 1995, p.859.

[454] See, 34 *ILM*, 1995, p.859.

[455] An early European case is *Aargau v. Zurich* see, *Recueil Official des Arrets du Tribunal Federal* IV, 34 (1878). The 20th century cases are *the Donauversinkung Case, Wuttemberg* and *Prussia v. Baden* see, *Annual Digest* 1927- 1928, Case No. 86; and *Societe Energie Electrique du Littoral Mediterraneen v. Campagnia Impress Elettriche Liguri* see, *Annual Digest* 1938-1940, Case No.47.

[456] See<http://www.internationalwaterlaw.org/>(visited Nov.11, 2004).

[457] See, 32 *ILM*, 1992, p.1312.

[458] See<http://www.internationalwaterlaw.org/> (visited Nov.11, 2004).

have found expression in the two important framework conventions on international/transboundary watercourses. In line with the 1992 ECE Helsinki Convention, the 1994 Meuse and Scheldt Agreements[459] include the precautionary principle,[460] which means preventive action,[461] containment and reduction of pollution at source,[462] and the polluter pays principle.[463] The 1994 Danube Convention also includes the polluter pays principle and the precautionary principle as measures aimed at protecting the Danube River from environmental degradation.[464]

The latest Rhine Convention has incorporated not only the goals of the protection of watercourses, but also the guiding principles to achieve these goals (Articles 3 and 4).[465] An important objective of the Rhine regime is to protect the North Sea against the negative effects of the river waters. A similar program was started for the protection of the Moselle River, the Saar River and Elbe River.[466]

Article 3 provides for goals, principles and obligations to preserve organisms and species diversity and protection against contamination of such organisms by hazardous substances. It further provides for preserving, improving and restoring the natural function of the stream; ensuring the flow characteristics, taking into account the natural bed-load discharge and favoring the interactions between river, groundwater and alluvial area; maintaining, protecting and reactivating alluvial areas as natural floodplains. In addition, Article 3 provides for principles and goals, maintaining, improving and restoring natural habitats for wild animals and plants in the water, on the river bottom and river banks as well as in adjacent areas, including the improvement of living conditions for fish and the restoration of their free migration; ensuring an ecologically sound and rational management of water resources; taking into account ecological requirements of water bodies, e.g. in the field of flood protection, shipping and the use of hydroelectric power.

Apart from the above mentioned aspects in elaborating the concept of sustainable development of international watercourses, Article 3 of the 1998 Rhine Convention further ensures the use of Rhine water for drinking water purposes and improvement of the sediment quality in order to enable the disposal of dredged material without causing any harm. It adopts a holistic approach in flood prevention and protection, taking into account ecological requirements.

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[459] See, 34 *ILM*, 1995, p.854, and 34 *ILM*, 1995, p.859.
[460] Article 3(2)(a).
[461] Ibid, Article 3(2)(b).
[462] Ibid, Article 3(2)(c).
[463] Ibid, Article 3(2)(d).
[464] *YIEL* 1994, Doc. 16.
[465] See<http://www.internationalwaterlaw.org/>(visited Nov.11, 2004).
[466] Following the 1976 Convention for the Protection of the Rhine against Chemical, and the 1976 Convention for the Protection of the Rhine from Pollution by Chlorides, Action Program was developed for the Protection of the Rhine Against Pollution in the 1987.

Ever since the admission of *free traffic* concerning the navigational use of the Rhine River in 1804 to the late 1990's, the evolution of the legal regimes of the Rhine concerning navigational use, non-navigational use and environmental protection have come a long way.

The integrated legal regime established by the 1998 Rhine Convention recognizes the need for the sustainable development of the Rhine ecosystem. It prohibits discharge of dangerous substances into water aiming at insuring drinking water and protecting the diversity of the population of organisms and species. It emphasizes the natural function of the river including natural habitats for wild animals and plants in the water. It not only focuses on the environment but also on the ecological requirements when technically developing water bodies, e.g. in the field of flood protection, shipping and the use of hydroelectric power. The Rhine regime adopts a holistic approach to flood prevention, taking into account ecological requirements, and restoration of the North Sea in accordance with other measures aimed at the protection of this marine area. To achieve the above goals as mentioned in Article 3, the Parties of the 1998 Rhine Convention are required, under Article 4, to be guided by the principles:

> a) prevention; b) precaution; c) fighting environmental deteriorations at the source; d) polluter-pays principle; e) not increasing adverse effects; f) compensation for considerable technical interventions; g) sustainable development; h) application and further development of the Best Available Technique and of the Best Environmental Practice; and, i) not transferring environmental pollution into other environmental media.[467]

Article 4 includes prevention and precaution separately, though each of them may be complementary to each other. While the principle of prevention is generally understood to be measures of preventive actions as to the use of watercourses protection, the precautionary measures may include due diligence standards in the use, which also aims for protection. Article 4 includes the principle of combating environmental deteriorations at source, meaning point and diffuse sources. Point sources refers to industries and municipalities, and diffuse sources include agriculture and transport.

Article 3 and 4 together prohibit discharge of dangerous substances into water, aiming at ensuring a pure standard for drinking water. The principle of not transferring environmental pollution into other environmental media is considered as a guiding principle in Article 4 of the 1998 Rhine Convention. It combats cross media pollution, i.e. land air and water, aiming at the integrated management of international watercourses. The principle of sustainable development mentioned in Article 4 of the 1998 Rhine Convention relates to Articles 5 and 24 of the 1997 UN Convention

[467] Ibid.

on the Law of Non-Navigational Uses of International Watercourses, the framework convention defining sustainable use as an objective of equitable utilization.

With a view to achieving the goals according to Article 3 and taking into account the principles of Article 4, the Parties to the 1998 Rhine Convention under Article 5 enter into the following obligations: 1) to cooperate and mutually inform one another, in particular of the measures carried out on their territories aimed at protecting the Rhine; 2) to carry out international monitoring programs and analyses of the Rhine ecosystem within their territory agreed upon by the Commission and inform the Commission of the results; 3) to carry out investigations with a view to finding the causes and the responsible parties for pollution events; and 4) to take the necessary autonomous measures on their territory, ensuring at all events that;

> a) the discharge of wastewater liable to affect the water quality is subject to a prior discharge consent or is subject to generally obliging regulations fixing emission limits: b) the discharge of hazardous substances is gradually being reduced with the aim of not discharging such substances at all; c) the compliance with the discharge consents or general binding regulations and the discharge is subject to surveillance; d) the discharge consents or general binding regulations are regularly examined and adapted as far as allowed by considerable improvements of the development of the BAT or required by the state of the receiving body of water; e) regulations will, as far as possible, reduce the danger of pollution due to incidents or accidents and that emergency measures are taken; and f) technical interventions liable to considerably affect the Rhine ecosystem are subject to a prior consent with the necessary conditions or to generally binding regulations.[468]

Furthermore, the Parties to the 1998 Rhine Convention, under Article 5, enter into the following obligations: to take the necessary measures in their territory in order to carry out decisions taken by the Commission; and to immediately inform to the Commission and those Contracting Parties liable to be affected by any eventual incidents or accidents or by flooding to be expected according to the Rhine basin warning and alarm model coordinated by the Commission.[469]

The contents of Articles 3, 4 and 5 of the 1998 Rhine Convention as well as other conventions adopted by the riparian States of European rivers indicate that the obligation to cause no harm is an established practice which includes the protection, improvement and restitution of international watercourses. The protection of watercourses is recognized as a priority and the practice refers to the principle of equitable utilization and

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[468] Ibid.

[469] See<http://www.internationalwaterlaw.org/>(visited Nov.11, 2004).

the no harm rule on equal footing. The States' obligations to control and regulate the sources of pollution of transboundary environmental harm require adequate steps.

The latest development of the regimes of the uses and protection of European international watercourses is illustrated in the following table:

	ECE (1992)	Danube (1994)	Rhine (1998)
CA	*wea*	*wea*	*wea*
-idb	+	+	+
-iw	*twil*	*twil*	*twil*
-iw	+	+	+
SP	*eu*	*eu*	*eu*
-sd	*sd*	*sd*	*sd*
-nhr	+	+	+
-ie	ie	ie	ie
-pp	*pp*	*pp*	*pp*
-ppp	*ppp*	*ppp*	*ppp*
-dcd	+	+	+
IM			
-jc	*jc*	*jc*	*jc*
-ua	+	+	+
-pim	*pim*	*pim*	*pim*
-is	*is*	*is*	*is*
-ra	*ra*	*ra*	*ra*
-pup	*pup*	*pup*	*pup*
DS	*ad*	*ad*	*ad*

Independent variables: CA = Concepts and Approaches (*idb = international drainage basin*; *twil = transboundary watercourses and international lakes*; *iw = international watercourses*); SP = Substantive Principles (*eu = equitable utilization*; *sd = sustainable development*; *nhr = no-harm rule*; *ie = intergenerational equity*; *pp = precautionary principle*; *ppp = polluter pays principle*; dcd = *duty to compensate damage*); IM = Implementation Mechanisms (*jc = joint commission*; *ua = use allocation*; *pim = protection and improvement*; *is = information sharing*; *ra = reporting and assessment*; *pup = public participation*); DS = Dispute Settlement venues (*ad = adjudicatio*n; *a = arbitration*)

In contrast to the tables presented earlier, here the independent variables are inverted, so that they assume the position previously held by the dependent variables, and vice versa. This table illustrates that there has been a concrete development of the regimes of uses and protection of the European international watercourses, adopting an integrated approach. In the table, CA demonstrates that the 1992 ECE Helsinki Convention takes the wider ecological approach (*wea*) to international drainage basin, as do the 1994 Danube and the 1998 Rhine Conventions. These treaties have adopted the principle of equitable utilization (*eu)* as the SP, underpinning the other sub-principles, i.e. precautionary principle (*pp*), polluter pays

principles (*ppp*) and principles of intergenerational equity (*pie*). In addition, sustainable development (*sd*), no-harm rule (*nhr*) and duty to compensate damage (*dcd*) are embedded within the principle of equitable utilization (*eu)*.

A noteworthy aspect of these treaties is that the important issues of integrated management are defined, which are: use allocation (*ua*), protection and improvement (*pim*), information sharing (*is*), reporting and assessment (*ra*) and public participation (*pup*). Adjudication of dispute (*ad*) by courts or arbitration is also confirmed by these treaties. These are the model treaties of international watercourses as they have developed so far. They demonstrate the shift from a piecemeal use orientation toward the integrated management and sustainable development paradigm. In this paradigm, both the regimes of use and protection are treated on an equal basis.

4.8. Appraisal

The legal regimes of European international watercourses, as evidenced by the treaty practices of riparian States of Europe, could be summarized as follows.

Europeans used inland waters for industrial use as early as in 12th century. However, as far as the riparian State treaties are concerned, the regime of navigational use of European international river developed prior to the evolution of the regime of non-navigational uses. Rules relating to navigational use emerged in the riparian State treaty practice of Europe at the beginning of the 19th century, prioritizing navigational use against the other uses. Multilateral conventions began to contain provisions in the second half of the 19th century, regulating river fishing rather than the protection of fish. A few treaties signed in the first half of the 20th century contained general provisions concerning regimes of the waters of international rivers, but a majority of them dealt only with navigational use. The treaties signed in the post-World War II period contained a few provisions regulating water supplies, but no general regimes of the waters of international rivers.

The study of the development of the legal regimes of the European watercourse treaties testifies that pollution of international rivers was rarely addressed up until the 1950's treaties of Europe. A few treaties concluded after the 1950's contained provisions for the environmental protection of international watercourses, reflecting the increased awareness among riparian States and inviting further measures in the 1960's. They prohibited discharge of dangerous substances into water and established water quality objectives and standards for waste disposal.

However, it is only by the 1970's and the 1980's that a number of such treaties began to tackle specific pollutions such as chemical, chloride and thermal. The slow progress of the European attempts at harmonization, which started in the 1950's, finally culminated in the 1990's in the

integration of the regime of environmental protection and the use of international watercourses.

The European riparian State treaties examined in this study indicate a high degree of mutual cooperation for the harmonized management of international watercourses, and consent in resolving differences between the States. By the end of the 20th century, the European States' orientation to protection and uses of watercourses seems to have evolved in a combination of law and technology, i.e. in the combination of the use of best available technology and guidelines for best environmental practice.

European treaty practice also shows that the identification and the prohibition of discharges of polluting substances into the watercourses, succeeded in maintaining water quality to a certain extent. In the current European riparian State treaty practice, the conduct of the parties to an agreement is required to meet a particular standard regarding sustainable use (development), including the prevention and control of transboundary impacts of the watercourse use.

In summary, the riparian State treaty practices of Europe indicate the following trends in the application of the principles concerning the use and protection of international watercourses.

First, the 18th century riparian treaty practices of Europe recognized international rivers as boundaries. This became a customary rule of international law concerning boundary rivers. This has been a contribution of the European practice in the further development of the customary law followed by the riparians of the other continents. Second, by recognizing the concept of international river in the 1815 Congress of Vienna, the European practice further established the principle of freedom of navigation as the main element of the regime of navigational use of international river. This was also followed by the riparian States of the other continents. Third, in establishing the principle of equitable utilization and sustainable development, including polluter pays principle and precautionary principle, in the treaties from the 1970's to the 1990's, the European treaty practices have shaped the evolution of the regimes of international watercourses.

The riparian State treaty practice in Europe, i.e. the 1992 ECE Helsinki Convention in general, Article 5 of the 1977 Danube Convention, Article 2 of the 1994 Meuse and Scheldt Agreements in particular, addresses the issue of transboundary impacts. It contains rules on conduct of the parties in meeting the goal of equitable and reasonable use of international watercourses. These treaties establish the mechanism of cooperation to deal with the problems of environmental degradations. Articles 3, 4 and 5 of the 1998 Rhine Convention provide goals, principles and obligations, respectively, striking a balance between sustainable development and equitable use.

The important elements of an integrated management approach, as found in the latest treaties constituting the legal regimes of uses and

protection of the Rhine and Danube rivers, suggest a shift from use orientation to cooperative, harmonized management. However, success of this legal development depends upon its actual implementation.

CHAPTER 5: TREATIES RELATING TO ASIAN RIVERS

5.1. Introduction

Harmony with the natural cosmic order is the guiding principle that is reflected in the ancient religions throughout Asia,[470] which may have some connection with the philosophical approach to the use of natural resources and their protection in the societies of the region. Rivers were used for navigational purposes during the Indus valley civilization, with merchant ships sailing for trade purposes through the Indus River. During the time of the Mesopotamian civilization, in West Asia canals were built for water supply – a non-navigational purpose. In ancient China, irrigation was based on the concept of flexibility and equity, an early manifestation of the modern principle of equitable utilization of international watercourses.[471] In South Asia, rivers (e.g. the Ganges-Brahmaputra river) are regarded as holy waters, and natural resources are essential, sacred elements of life. At the time of the Indus valley civilization, canals were built from the Indus River for water supply and irrigation.[472] With this background, we will now focus on the evolution of the legal regimes of the international watercourses in Asia since the 19th century.

The earliest treaty concerning navigational use of an Asian international watercourse appears to be the 1858 Treaty of Aighoun signed by China and Russia, providing freedom of navigation only to the vessels of the two States on the Amur, the Sungari and the Ussuri rivers.[473] These are boundary rivers between China and Russia, used for navigational and non-navigational purposes.

In the legal arrangement of navigational use of Asian international rivers, there were issues regarding the commercial interests of the riparian States of Asia, as well as those of the European colonial powers. For example, in 1862, Great Britain obtained access of navigation to the Yangtse-Kzang River of China, which constituted a commercial waterway of the highest importance and gradually extended this access to the other European States under the "most favored nation clause."[474] From the point of view of the common interests of riparian and non-riparian States, this

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[470] All religions of the world preach similar ideas on the relationships between human and nature. Whether the principle of harmony with the natural cosmic order simply has had philosophical value in the respective societies or still is important at the present time in the domestic law of Asian States is outside the scope of the present study.

[471] While the concept of *flexibility* may be interpreted as relevant to the criteria of the principle of equitable utilization and no-harm rule, *equity* may be viewed as distinct from the principle of equitable utilization. The *equity* in its modern form is applicable in cases where watercourse use is equitable and reasonable, the watercourse State still "may have to compensate the affected State in an appropriate way as a part of the overall equitable balance of the benefits and harm." See also McCaffrey, 2001, p.377.

[472] Hawkes, and Woolley, 1963, p.607.

[473] Yu, 1991, p.991.

[474] Colombos, 1967, p.258.

arrangement is important. China is the sole riparian State of the Yangtse-Kiang River, not Great Britain. Still, both countries recognized the common interests of navigational use through the "most favored nation clause." Further, in 1898, the merchant vessels of the European powers were granted authorization to trade on the Yangtse-Kiang River at eight ports, and also to ship and unload goods, subject to special conditions at five non-treaty ports. Rightly or wrongly, the legal arrangement of rivers between the colonizing powers and their colonies shows the common interests on the Asian international rivers.

The 19th century development of the regimes of navigational uses of Asian international rivers clearly shows the common interests of riparian, and to a certain extent, non-riparian States (the colonial powers), in promoting freedom of navigation, commerce, transportation and communication, particularly among Asian States and the European colonial powers.

After the British colonization of South Asia, one of the first treaties regulating an Asian international river is the 1857 Treaty of Peace between the United Kingdom (on behalf of Afghanistan) and Persia (Iran).[475] This treaty concerned the non-navigational use of the Helmand River. In 1872, an arbitrator rendered his award, providing "that no works are to be carried out on either side to interfere with the requisite supply of water for irrigation on the bank of the Helmand."[476] The agreed terms of reference by the conferences of Afghanistan and Iran concerning distribution and use of the Helmand River included the establishment of the Helmand River Delta Commission.[477] Afghanistan and Iran agreed to regularize the Helmand waters through the Helmand River Delta Commission.[478] The Commission recommended that the parties respect existing water use, but subsequent negotiations between the two countries remained inconclusive. However, it can be said that the existing use or prior appropriation has not lost its importance in the modern evolution, the existing use being one of the criteria of the principle of equitable utilization of international watercourse law.[479]

Treaties concluded in the first half of the 20th century indicate a trend among Asian riparian States to cover issues other than navigation in the treaties. For example, certain regulation concerning fishing can be found in the 1913 Turco-Persian Delimitation Protocol between Great Britain, Russia, Persia and Turkey regarding the waters of the Shatt-el-Arab, then under Ottoman sovereignty, on the condition that "the rights, uses and customs

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[475] *A Collections of Treaties, Engagemens, Sanads Relating to India and Neighboring Countries*, Atichions, 1933, pp.24-35.

[476] *Agreed Terms of Reference by the Conferences of Afghanistan and Iran* 1950, *Report of the Helmand River Delta Commission*, Afghanistan and Iran, 1951, p.3.

[477] Ibid.

[478] *ST/LEG/SER.B/12*, Legislative series No.82.

[479] Articles 5, 6 and 7 of the 1997 UN Convention.

existing with regard to fishing from the Persian bank are in no way jeopardized."[480]

The riparian States of Asian international rivers elaborated upon the specifics of the non-navigational uses in the 1920's, including hydroelectric development and water use allocation for irrigation. For example, the 1920 Letter of Exchange between Nepal and British-India provides for the legal arrangement of hydroelectric development and water use allocation for irrigation concerning the Mahakali River.[481] This is Nepal's western border river with India in main parts and successive in other parts, also known as the Sarada River in India. The 1920 Letter of Exchange provided for water use allocation for irrigation among the parties, constructing the Sarada Barrage - one canal on the right bank of the Mahakali River, with 14000 cusecs water, for irrigation for India, and another canal on the left bank of the river, with 1000 cusecs water, providing irrigation for Nepal. Apart from water use allocation, the 1920 Letter of Exchange provided for hydroelectricity development with the construction of a power station at Utar Pradesh in India. In this transaction, Nepal provided 4,000 acres of its land for the construction of the Sarada barrage, exchanging an equal amount of land with India, which remains to this day an issue of contention between India and Nepal.

Some of the issues involving the use allocation, water sharing and hydroelectricity development are being dealt with presently through the legal arrangement between the two countries, while other contentious issues that pertain to the needs and interests, ranging from uses to protection, remain unsettled.[482] However, the 1920 Letter of Exchange demonstrates the progression of the regime of non-navigational uses, including details such as the amount of cusecs of water to be shared between the parties. This deal may not qualify as equitable utilization, taking into account all of the needs and interests of the parties at present, however it certainly provides details of the use allocation of international rivers at the time of the agreement. Such a detailed scheme of use allocation has been followed and achieved in other agreements between the two countries.

In the following, we will focus on the evolution of the legal regimes since the 1920's, focusing on the regimes of the Mekong River.

5.2. Mekong River

Just as with the British involvement in some Asian international rivers such as the Yangtse-Kiang River, France was for a time the controlling power with respect to the use and development of the Mekong River. The initial

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[480] *ST/LEG/SER.B/12*, Legislative series No.80.

[481] The case study of the Himalayan basin of South Asia will illustrate this.

[482] From 1920 to 1996, Nepal and India continued to recognize the 1920 Letter of Exchange as a valid legal instrument until the two countries signed the Mahakali Treaty in 1996, which is discussed concerning the Himalayan Basin.

agreements concerning the Mekong River dealt with questions of boundary demarcation, determining Siam's (Thailand) relationship with French colonial Indochina, governed in part by various commissions established to develop and oversee such agreements. France and Siam signed the 1926 Convention on commercial navigation on the Mekong, providing for the freedom of navigation on the Mekong boundary between Indo-China and Siam.[483] Almost 25 years later, Cambodia, Laos, Vietnam and France signed the 1950 Convention, which also provided for free navigation on the Mekong River in the territories of Cambodia, Laos and Vietnam, open to each of the parties on terms of equality. The 1950 Convention was supplanted by the 1954 Convention establishing the Mekong Commission and continued the terms agreed in the former Convention.[484] Just as Britain was anxious to secure freedom of navigation on international rivers within its sphere of influence in Asia, so was France in securing freedom of navigation on the Mekong River, in order to bolster its influence in Indo-China.

As with post-World War II Europe, mainland Southeast Asia was divided into two camps, i.e. communist and non-communist camps. After the withdrawal of French colonial forces from Vietnam in 1954, Vietnam was divided between North and South; North Vietnam established a communist government, supported by the Soviet Union and Peoples Republic of China. South Vietnam was set up with a non-communist government supported by the United States, which was determined to check further communist advances in Southeast Asia. In this equation, while Thailand remained entrenched in the pro-Western capitalist camp, Laos was embroiled in a civil war, with Vietnamese-backed communist forces on one side, and the United States-backed government in Laos (with Thai forces), on the other. Up until 1970, Cambodia attempted to remain neutral in the military conflict between the Soviet-backed North Vietnamese and the United States, South Vietnam, Laos and Thailand. As a result, territories in each of these countries remained outside the effective control of the national governments.

It is against this political background that the United Nations Economic Commission for Asia and the Far East (ECAFE) began to explore options for water resource development, with the goal of building dams on the Mekong River and creating a series of large reservoirs along the mainstream, to produce hydroelectric power, reduce flooding, and increase dry season flows for irrigation and improved navigation.[485] As a result of the national independence movements in the 1940's and early 1950's, the French withdrew from Indo-China in 1954, which paved the way for the independent States to conclude new treaties.

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[483] See, 125 *BFSP*,596.

[484] See, 72 *RGDIP*, 405.

[485] ECAFE was later named as the Economic and Social Commission for Asia and the Pacific (ESCAP).

The 1957 Statute of the Committee for Coordination of Investigations of the Lower Mekong Basin was signed by the riparian States of the Mekong River, Cambodia, Laos, Thailand, and the Republic of Vietnam,[486] set up in accordance with the decision of the Economic and Social Commission for Asia and the Pacific (ECAFE).[487] This cooperation was intended and directed toward multipurpose use and water resource development projects in the lower Mekong basin. Indeed, it was the first attempt in harmonizing the multiple uses of the Mekong River. This was one of the first plans of its kind aimed at harmonized management of the Mekong River. The 1957 Statute represents the first document for the Mekong regime of non-navigational uses in distinction with the 1926 Convention, which dealt with navigational use.

Since the People's Republic of China and Burma, the upper riparians of the Mekong, were not the members of the Mekong Committee, the term "Lower Mekong Basin" was used with reference to the lower riparian States. There were several reasons that China was outside the Committee, one of which being that, up until the late 1950's, the communist China (mainland) and nationalist China (Taiwan) were competing for a member of the United Nations, whereas Burma (Myanmar) was reported as not being interested in participating in the Committee.

The Nam Ngum Dam in Laos was the only major hydropower project constructed under the auspices of the Mekong Committee. This was developed in a tributary of the Mekong River, entirely within one riparian country, receiving funds from 10 countries including a loan of cement from Thailand. The dam still makes a major contribution to Laos' foreign exchange earnings, as most of the power generated is exported to Thailand.

Throughout the 1960s, the Mekong Committee was engaged in water resource investigation and planning, having limited success because of the regional conflicts. With the Communist victories in Laos, Cambodia and South Vietnam in the 1975, the Mekong development plans remained unimplemented (later, in 1979, prompted by Khmer Rouge attacks against Vietnamese villages along the Cambodian-Vietnamese border, Vietnam invaded Cambodia, installed a pro-Vietnamese government in Cambodia and maintained troops there to counter an insurgency whose various factions were supported by the United States, China and Thailand).[488]

The United States ceased all assistance to the Mekong regime following the end of the Vietnam War. In 1978, diplomatic relations among the countries was re-established. With assistance from the ESCAP, Laos, Thailand, and Vietnam signed the 1978 Interim Mekong Committee Declaration. The 1978 Declaration provided that "the functions of the

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[486] *ST/LEG/SER.B/12*, Legislative series, Treaty No.81.

[487] ECAFE, E/CN.11/475, February 25, 1958. E/CN.11/500, March 11, 1959, E/CN.11/513, January 11, 1960, and E/CN.11, /557 March 2, 1961.

[488] For more information concerning the development of the legal regime of the Mekong basin sees, Browder and Ortolano, 40 *NRJ*, 2000, p.499.

Interim Committee are to promote the development of water resources of the lower Mekong Basin" (hereinafter referred to as the "1978 Mekong Declaration"). [489]

During the 1980's, the Vietnamese and Thai water agencies were pursuing their own and potentially contradictory development plans. China had their own plans for the Mekong River. The relationship between Thailand and Laos deteriorated throughout the 1980s, with frequent border skirmishes between Thai and Lao troops, creating an acrimonious and non-productive situation. Thailand remained ideologically opposed to the communist regime in Vietnam and Laos. The Khmer Rouge regime of Cambodia was not inclined to join international organizations such as the Mekong Committee. The term "interim" was used in the hope that Cambodia would someday rejoin the Mekong regime. The 1978 Declaration retained provisions for readmitting Cambodia into the Mekong Regime in paragraph 3: "The present Committee will be succeeded by the Committee for Coordination of Investigations of the Lower Mekong Basin once all members of the latter Committee have decided to participate in that organization." This paragraph is ambiguous as to whether the constitutional documents of the Mekong Committee, namely the 1957 Statute and the 1975 Declaration, would still govern the Mekong regime when Cambodia was ready to rejoin. This became important in the early 1990's when Cambodia requested readmission to, and reactivation of, the Mekong Committee.

While the 1957 Statute mandated that the Mekong Committee "promote, coordinate, supervise and control the planning and investigation of water resource" projects, the 1975 Declaration extended the powers of the Mekong Committee to control the implementation of inter-basin diversions and projects on the mainstream and major tributaries. The 1975 Declaration called for the Mekong Committee to promote water resource projects-which meant that the Committee's role was to obtain assistance from donor countries. In 1978, an Interim Committee was established followed by a Revised Indicative Plan in 1987 (hereinafter referred to as the "1987 Plan"),[490] similar to the original scheme. In the period between the early Mekong plans and their resurrection in the Revised Indicative Plan, there was considerable discussion as to large dams and the environmental and the human rights implications of development projects. The Mekong regime survived, as a result of the neutral sponsorship of the UNDP and the donor assistance of European donors, especially the Nordic countries.

The Vietnamese presence and the civil war in Cambodia lasted until 1990, and as a result, relations between Thailand and Vietnam were strained. In the early 1990s, the Chief Executive of the Mekong Secretariat promoted plans for large-scale impoundments, and the Mekong plan was revised. This attracted the attention of environmentalists, including the

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[489] *The Mekong Committee: A Historical Account 1957-1989*, Mekong Secretariat 1989, pp.10-11.
[490] Ibid.

concern of downstream countries over the implications of large-scale upstream impoundments. During this period, the Mekong Secretariat revised the Mekong scheme, involving roughly the same amount of dams but at a reduced crest height and therefore with greatly reduced impact.

The 1957 Statute was amended by the Joint Declaration of Principles for Utilization of the Waters of the Lower Mekong Basin in 1975, which was amended by the Declaration Concerning the Interim Committee for Coordination of Investigations of the Lower Mekong Basin of 1978. In 1991, the UN helped broker the Cambodian Peace Agreement, ending the Cambodian civil war that had raged for over a decade, with a coalition government requesting readmission to the former Mekong Committee. A compromise plan was agreed upon in late 1992 by the four lower basin countries, Cambodia, Laos, Thailand, and Vietnam, to negotiate a new framework of cooperation for the Mekong regime, inviting the two upper basin States, China and Myanmar, to join at a later date. The UNDP helped to mediate the complex negotiations over two years. This was later succeeded by the 1995 Mekong Agreement, which encompassed the regimes of navigational use, non-navigational uses and environmental protection.[491]

The development of the legal regime of the Mekong River including the constituent elements, starting from the 1920's to the 1980's, can be illustrated in the following table.

	CA	SP	IM	DS
The 1926 Convention	*ir*	*fn*	-	+
The 1950 Convention	*ir*	*fn*	*mc*	+
The 1954 Convention	*ir*	*fn*	*mc*	+
The 1957 Statute	*lmb*	*mu*	*mc*	+
The 1975 Declaration	*lmb*	*mu*	*mc*	+
The 1978 Declaration	*lmb*	*mu*	*mc*	+
The 1987 Plan	*lmb*	*mu*	*mc*	+

CA = Concepts and Approaches (*ir* = *international river*; *lmb* = *lower Mekong basin*); SP = Substantive Principles (*fn* = freedom of navigation; mu = *multipurpose uses*; IM = Implementation Mechanisms (*mc* = *Mekong commission*); DS = Dispute Settlement venues (+ = adjudication)

This table illustrates that up until the conclusion of the 1957 Statute, the *ir* is the basic concept adopted by the parties concerning the navigational use of the Mekong River. In the colonial period, the freedom of navigation (*fn*) was the principle used for commercial purposes. In the 1957 Statute, for the purpose of non-navigational uses the parties adopted the basin approach. However, it was limited to the lower Mekong Basin (*lmb*), which means that the upper basin States, i.e. China and Myanmar, were still outside the agreement. Under the 1957 Statute the parties also established the Mekong

[491] See the case study of the Mekong River Basin.

Commission (*mc*), which has been restructured several times. The present form of the commission and the general regime (under the 1995 Mekong Agreement) is discussed separately in this study.

Now, we shall focus on the progression of the legal regimes since the 1950's with respect to other Asian international rivers. In the second half of the 20th century, a number of treaties regulating multipurpose use were concluded in Asia, in sharp contrast to the decades of the 1930's and 1940's, in which such treaties were non-existent. The treaties of the 1950's Asia, e.g. Nepal and India, and the Soviet Union and China, focused on use allocation, irrigation, hydroelectricity development and flood control measures.

5.3. Kosi and Gandak Rivers

The Kosi and Gandak are two of the many tributaries of the Ganges River, flowing from Nepal to India and through to Bangladesh, finally reaching to the Bay of Bengal. The 1954 Kosi River Agreement and the 1959 Gandak River Agreement have regulated the respective rivers between Nepal and India, including use allocation for irrigation and hydroelectricity.[492]

The 1954 Kosi Agreement provided for the construction of a barrage along the Kosi River, 3 miles upstream in Nepal from its border with India. This barrage included afflux banks, flood embankments, canals, powerhouses and communication lines. This also includes projects lifting up 400 cusecs of water from the Western Kosi canal for irrigation in Nepal. The Kosi project is located eight miles upstream of the town Hanuman Nagar in Nepal. The eastern canal in Indian Territory provides irrigation waters for India. Along the canals, at a distance of 11 km from the Kosi Barrage, a powerhouse provides electricity with a hydroelectricity powerhouse of 5000KW with the capacity of 4 units of 5000KW each to be shared equally by the Parties, and the Kosi project includes two irrigation canals. Under Clause 1(i) of the 1954 Kosi Agreement, Nepal provided the land for the project; India assumed the costs of the project.

Under Clause 1(ii) of the 1954 Kosi Agreement, Nepal authorized India to make the necessary facilities for the investigation of storage or detention dams on the Kosi or its tributaries, as well as with respect to the soil conservation measures such as check dams, afforestration, etc., required for a complete solution to the Kosi problem. This is, however, limited to the project area.

Clause 11 of the 1954 Kosi Agreement mentions fishing rights: "all the fishing rights in the Kosi River in Nepal except within two miles of the Barrage shall vest in the Government of Nepal. No fishing will be permitted within two miles of the Barrage and headworks."[493] This means that the fishing rights are recognized in the agreement, but an obligation for the Parties to protect fish is lacking.

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[492] *ST/LEG/SER.B/12,* Legislative text s Treaty No. 95, 96, respectively.
[493] Ibid.

Regarding the maintenance of natural flow of water, India retained the right to regulate all the supplies at the Kosi Barrage site. However, this right is limited. Nepal's right to withdraw water for irrigation and other purposes must, by terms laid out in the Kosi Agreement, be taken into consideration by India. According to the 1954 Kosi Agreement, Nepal is entitled to receive royalties which are not directly related to water, at rates settled by agreement concerning hydropower generation, use and compensation for resources, e.g. stone, gravel, soil and sand, including timber and forests products.[494]

Clause 2 of the 1954 Kosi Agreement, authorizes India to undertake surveys and investigations comprising of aerial and ground surveys, hydraulic, hydrometric, hydrological and geological surveys including construction of drill holes for surface and sub-surface explorations; investigations for communication and for materials of construction; and all other surveys and investigations necessary for the proper design, construction and maintenance of the barrage and all its connected works mentioned under the project[495]

Regarding the territorial sovereignty over the Kosi project area, Clause 5 of the 1954 Kosi Agreement provides:

> The Union [India] shall be the owner of all lands acquired by the Government [Nepal] under the provisions of clause 3 hereof which shall be transferred by them to the Union and of all water rights secured to it under clause 4 (i). Provided that the sovereignty rights and territorial jurisdiction of the Government in respect of such lands shall continue unimpaired by such transfer.[496]

According to this provision, Nepal retains its sovereignty over the land occupied by the Kosi project, and India's ownership over the project is recognized. Clause 6 of the 1959 Gandak Agreement, regarding ownership

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[494] Clause 6: (i) The Government (Nepal) will receive royalty in respect of power generated and utilized in the Indian Union at rates to be settled by agreement hereafter. Provided that no royalty will be paid on the power sold to Nepal; (ii) The Government shall be entitled to receive payment of royalties from the Union [India] in respect of stone, gravel and ballast obtained from the Nepal territory and used in the construction and future maintenance of the barrage and other connected works at rates to be settled by agreement hereafter; (iii) The Union shall be at liberty to use and remove clay, sand and soil without lot or hindrance from lands acquired by the Government and transferred to the Union; iv) Use of timber from Nepal forests, required for the construction, shall be permitted on payment of compensation. Provided no compensation will be payable to the Government for such quantities of timber as may be decided upon by the Government and the Union to be necessary for use on the spurs or other training works required for the prevention of caving and erosion of the right bank in Nepal. Provided likewise that no compensation will be payable by the Union for any timber obtained from the forestlands acquired by the Government and transferred to the Union.

[495] Ibid.

[496] *ST/LEG/SER.B/12*, Legislative text s Treaty No. 95.

of the Gandak project, provides the following: "All works connected with the project in the territory of Nepal will remain the property of and be operated and maintained by the Government of India."[497] The above-mentioned provision clearly indicates that India is the owner of the water project, which is in Nepali territory. Furthermore, Clause 11 of the same Agreement provides that:

> Nothing in this Agreement shall be deemed to derogate from the sovereignty and territorial jurisdiction of His Majesty's Government [Nepal] in respect to lands acquired by His Majesty's Government and made available to the Government of India for investigation, execution and maintenance of the project.[498]

In the 1960's, an issue concerning Nepal's sovereignty and India's ownership led to a conflict regarding the Kosi Project, which was resolved through the 1965 Lease Agreement, under which Nepal retained its sovereignty, but recognized the ownership of India. According to the Lease Agreement, India pays a nominal annual rent to Nepal.[499] In 1966, the parties extended the Lease Agreement for a period of 199 years from the date of signature.

The 1954 Kosi Agreement recognizes the navigational rights of the Parties. For example, Clause 10 of the 1954 Kosi Agreement stipulates, "all navigation rights in the Kosi River in Nepal will rest with the Government (of Nepal)." The use of any watercrafts such as boat launches and timber rafts, within two miles of the Kosi Barrage and headwork shall not be allowed except by special license under special permits to be issued by the executive engineer of the barrage. Unauthorized watercrafts found within this limit are liable for prosecution. However, Clause 10 does not as a whole include navigation on the Ganges watercourse.

"Not to prejudice the interests of each other" is accepted under Clause 4 of the 1954 Kosi Agreement, which provides for the right to regulate all the water flow of the Kosi River at the barrage site in India without prejudicing Nepal's right of water withdrawal for irrigation or other purposes. The revised Kosi regime established Nepal's right to withdraw waters from the Kosi and its tributaries for irrigation and other purposes. The revised agreement also eliminated the provisional agreement committing Nepal to

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[497] *ST/LEG/SER.B/12*, Legislative text s Treaty No.96.

[498] Ibid.

[499] In the proceeding of the writ petition *Neupane v.Prime Minister of Nepal Koirala*, Writ No. 1851 the Supreme Court of Nepal 1992. The land transfer through a lease agreement between Nepal and India is found in other transactions as well. For example, regarding the Janakpur -Jayanagar railway [the railway line between Janakpur of Nepal to Jayanagar of India], arrangement, that India has provided a land facility to Nepal on a permanent lease basis. The sovereignty and ownership belongs to India whereas Nepal is only entitled to use the land on the basis of lease. India pays in the local currency of Rupees 5 to Nepal per bigha and per year (bigha=0.6ha=1.67ac).

grant its consent to storage or detention dams and other soil conservation measures on the Kosi and its tributaries as necessary. Subsequently, India constructed the Chatra irrigation project to provide irrigation for Nepal, to compensate for the share of benefits from the Kosi project. In addition, the Kosi project is comprised of two pump houses, lifting 400 cusecs of water from the western canal to feed the main Kosi canal, which provides irrigation for Nepal. Clause 4 (ii) of the 1954 Kosi Agreement allocates, in equal parts, the percentage of the electricity produced to each party. Clause 1 of the 1954 Kosi Agreement aims at controlling floods. The provisions address "flood control, irrigation, generation of hydroelectric power and prevention of erosion of Nepal areas on the right side of the river, upstream of the barrage."[500] Clauses 2 (i) and 10 provide for soil conservation measures such as check dams and afforestration. The Kosi Barrage could not deliver the promised benefits, as the problems relating to the soil erosion were either ignored or failed to be prevented. The objectives of the Kosi Agreement as stated above are repeated in the Preamble of the 1959 Gandak Agreement. However, neither agreement contains any mechanism for supervision and implementation.

The 1959 Gandak Agreement, apart from the hydroelectricity generation, provides for the Gandak project, which includes two irrigation canals. India financed and constructed the canal projects. The western canal provides irrigation to an area of 40,000 acres, the eastern canal to an area of 103,500 acres. With India underwriting the costs of construction, Nepal constructed all those channels that discharged less than 20 cusecs. These canal systems and service roads, except the main western canal, was eventually handed over to Nepal, and whereupon they assumed operation oversight and maintenance, as well as the costs incurred in doing so.

According to Clause 8 of the 1959 Gandak Agreement, India is to construct a powerhouse with a capacity of 15,000KW in Nepal's territory. In return, Nepal will obtain a maximum of 10,000KW. The ownership and management of the powerhouse was, by agreement, transferred to Nepal after the full load of 10,000KW at 60% load factor was reached in Nepal.

An exchange of letters signed in 1964 by Nepal and India amended Clause 9 of the 1959 Gandak Agreement, providing Nepal the right to withdraw water for irrigation and other purposes, and restricting use of the Gandak waters during the dry season. A supplemental agreement in 1971 between Nepal and India provided 24.1m^3/s (850 cusecs) of water to Nepal through the canal at the India-Nepal border. The requirements of the Gandak irrigation project in cusecs can be found in Clause 9, describing the riparian rights.[501] Similar to Clause 4 of the 1954 Kosi Agreement, Clause 9 of the 1959 Gandak Agreement provides that:

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[500] *ST/LEG/SER.B/12*, Legislative text s Treaty No.95.
[501] Ibid, Treaty No.96.

> Nepal will continue to have the right to withdraw for irrigation or any other purpose from the River or its tributaries in Nepal such supplies of water as may be required by them from time to time and His Majesty's Government agree that they shall not exercise this right in such manner as is likely, in the opinion of the parties hereto, prejudicial to affect the water requirements of the Project as set out in the schedule annexed hereto.[502]

The 1959 Gandak Agreement and its supplemental agreement provide for the construction of a barrage at successive points on the Gandak River and the building of canals on both sides of their territory for irrigation. Clause 9 of the Agreement contains detailed provisions for the allocation of water for irrigation canal and powerhouse systems. This recognizes Nepal's right to withdrawal of water for irrigation purposes.

The two countries have collaborated on a series of water resource development-related projects, and are also engaged in longstanding disputes concerning the uses and protection of their shared watercourses, discussed in length separately in this study.[503] As to the Kosi and Gangak projects, however, there are contradictory remarks expressed by both sides. India claims it is being generous in its dealings with the Kosi and Gandak projects, while Nepal claims its needs have been overlooked. A recent research claims that Nepal's "benefits from the Kosi Project is illusory."[504] However, from the point of view of environmental protection, experts acknowledge that the impact on the local community and the environment was not taken into consideration by the project design. One of the criticisms leveled against the entire process is that alternative sites for the projects were not properly considered. An illustration of this point is the Chatra irrigation canal of the Kosi project.[505]

If the provisions of the existing treaties between Nepal and India are used properly, the solution of the environmental problems such as selecting project sites or dealing with flooding can be found; for example, like Clause 2 of the 1954 Kosi Agreement, Clause 1 of the 1959 Gandak Agreement contains provisions for survey, investigation and information collection. Other provisions of the existing treaties can be used to resolve the disputes between the parties. For example, the 1954 Kosi Agreement provides for arbitration settlement of water-related disputes between Nepal and India. According to Clause 17:

> If any question, differences or objections whatever shall arise in any way, connected with or arising out of this agreement or the meaning or operation of any part thereof or the rights, duties or liabilities of either

[502] Ibid.
[503] See, the case study of the Himalayan basin of South Asia.
[504] Slaman and Uprety, 2002, p.82.
[505] Thapa and Pradhan, 1995, p.203 and 213.

party, except as to decisions of any such matter as therein before otherwise provided for, every such matter shall be referred for arbitration to two persons-one to be appointed by the Government (Nepal) and the other by the Union (India) - whose decision shall be final and binding, provided that in the event of disagreement between the two arbitrators, they shall refer the matter under dispute for decision to an umpire to be jointly appointed by the two arbitrators before entering on the reference.[506]

Clause 12 of the 1959 Gandak Agreement provides for a similar type of settlement of dispute, as follows:

1) Any dispute or difference arising out of or in any way touching or concerning the construction, effect or meaning of this Agreement, or of any matter contained herein or the respective rights and liabilities of the parties hereunder, if not settled by discussion, shall be determined in accordance with the provisions of this clause;
2) Any of the parties may be noticed in writing inform the other party of its intention to refer to arbitration any such dispute or difference mentioned in sub-clause (1); and within 90 days of the delivery of such notice, each of the two parties shall nominate an arbitrator for jointly determining such dispute or difference and the award of the arbitrators shall be binding on the parties;
3) In case the arbitrators are unable to agree, the parties hereto may consult each other and appoint an Umpire whose award shall be final and binding on them.[507]

The Parties to the 1954 Kosi and 1959 Gandak Agreements have not yet availed themselves of this dispute settlement mechanism.

The respective regimes established by these two treaties from the 1950's can be illustrated in the following table:

	CA	SP	IM	DS
The 1954 Kosi Agreement	*ir*	*mb*	*jc*	*a*
The 1959 Gandak Agreement	*ir*	*mb*	*jc/co*	*a*

CA = Concepts and Approaches *(ir = international river*); SP = Substantive Principles (*mb = mutual benefit*); IM = Implementation Mechanisms (*jc = joint commission; co = coordination committee*); DS = Dispute Settlement venues (*a = arbitration)*

[506] *ST/LEG/SER.B/12,* Legislative text s Treaty No. 95.
[507] Ibid, Legislative text s Treaty No.96.

This table illustrates that the 1954 Kosi and the 1959 Gandak agreements adopt the international river concept (*ir*), aiming at mutual benefits (*mb*). It is apparent that these treaties are development-oriented, and therefore they take the piecemeal approach. These treaties also choose arbitration (*arb*) as the venue of dispute settlement. While the 1954 Kosi Agreement lacks an implementation mechanism, the 1959 Gandak Agreement provides for a coordinating committee (*co*) (this was not originally stipulated in the 1959 Gandak Treaty, but supplemented by a letter of exchange). A noteworthy aspect of these treaties is that use allocation is fixed, at least in principle. Provisions for survey, investigation and information collection are mentioned in the treaties. Adjustment procedures of the treaties are rigid, which is based on the negotiation between the parties.

An agreement of the 1950's, which creates a broader legal regime than that of the Kosi and Gandak regimes, is the 1956 Agreement between the Union of Soviet Socialist Republics and the Peoples Republic of China. This deals with joint research and operations concerning the natural resources of the Amur River basin and prospects for development of its productive potentialities, and on planning and surveying operations to prepare a scheme for multi purpose exploitation of the Argun River and the Upper Amur Rivers (the 1858 Treaty of Aighoun signed by China and Russia provided freedom of navigation only to the vessels of the two States on the Amur, the Sungari and the Ussuri rivers[508]). The use of the term "joint research and operations," delimiting natural resources, and the term "planning", preparing a scheme for multipurpose exploitation of the Argun River and the Upper Amur Rivers in the 1956 Treaty reflect the period of the 1950's when the relationship between the two countries was ideologically intimate. As the split between the Soviet and Chinese became more apparent the late 1960's, joint operation and planning of the river management became problematic.

As to the Euro-Asian rivers, it should also be noted that nearly after a century of the evolution of the regime of navigational use, the regime of the non-navigational uses also began to evolve. The regime of navigational use of the Amur, the Sungari and the Ussuri rivers began to evolve in the second half of the 19th century, and issues related to non-navigational uses continued to evolve via treaties concluded in the second half of the 20th century. Some issues related to the regime of environmental protection of the boundary rivers of Russia and China and the progression of the regimes in the last decade of the 20th century will be discussed later. Now, we will focus on the legal regimes as they evolved in the 1960's in South Asia.

[508] Yu, 1991, p.991.

5.4. Indus River

The evolution of the legal regimes of the South Asian rivers in the 1960's can be best illustrated with the case of the Indus River. The basin of the Indus River was partitioned between India and Pakistan (1947) when the two countries became independent from Britain, and Punjab was divided – the eastern part of Punjab into India and the western part into Pakistan. The canal system of Punjab was also divided into western and eastern Punjab, which became a source of dispute between the two countries concerning the use allocation of the Indus River. After the separation, while Pakistan wanted to maintain the existing use of the Indus River, India virtually cutoff the water supply to Pakistan in 1948, using the resulting surplus to increase its own use. Even though the Independence Act between the two countries established a Boundary Commission, the question of the Indus waters remained unresolved.

When the Indus water dispute arose, the Parties argued their water rights on the basis of two classical opposing points of view. While Pakistan asserted the principle of equity and international law, India agued exclusive jurisdiction over the management, control and utilization of the natural resources available in its territory. In other words, the arguments of the dispute were reminiscent of the 19th century theories of international watercourse law argued by the United States and Mexico concerning the Rio Grande River, discussed later in the chapter concerning the North American rivers and treaty practice.[509]

In the Indus River dispute, India argued the absolute sovereignty theory just as the United States did against Mexico concerning the Rio Grande River. Pakistan argued the absolute territorial integrity of the river just as Mexico did. At the same time, both India and Pakistan attempted a diplomatic solution of the Indus water dispute. A breakthrough resolving the Indus River dispute came with the mediation by the International Bank for Reconstruction and Development, providing technical and financial assistance. As a result, the Indus Water Treaty was signed by India and Pakistan in 1960 (hereinafter referred to as the "1960 Indus Treaty"),[510] aiming at a fair division of water, increasing of the amount of usable waters available in their respective territories, as well as measures to prevent pollution resulting from the water allocation.

Article 1(2) of the 1960 Indus Treaty defines the conceptual element adopted by the parties, in that the term tributary of a river is defined as "any surface channel, whether in continuous or intermittent flow and by whatever name called, whose waters in the natural course would fall into that river, e.g. a tributary, a torrent, a natural drainage, an artificial drainage,"(local names such as a *nadi*, *nallah*, *nai*, *khad*, *cho*). In this definition, the term tributary also includes any sub-tributaries or branch of

[509] This is one of the most controversial issues of the law of international watercourses.

[510] The 1960 Indus Waters Treaty between India and Pakistan see, *ST/LEG/SER.B/12*, Legislative text s Treaty No.97.

subsidiary channel, by whatever name, whose waters, in the natural course, would directly or otherwise flow into that surface channel. Thus, the 1960 Indus treaty seems to adopt the international river basin (*irb*) approach rather than the concept of international drainage basin (*idb*).

With the 1960 Indus Treaty, the Parties reached solution whereby India accepted to pay *equity* compensation in favor of Pakistan for the diversion of water in the Indian territory, but refused any recognition of the principle of equitable utilization (*eu*) as such. Article 11(2) stipulates that "nothing in this Treaty shall be constructed by the Parties as in any way establishing any general principles of law or any precedent," meaning that the parties could not regard it as evidence of the principle of equitable utilization. According to McCaffrey the two countries could presumably revert to their fundamental legal postures in any future water dispute which is not governed by the Indus Treaty. Baxter regards that despite the stated intention of the Treaty a provision of this nature cannot keep others from looking to the settlement as a precedent. Lipper, however, recognizes the precendential value of the Treaty.[511]

Even though the parties of the 1960 Indus Treaty deny the recognition of the principle of equitable utilization, with the development and subsequent universal recognition of the modern principle of equitable utilization, the Parties of the treaty are hardly in a position to deny the existence of the principle. This part of the treaty is clearly a matter to be adjusted in tune with the modern evolution of the regime of uses and protection of international watercourses.

Under the 1960 Indus Treaty, Pakistan acquired unrestricted use of all waters of the Jhelum and Chenab rivers in Indus basin. Similarly, India was granted unrestricted use of the Sutlej, Beas and Ravi rivers. An Annex to the Treaty provides for a division of the Indus basin into two separate systems including the above-mentioned rivers. Apart from defining several terms of importance such as "rivers" and "lakes," in Article 1, an important feature of the 1960 Indus Treaty is that paragraphs 9 and 10 of Article 1 define "agricultural use" and "domestic use" as consumptive use. Paragraph 11 of Article 1 defines consumptive and non-consumptive use, as follows.

> The term 'Non-Consumptive Use' means any control or use of water for navigation, floating of timber or other property, flood protection or flood control, fishing or fish culture, wild life or other like beneficial purposes, provided that, exclusive of seepage and evaporation of water incidental to the control or use, the water (undiminished in volume within the practical range of measurement) remains in, or is returned to, the same river or its Tributaries; but the term does not include agricultural Use or use for generation of hydro-electric power.[512]

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[511] See, McCaffrey, 1993, p.95; Baxter, 1967, pp.449-457; Lipper, 1967, p.35.
[512] *ST/LEG/SER.B/12*, Legislative text s Treaty No.97.

Articles 2 and 3 of the treaty requires the parties to respect Domestic Use and Non-Consumptive Use as defined in Article 1(11). The Treaty also appears to be the first treaty of South Asia addressing the issue of pollution control as criteria of reasonableness, thereby harmonizing water use allocation with the protection of an international watercourse.[513] In addition the treaty provides that:

> Each Party declares its intention to prevent, as far as practicable, undue pollution of the waters of the Rivers which might affect adversely uses similar in nature to those to which the waters were put on the Effective Date, and agrees to take all reasonable measures to ensure that, before any sewage or industrial waste is allowed to flow into the Rivers, it will be treated, where necessary, in such a manner as not materially to affect those uses: Provided that the criterion of reasonableness shall be the customary practice in similar situations on the Rivers.[514]

Dividing the Indus basin into two separate systems, three rivers in Pakistan and three in India, both parties seemed satisfied that they had maintained their rights over the watercourse as a whole. Along with the 1960 Indus Treaty, the legal arrangement included a loan agreement between the International Bank for Reconstruction and Development, India and Pakistan. The Bank was a Party to the Agreement, which provided a role for it to administrate the Fund. Other factors accounting for the success of the Indus regime may include the availability of water in the basin. However, in building the Indus legal regimes, the involvement of the International Bank for Reconstruction and Development seems to be crucial, along with the concurrent agreement establishing the Fund for the Development of the Indus Basin, including other donors, such as the United States, the United Kingdom, the Federal Republic of Germany, Canada, Australia and New Zealand.

The 1960 Indus Treaty establishes the Permanent Indus Commission, which is in charge of administrative and technical functions, providing a meeting point for the integrated management of the Indus basin. A specific provision is provided for in the treaty concerning dispute settlement. The Commission is the first decision-making body concerning any water disputes that may arise between the Parties. If it fails to settle the dispute, a neutral expert is brought in to handle it. If a neutral expert fails to resolve the dispute, it is to be referred to the governments, which will try to resolve the problem through negotiation. If mediation fails to resolve the dispute, there is a provision in the treaty for a Court of Arbitration to resolve disputes between the Parties. Despite tense relationships - ranging from issues arising from water resource development to cross border terrorism

[513] Article 4 (10) of the 1960 Indus Waters Treaty.
[514] Ibid.

to nuclear weapons – and general acrimony between India and Pakistan, the 1960 Indus Treaty appears to be respected by the Parties.

At present, India and Pakistan are in a dispute over the 450MW Baglihar Hydropower Project located in the Indian Kashmir on the Chenab River, which is to be completed by 2004.[515] Pakistan believes the project is being constructed in violation of the 1960 Indus Waters Treaty, and demanding an appointment of a neutral expert concerning the construction of the project. The attempts by the Permanent Indus Commission in resolving the issues concerning this project have been exhausted, according to Pakistan. India appears to be going ahead with the project, which could deprive Pakistan of more than 7,000 cusecs water per day. Pakistan is invoking Article IX (2)(a) of the 1960 Indus Treaty, for the first time, referring the dispute to the neutral expert.

According to the 1960 Indus Treaty, Pakistan has rights over waters of western rivers, i.e. Jhelum and Chenab of the Indus basin, while in the eastern Indus basin India has the water rights, including the Ravi, Beas and Sutlej rivers. Article IX (2)(a) further provides that if the neutral expert reaches the conclusion that there is a dispute, then a court of arbitration shall be set up upon agreement between the two parties to do so, or at the request of either party if that party feels that the dispute is unlikely to be resolved by negotiations or mediation, or if it feels (after one month) that the other party is unduly delaying negotiations. The relationship between the two countries has been tense, but the sanctity of the treaty has remained intact.[516]

The main elements of the regime and management paradigm established by the 1960 Indus Treaty can be illustrated in the following table:

	CA	SP	IM	DS
The 1960 Indus Treaty	*irb*	*eu*	*pic*	+

CA = Concepts and Approaches (*irb* = *international river basin*); SP = Substantive Principles (*eu* = *equitable utilization*); IM = Implementation Mechanisms (*pic* = *Permanent Indus Commission; ne* = *neutral experts*); DS = Dispute Settlement venues (+ = *adjudication*, *arbitration a*nd *negotiation)*

This table shows that the 1960 Indus Treaty has adopted the concept of international river basin (*irb),* which in this case can be construed as equivalent to the concept of international watercourse (*iw*). Article 1(2) of the 1960 Treaty does not take a hydrological approach in terms of the international drainage basin (*idb*); still the *irb* denotes a much wider approach than the traditional concept of international river (*ir*). The 1960

[515] Khaleeq, see *Dawn,* May 7, 2003, see<http://www.dawn.com> (visited May.8, 2003).

[516] The 1960 Indus Treaty, financially guaranteed by the World Bank, survived 1965 and 1971 wars between the two countries.

Indus Treaty clearly recognizes the principle of equitable utilization (*eu)* as the Substantive Principle (SP). However, it also clearly stipulates that nothing in this treaty shall be regarded as evidence of the principle of equitable utilization.

Given the international endorsement of the principle of equitable utilization (*eu)* as the Substantive Principle (SP) of the uses and protection of international watercourse in the 1990's, it will be difficult for the parties of the 1960 Indus Treaty to deny the existence of the principle. This table illustrates that the 1960 Indus Treaty established the Permanent Indus Commission (*pic*) as an institution. Dispute Settlement (DS) venue is also clearly stated and elaborated by the 1960 Indus Treaty: the permanent Indus Commission (*pic)* is the first decision-making institution; if the *pic* fails to resolve a dispute, it should refer the dispute to a group of neutral experts (*ne*); if the neutral experts (*ne)* also fails to resolve the dispute, the matter should be referred to the governments and they should find a negotiated settlement; if the two government fail to resolve the dispute, it should be referred to arbitration.

The 1960 Indus Treaty is the most innovative treaty of the 1960's, which was negotiated on the basis of the needs of the parties, adopting a harmonized model that is workable even between rival parties such as India and Pakistan.

Apart from the 1960 Indus Treaty, other treaties concluded in the 1960's in South Asia demonstrate that the traditional customary water boundary lines - the middle channel of non-navigational and the deepest channel of navigational rivers - have been incorporated in Asian State treaty practice. For example, the 1961 Nepal-China Boundary Treaty recognizes the *watershed line* of Mount Everest as the boundary line between the two countries. In the 1960's, the ILA, in defining international drainage basin recognized the *watershed limits* of the system of waters, including surface and groundwaters flowing into a common terminus.[517] The ILA's definition of an "international drainage basin" may have influenced the 1961 Nepal-China Boundary Treaty, recognizing the watershed line of Mount Everest. As to the river boundary, it is relevant to note that according to the 1963 China-Pakistan Boundary Agreement, the Parties agreed to delimit the water boundary lines so that:

> 1) wherever the boundary follows a river, the middle line of the river bed shall be the boundary line and that (2) wherever the boundary passes through the Dana (Pass), the water-parting line thereof shall be the boundary line between the two countries.[518]

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[517] Article IIof the 1966 ILA Helsinki Rules, *Report of the ILA Fifty-Second Conference*, Helsinki, 1966, pp.485-532.

[518] Articles 1, 2 and 3 of the Boundary Agreement signed by China and Pakistan in Peking on March 2, 1963 see, 3 *ILM*, 1963, p.541.

The term *thalweg* was used at the 1797 Congress of Rastadt recognizing the middle channel as the riparian State boundaries in Europe, a concept which seems to be reinforced in the 1960's by the riparian State treaty practices of Asia.

The further development of the regimes of Asian international rivers in the 1970's may be viewed through the work of inter-governmental organizations as well as with riparian States treaties. In the early 1970's, the Asian-African Legal Consultative Committee (AALCC),[519] which is an inter-governmental organization of Asian and Africa States, realized the need for development and codification of the law of international water resource management. This organization aims at multilateral efforts for promotion of cooperation across and between Asian and Africa States, including the development and codification of international law. In line with the principles developed in the 1960's by the ILA Helsinki Rules (1966), the Sub-Committee of the AALCC prepared Draft Propositions on the Law of International Rivers in 1973, recognizing the international drainage basin concept and the principle of equitable utilization.[520] This shows the recognition of the respective concept and principle in context to the use and protection of Asian and African international rivers.

5.5. Ganges/Ganga River

The legal regime of the waters flowing from India to Bangladesh, particularly the Ganges River, became the concern of the two countries with the latter's independence in 1971 from Pakistan. In the 1950's and the 1960's, Pakistan had opposed India's construction of the Farakka Barrage in West Bengal, about ten miles inside the Indian territory from its border with what was then East Pakistan. The barrage was not yet completed when the 1971 Indo-Bangladesh Friendship Treaty was signed, each side assuming that the Farakka Barrage question would be resolved through further cooperation. In 1972, the two countries set up the Indo-Bangladesh Joint River Commission for common use on a cooperative basis. Since its independence from Pakistan, Bangladesh opposed the construction of the Farakka Barrage.

India initially maintained that the Ganges was not an international river, but an Indian or at least an overwhelmingly Indian river, claiming that 90% of the length of the main channel of the Ganges flows, and 99% of the catchment area with 91.5% of the irrigation potential, lies in its territory.[521] India was eventually willing to discuss the matter with Bangladesh, insisting however that since the Farakka Barrage is located within its

[519] The Asian-African Legal Consultative Committee was formed in 1956. It was granted observer status at the General Assembly in October 13, 1980. See Rengger and Campbell, 1995, pp.498-499.

[520] *Report of the African-Asian Legal Consultative Committee* 1973, which is referred to in *YILC*, 1982, Part I, p.87, paras IV and VII of the 1973 Declaration.

[521] UNGAOR 31st Session Special Committee 21st Meetings.

territory, the problem is technical and practical, not judicial. According to Bangladesh, the entire lean flow of the Ganges of 50,000 to 55,000 cusecs constituted its normal and basic requirements for irrigation, domestic and municipal uses, and any decrease would negatively effect irrigation, water supply, fishery production, groundwater tables and river navigation, as well as causing harm in the dry season flow of the Ganges.

After the barrage was completed in 1975, the two countries signed a short term agreement (hereinafter refereed to as the "1975 Agreement"),[522] allocating 11,000 to 16,000 cusecs in the lean seasons from the Ganges to the Hooghly River. This arrangement, from the India's point of view, was aimed at flushing silt and maintaining the flow of water for navigational use, which appears to be a consumptive rather than non-consumptive use, with the regulation of the flow of water at Farakka Barrage being for the improvement of navigational use. The 1975 arrangement between India and Bangladesh dealt with the issue of sharing the waters of the Ganges for the dry season (April 21 to May 31). Bangladesh received about 75% of the flow for the remaining part of the dry season for that year, while India received 25%.

This first legal arrangement established an allocation quantum of water to be released by India to Bangladesh at Farakka, and, second, the quantum of water withdrawn by India and released to Bangladesh in the ten-day periods during the dry season, from the first of January to the 31st of May of each year. This was an interim arrangement; the parties failed to reach a permanent agreement.

The mutual cooperation between India and Bangladesh was hampered after the assassination of the first President Sheik Mujibur Rahman of Bangladesh in 1975, who with the help of India had led the war of independence against Pakistan. As the internal politics of Bangladesh were unstable in 1976, India diverted water at Farakka without consulting its counterpart. As a result of the failure of negotiation with India, Bangladesh brought the matter before the UN General Assembly in 1976, insisting that the Ganges is an international river and the exercise of riparian rights are to be based upon Principle 21 of the 1972 UN Conference on Human Environment. Bangladesh argued for equitable utilization of the Ganges waters, demanding a fair share of its waters. Bangladesh also called upon India to refrain from causing further transboundary harm.

In its White Paper on the Ganges Water Dispute, Bangladesh described a number of negative environmental consequences resulting from the diversion of the Ganges waters at the Farakka Barrage. This includes pollution, negative hydraulic consequences on other rivers, and the reduction of groundwater levels, salinity intrusion and the reduction in agriculture and forestry productivity in the affected area. It should be noted that India had listed salinity in the water as one of the reasons for

[522] *Joint Bangladesh-India Press Release,* Dhaka/New Delhi, April 18, 1975.

building the Farakka Barrage. During debate before the UN General Assembly, India neither denied the international character of the Ganges nor claimed a right to dispose of the Ganges waters at Farakka as it pleases. Rather, it underlined the applicability of the principle of equitable utilization provided by the 1966 ILA Helsinki Rule.

A joint statement adopted by the Special Political Committee of the UN General Assembly stated that the Parties would negotiate a fair settlement. Subsequently, the two countries signed the Agreement on Sharing the Ganges's Waters in 1977 (hereinafter referred to as the "1977 Ganges Agreement"),[523] valid for a period of five years. Between 1975 and 1996, Bangladesh and India concluded four agreements on quantitative allocation of the Ganges waters. The present 1996 Ganges Treaty is the fifth.

For Bangladesh, irrigation is important during November to May, and for India, it is necessary to prevent siltation in the Bay of Bengal, for the continued navigational use of the river. At the same time, both are concerned with environmental issues. Despite the fact that navigational use of international watercourses is not considered a consumptive use, the Farakka Barrage provides for exceptions for water consumption that provides for navigational use, and in turn affects the non-navigational uses such as irrigation. Compared with the 1960 Indus Treaty between India and Pakistan, the legal arrangement between India and Bangladesh seems to recognize navigational use as a consumptive use. This is one of the exceptional rules developed in the 1970's and onwards concerning the Ganges River, pointing to the specificity and generality of the criteria that need to be taken into consideration in establishing the equitable utilization of international watercourses.

This agreement provided for the principle affixing the quantity of water to be released by India to Bangladesh at Farakka, and the withdrawal by India at Farakka, allocating during dry seasons 59 % of the total availability of the flow to Bangladesh and 41% to India. The 1977 Ganges Agreement provided for 80% of its share to Bangladesh during any ten-day period, irrespective of how low the flow might be during such a period.

During the first five years of the agreement, there was acrimony between the Parties as to the implementation, and there was criticism in the media in the West Bengal (India) and Bangladesh, each perceiving the arrangement as unfair. After the expiration of the 1977 Ganges Agreement, the Indo-Bangladesh Memorandum of Understanding was reached in 1982 (hereafter referred to as the "1982 MOU "),[524] lasting only three years, further extended in 1986 and 1987 and finally expiring in 1988,[525] thus the collapse of the legal regime of the Ganges River that had evolved since the 1970's. As to dispute settlement venues Article VI of the 1977 Ganges Agreement, which remained ineffective for eight years, provided that:

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[523] See, 17 *ILM*, 1978, p.103.
[524] See, 36 *NRJ*, 1996,pp.460-461.
[525] Ibid.

> Any differences or dispute arising in this regard, if not resolved by the Joint Committee, shall be referred to a panel of an equal number of Bangladeshi and Indian experts nominated by the two Governments. If the differences or dispute still remain unresolved, it shall refer to the Governments that shall meet urgently at appropriate level to resolve it by mutual discussion and failing that by such other arrangements as they may mutually agree upon.[526]

Article VI of the 1977 Ganges Agreement was a scheme of the India-Bangladesh Joint Commission in order to carry out investigations and studies relating to the Ganges River. The panel of experts constituted under Article VII could not successfully perform their role in reaching a settlement. The decade of the 1980's was marked by deadlock between India and Bangladesh concerning the issues related to water resources, enmeshed with other bilateral issues. In the 1980's, multiple uses and the protection of international watercourses appeared on the agendas of environmental and developmental debates throughout the world.

Both India and Bangladesh suffered not only from the environmental degradation but also from the lack of agreement as to their shared watercourses.

After years of deadlock between the parties, the treaty between Bangladesh and India on Sharing the Ganges Waters at Farakka 1996 (hereinafter referred to as the "1996 Ganges Treaty")[527] provided for the quantum formula of the release and withdrawal of water at Farakka by updating the 1977 Ganges Agreement (provisions of the 1996 Ganges Treaty are discussed later in this study). The constituent elements of the legal arrangement of the Ganges River, starting from the 1970's to the 1980's, are illustrated in the following table:

	CA	SP	IM	DS
The 1975 Agreement	*ir*	*ua*	*jc*	*neg*
The 1977 Ganges Agreement	*ir*	*ws*	*jc*	*neg*
The 1982 MOU	*ir*	*ws*	*jc*	*neg*

CA = Concepts and Approaches (*ir* = *international river*); SP = Substantive Principles (*ua* = *use allocation; ws* = *water sharing*); IM = Implementation Mechanisms (*jc* = *joint commission*); DS = Dispute Settlement venues (*neg* = *negotiation*)

This table illustrates that the legal arrangement of the Ganges River, during the decades of the 1970's and the 1980's, was based on the international

[526] See, 17*ILM*, 1978, p.103.

[527] Bangladesh-India Treaty on Sharing of the Ganges Waters at Farakka, December 12, 1996 see, 36 *ILM*, 1997, p.519.

river *(ir*) concept. As mentioned in the above section, India initially was not ready to recognize the Ganges River as an international river, claiming it as an Indian river. However, at the UN General Assembly debate in 1976, India not only recognized the international character of the Ganges, but also recognized the principle of equitable utilization.

The 1970's development of the legal regimes of the Ganges River shows that the scope of application of the treaty, in terms of concepts and approaches, is an important element in the management of the internationally shared waters by riparian States. In the 1975 Agreement, the fixed water use allocation (*ua*) became to the prime concern of the parties. In the 1977 Agreement, it does not specify any Substantive Principle (SP) as such. However, in its Preamble, the 1977 Treaty states that "being desirous of finding a fair solution of the question before them, without affecting the rights and entitlement of either country other than those covered by this agreement, or establishing any general principles of law or precedent." Within its three main headings, the 1977 Agreement provides for the principles of water sharing, long-term arrangements, review and duration.

One noteworthy aspect of the 1977 Agreement is that the Indo-Bangladesh Joint River Commission *(jc)* is responsible not only for the implementation of the agreement but also for the settlement of disputes. Another noteworthy element is that the 1977 Agreement includes provisions of dispute settlement similar to those in the 1960 Indus Treaty. Negotiation between the governments of India and Bangladesh was the ultimate means of resolving the water dispute, which proved difficult (especially between 1988 and 1996). The 1977 Ganges Treaty does not provide for arbitration like the Kosi and Gandak Treaties of the 1950's and the 1960 Indus Treaty.

5.6. Treaties in the 1990's

Just as with the riparian State treaty practices of Europe, the riparian States of Asia demonstrated in their treaty practices of the 1990's a widening of the scope of water uses, ranging from navigational to non-navigational uses, increasing concern about the environmental protection of international watercourses, including maintaining water quality and combating waterborne diseases. Still some international watercourses in Asia lacked legal arrangements.

In the early 1990's, the long standing question of the use allocation of the waters of the Jordan-Tigris-Euphrates Rivers became the focus of a legal arrangement between the respective riparian States of the West Asian region. This is related to the fact that the Jordan-Tigris-Euphrates Rivers, which originate in Turkey, have limited water flows compared with the immense water needs of the riparian States.

Despite the fact that there are more than two riparian States sharing the Jordan-Tigris-Euphrates Rivers, a bilateral agreement the 1990 Syrian-Iraqi Agreement on the Utilization of the Euphrates Waters was concluded in the

early 1990's. This is a piecemeal bilateral arrangement, as is the 1987 Agreement between Jordan and Syria for the Utilization of the Waters of the Yarmuk River. With the (1987) Treaty, Jordan and Syria developed plans for a "Unity Dam," which did not materialize due in part to the rise of regional conflicts in the early 1990's. Further development of the legal arrangements of the Jordan-Tigris-Euphrates Rivers remains part and parcel of the regional conflicts. For more than 30 years, Turkey has been building the giant Southeast Anatolia Project, commonly known by its Turkish initials "GAP", which includes 19 hydroelectric power stations and 22 dams, built across both the Tigris and Euphrates rivers.

Since the 1990's the UK government has been supporting the Turkish dam project over the Euphrates River, which is located in the Kurdish area in Turkey. Given the context of the newly installed Iraqi regime, the future management and use allocation and protection of the Tigris-Euphrates River will be subject to fresh debate in the coming years or decades. While Turkey, a member of the North Atlantic Treaty Organization (NATO) and a candidate for the EU membership, provides water to Israel, it does not seem to recognize the water rights of its neighbors, arguing that "neither Syria nor Iraq can lay claim to Turkey's rivers any more than Ankara could claim their oil. This is a matter of sovereignty. We have a right to do anything we like."[528] To date, there is no comprehensive agreement between Turkey, Syria and Iraq over the Tigris-Euphrates River. The situation in this part of West Asia, known as Asia Minor, demands a harmonized regime of its international watercourses.

The 1994 Israel-Jordan Peace Treaty deals with issues concerning the use of the Jordan River, but lacks a basin-wide approach.[529] This Treaty has adopted the "not to cause significant harm" as a substantive principle, thereby protecting the existing use.[530] According to this Treaty, the "no-harm" and "equitable utilization" principles are to be used on a case-by-case basis. Annex II of the Treaty provides that:

> 1) Israel and Jordan undertake to protect, within their own jurisdiction, the shared waters of the Jordan and the Yarmuk Rivers and Arava/Araba groundwater, against any pollution, contamination, harm or unauthorized withdrawals of each other's allocation, 2)….
> 3) Israel and Jordan will each prohibit the disposal of municipal and industrial wastewater into the courses of the Yarmuk and the Jordan Rivers before they are treated to standards allowing their unrestricted agricultural use.[531]

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[528] This argument is often made by upper riparian States, which has lost its value in modern times.See<http://news.bbc.co.uk/hi/english/audiovideo/programs/correspondent/newsid_946000/94691s>.
[529] Treaty of Peace between Israel and Jordan, October 26, 1994, 34 *ILM*, 1995, p.43.
[530] Articles 1(2)C, 3(1)(6), 4,5(2), and 6(2) including Annex II of the Agreement.
[531] Ibid.

This is a part of an integrated attempt to resolve the ongoing conflicts in the Middle East, including the conflicts of sharing and allocation of common water resources. Article 6 and Annex 2 of the above mentioned treaty deals with the use allocation of waters and the rights and duties of both States in relation to the surface and groundwater resources. It provides for the allocation of waters depending on the seasons, clearly prohibits the detrimental use of such shared resources, and safeguards against pollution and contamination of the waters. Article 6(2) of the 1994 Treaty of Peace between Israel and Jordan provides that:

> The Parties, recognizing the necessity to find a practical, just and agreed solution to the water problems and with the view that the subject of water can form the basis for the advancement of cooperation between them, jointly undertake to ensure that the management and development of their water resources do not, in any way, harm the water resources of the other Party.[532]

This provision aims for a political solution of shared water resources, requiring cooperation and compromises between the Parties. In the Middle East, shared water resources are not only a matter of protection and uses but also one of the agendas for peace and stability in the region. In the *Middle East Peace Process* (Oslo 1993), transboundary water was an important agenda item to be resolved by the Parties. Under the Camp David Agreement (1978), Egypt offered to Israel an amount of 400 million cubic meters of fresh water per year in exchange for a Palestinian solution. In its Annex III, the 1993 Declaration of Principles of Interim Self-Government Arrangement between Israel and Palestine Liberation Organization established a Continuing Committee for Economic Cooperation provides for the two sides to reach an equitable utilization of joint water resources.[533] Under the 1995 Agreement between Israel and the Palestinian Authority,[534] the State of Israel has agreed to increase the water share of the Palestinians. The right of Palestinian self-determination and the question of Israeli-Palestinian water resource sharing remains unresolved. There are, however, clear rules concerning the need for protection of water resources and water installations in times of armed conflicts, and obligations of the occupying powers towards the people in the occupied territory. This includes responsibility to provide safe water supplies to civilians.[535]

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[532] See, 34 *ILM*, 1995, p.59.
[533] See, 32 *ILM*, 1995, p.1537.
[534] Declaration of Principles on Interim Self-Government Agreement, September 13, 1993, Israel-PLO, 32 *ILM*, 1993, p.1525.
[535] See, the ILA's 1999 Campione Consolidation, Chapter VII, Articles 37-44.

Another relevant Asian treaty is the 1993 Aral Sea Agreement aims to take joint actions in combating problems of the Aral Sea and its coastal area.[536] This Agreement is also aimed at the improvement of the environment and social and economic development by rational utilization of land and water resources. Restoration of the water flow into the Aral Sea is vital in order to bring the ecology of the area up to an acceptable level. The Agreement has established the Inter-State Council of the Aral Sea, which is responsible to implement the provisions of the agreement.

Another important development of the 1990's in Asia is the 1994 China/Mongolia Agreement, which deals with the tranboundary waters, and includes the issues of the use and protection of such waters. Article 2 of the 1994 Agreement provides that:

> The two Contracting Parties should jointly protect the ecological system of transboundary waters and develop and utilize transboundary waters in such a way that should not be detrimental to the other side. Any development and utilization of transboundary waters should follow the principle of fairness and equitability without impeding any reasonable use of transboundary waters.[537]

The above-mentioned provision takes a wider ecological approach with regard to the transboundary watercourse between China and Mongolia. This prohibits the detrimental use of shared watercourses of States, and requires that one State shall not use its territory in such a way that causes damage to the other States.

The most important of the 1990's development in Asia is the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin.[538] A harmonized model of the legal regimes of navigational use, non-navigational uses and environmental protection of Asian international rivers, as it evolved in the 1990's, can be seen with the 1995 Mekong Agreement. More details are discussed separately.

As to sustainable development and equitable utilization, the riparian States' treaty practices in Asia are exemplified by the following. In terms of the priority of the protection of watercourses, such practices appear to be different from those of the European riparian States, where there is a parallel application of the principle of equitable utilization and no significant harm. This is not the case in the Asian riparian State treaty practices. For example, the 1995 Mekong Agreement does not refer to

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[536] See<http://www.internationalwaterlaw.org/> (visited Nov.11, 2004); Vinogradov, 1996, p.406.

[537] The 1994 Agreement concerning the Halaha River, Kerulen, Bo Nor Lake and Bulgan River (China and Mongolia), see 36 *NR*J, 1996, p.430.

[538] The Mekong River originates in Tibet and flows in a southern direction through South China, forming the border of Burma, Laos and Thailand. It also passes through Cambodia and the southern part of Vietnam, emptying into the Southern China Sea.

sustainable development as a priority to the protection of the environment with the parallel application of equitable utilization and sustainable development, as does the 1992 ECE Helsinki Convention and the 1998 Rhine Convention. Rather, it refers to a balance between resource development for a higher standard of living of the population, and conservation and enhancement of the environment. Article 2 states:

> To promote, support, cooperate and coordinate in the development of the full potential of sustainable benefits to all riparian States and the prevention of wasteful use of Mekong River Basin waters, with emphasis and preference on joint and/or basin-wide development projects and basin programs through the formulation of a basin development plan, that would be used to identify, categorize and prioritize the projects and programs to seek assistance for and to implement at the basin level.[539]

Regarding the protection of the environment and ecological balance, Article 3 sets goals: "to protect the environment, natural resources, aquatic life and conditions, and ecological balance of the Mekong River Basin from pollution or other harmful effects resulting from any development plans and uses of water and related resources in the Basin."[540] Unlike the European riparian State treaty practice recognizing sustainable development as an international responsibility, here it is recognized as a national objective to the Parties of the 1995 Mekong Agreement, an objective of equitable utilization accepted by the agreement.

In summarizing the 1990's treaties of all of Asia, and illustrating the development of the legal regimes and management paradigms, the varying situation in the continent and stages of the regimes need to be kept in mind. For example, in some cases, there are situations of deadlock in negotiations between the parties, which has hampered the further development of the regimes as well as the establishment of institutional management, e.g. the 1994 Israel-Jordan Peace Treaty, and the 1995 Agreement between Israel and the Palestinian Authority. In other cases, there are situations where there is the full-fledged development of the regimes of international watercourses including the attempt for integrated river management, e.g. the 1995 Mekong Agreement. Still, in other cases, the legal regimes are developing, e.g. the 1993 Agreement on the Aral Sea and the 1994 China/Mongolia Agreement. There are also situations where the regimes are still underdeveloped, e.g. the 1990 Syrian-Iraqi Agreement.

The legal regimes and management paradigm of the 1995 Mekong Agreement deserves a more profound examination. This is because it is a framework agreement of regional application, which includes the main

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[539] See, 34 *ILM*, 1995, p.864.
[540] Ibid.

constituent elements of the regimes of uses and protection and can be a model for other regions, especially for South Asia.

	The 1995 Mekong	The 1996 Mahakali	The 1996 Ganges
CA	*irb*	*ir*	*ir*
SP	*eu*	*es*	*ef*
-sd	+		
IM	*mc*	*jc*	*jc*
-ua	+	*ua*	*ua*
-pim	*pim*		
-is	*is*		
-ra	*ra*		
-pup	*pup*		
DS	+	*ar*	*neg*

Independent variables: CA = Concepts and Approaches (*irb = international river basin, ir= international river*); SP = Substantive Principles (*eu = equitable utilization*; *sd = sustainable development; es = equal share; ef = equity and fairness*); IM = Implementation Mechanisms (*mc = mekong commission; joint commission*; *ua = use allocation*; *pim = protection and improvement*; *is = information sharing*; *ra = reporting and assessment*; *pup = public participation);* DS = Dispute Settlement venues (+ = *adjudication; ar = arbitration; neg= negotiation*).

Here again, in contrast to the Asian treaty tables presented earlier, the position of the dependent and independent variables are inverted. This table illustrates that the 1995 Mekong Agreement adopts the concept of international river basin (*irb*), the principles of equitable utilization (*eu*) and sustainable development (*sd*). The agreement also establishes the Mekong Commission (*mc*) as the Implementation Mechanism (MC). In the Agreement, the use allocation (*ua*) and protection and management (*pm*) of the Mekong are legally defined, whereby the information sharing (*is*), reporting and assessment (*ra)* and the public participation (*pub*) are clearly stated.

The Mekong Commission (*mc*) is primarily responsible for the Dispute Settlement (DS). However, if the Commission fails to do so, it will have to refer the dispute to the governments for a negotiated settlement. The parties can choose any dispute settlement venue available under international law. Above all, the 1995 Mekong Agreement, balances between the navigational use, non-navigational uses and environmental protection.

Unlike the 1995 Mekong Agreement, which adopted the international river basin concept, the traditional international river concept is employed in the 1990's treaties in South Asia, e.g. Bangladesh-India Treaty on Sharing the Ganges Waters at Farakka 1996 (hereinafter referred to as the "1996 Ganges Treaty").[541] However, the 1996 Ganges Treaty does adopt the principle of *equitable water allocation*. The 1996 Mahakali Treaty between

[541] See, 36 *ILM*, 1997, p.519.

Nepal and India Concerning Integrated Development of the Mahakali River 1996 (hereinafter referred to as the "1996 Mahakali Treaty")[542] adopts the principle of *equal share* within the concept of international river.

Both of these treaties lack a harmonization between the regimes of use and protection. Article IX of the 1996 Ganges Treaty provides for the allocation of water between the Parties based on the principle of equity and fairness.[543] However, the Parties of the treaty are facing problems of practical implementation of the principles because of the flooding during the monsoon and scarcity during the dry seasons. Article 9 of the 1996 Mahakali Treaty provides for a guiding principle of equality, mutual benefit and no harm to either Party, although this treaty is focused on the integrated development of water projects rather than an integrated management.[544] Its Preamble refers to equal partnership as the substantive principle of the Treaty.

Dispute settlement provisions of the 1996 Ganges Treaties are the same as was in the 1977 Agreement, which means that negotiation between the parties remains the ultimate means for the resolution of disputes. The 1996 Mahakali Treaty has adopted the dispute settlement procedures in the same manner with the provisions of the 1954 Kosi and the 1959 Gandak treaties between the two countries. It means that arbitration is recognized as the venue for ultimate settlement of disputes between the parties. Whether it will be used or not is a different consideration. Both the 1996 Ganges and Mahakali treaties are discussed in length separately in the study.

5.7. Appraisal

The origin, development and present state of the legal regimes of Asian watercourses can be summarized as follows.

The first point indicating the evolution of the regimes may be the use of the terminology in Asian treaties identifying the watercourses. It is notable that, except for the 1995 Mekong Agreement recognizing the basin system as a single unit, the other Asian treaties have adopted the traditional international river concept. Lack of regulation of groundwaters in Asian treaty practices indicates a failure to take into account the entire hydrological approach to international watercourses.

The second point concerns the freedom of navigation. Even though the freedom of navigation appears to have been practiced in the second half of the 19th century on the rivers shared by China and Russia, it was British and French colonial powers that influenced the navigational use of several Asian rivers in the beginning of the 19th century, applying freedom of navigation. An example of this can be found in the Yangtze-Kiang and the Mekong rivers. Just as in Europe, the internationalization of rivers

[542] Ibid,p.531.
[543] Ibid, p.519.
[544] Ibid, p.531.

concerning navigational use or non-navigational use remained a matter of negotiation between the community of riparian States, rather than an independent legal principle of its own merit.

The third important point is the status of the principles of equitable utilization and sustainable development. The study shows that that the riparian States treaties are negotiated according to the specific situations of the watercourses and the needs of the respective riparian States. While under the 1995 Mekong Agreement the parties have adopted the principle of equitable utilization, the 1996 Ganges Treaty refers to the same principle in terms of equity and fair sharing. At the same time, the 1996 Mahakali Treaty adopts the equal share principle.

As to fishing and irrigational use of international watercourses in Asia, it should be noted that the regulation of fishing and irrigation were incorporated in the Asian treaties concluded at the beginning of the 20th century. The incorporation of provisions for the prevention of pollution, along with the water use allocation, is found in only a few treaties of the 1960's concerning the legal arrangements of non-navigational uses. It is only the 1995 Mekong Agreement that establishes a degree of harmonization of the legal regimes of navigational use, non-navigational uses and the regime of environmental protection.

Still, compared to the European riparian State treaty practice concerning the harmonization of the legal regimes of navigational use, non-navigational uses and environmental protection, with the exception of the Mekong, the legal regimes of the other Asian international rivers are in a less developed stage of evolution. Above all, Asian riparian States certainly need to adopt an assertive approach not only towards the prohibition of detrimental uses of water, including protection against pollution, but also use allocation of international watercourses.

There are several problems in Asia related to water resource management. For example, in the Middle East, the shared water resources are intimately linked with the peace and security of the region. The world's worst environmental disasters are taking place in the central Asian region.[545] Most of the Asian international rivers are being ranked as the most polluted rivers of the world. Because of fighting between Burmese government forces and Golden Triangle warlords, the Mekong River is being used as an artery for guerrilla activities and drug trafficking, as well as for migrants fleeing to Thailand. At the same time, the legal regime of the Mekong is being integrated with an eye towards navigation and tourism. South Asia, Asia Minor and the Middle East all require a more robust approach in establishing the regime of the use and protection of international watercourses.

[545] *CERFSU*, 1994, p.9.

CHAPTER 6: TREATIES RELATING TO AFRICAN RIVERS

6.1. Introduction

In pre-colonial times, water laws in the countries of the African continent, inhabited as they were by populations of different cultures and various economic activities, exemplified a pattern of stable core entitlements, protection from competition and the enforcement of a regime of sharing.[546] For example, water rights over pastureland belonged only to the population group who were indigenous to that land, and those who had dug wells and built dams acquired private water rights. Violation of the rules concerning water rights constituted a punishable offence in pre-colonial Africa; permission of the owner was necessary to use water. A well owner could refuse to give water to another man's cattle, but was bound to provide water for human personal use such as drinking.

There was a rigid protection of collective and individual water rights with flexible access. These examples of customary practices from different parts of Africa displayed a distinctive structure and relied on the maintenance of a specific set of social and economic relationships, underpinned by the purpose of the water uses.[547] After colonization, the water wells were used for a variety of other mining purposes, e.g. replacing a stable shared regime of water use with a competitive regime of water use. With the introduction of a new source of competition by the European colonial administrations, the existing legal system in many parts of Africa broke down, sparking violent uprisings.[548] Whether or not the colonial powers may have intended such conflicts in their African colonies is debatable, but such conflicts occurred irrespective of colonial intentions.

In post-independence Africa, water laws seem to have developed based on the models of the former colonial powers' water laws. For example, according to the South African Water Act of 1956, the government is empowered to control the withdrawal or limit the withdrawal of groundwaters.[549] No one is allowed to extract groundwater in Kenya in amounts larger than he or she could beneficially use, but no permit requirement for extraction is imposed except for groundwater conservation areas. Channeling or the diversion of surface water resulting in loss of over 20 % of the original amount is forbidden.[550] In pre-colonial Africa, national borders were not a matter of contention concerning international rivers. In colonial Africa, the European powers transplanted their principles of water law, including the freedom of navigation on international rivers.

In the following, we will focus on the development of the legal regimes of the African international watercourses since the 19th century with

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[546] Godana, 1985.
[547] Bois, 1994, pp.73-84.
[548] Ibid.
[549] Ibid.
[550] Teclaff, 1991, p.186.

particular focus on the Congo, Niger, Chad and Senegal rivers. This will be followed by a study on the Nile River and the legal regimes concerning the southern African rivers.

6.2. Major African Rivers and Colonial Treaties

Pre-colonial history of African States and their management of shared resources remain an under-researched subject of international law. However, colonial treaties concerning the major African international rivers, especially navigable rivers, created an early model for the subsequent development of the legal regimes. For example, as a colonial power, Portugal asserted its sovereignty over the Congo River in 1884 for the purpose of freedom of navigation, claiming to be the first to discover the river,[551] adopting the rule of capture.[552] Another colonial power, Great Britain, recognized Portugal's sovereignty on the banks of Congo River, which in return provided advantages to British merchants in the Congo trade through navigation. However, this was contested by other European powers, e.g. France and Germany.

The matter was taken up in the 1884 Berlin Conference,[553] which adopted the 1885 General Act of Berlin. The Act provided for the right of navigation for merchant ships of all nations on the basis of equality on the Congo and Niger rivers.[554] The 1885 General Act basically contained rules relating to the navigation on the Congo River in accordance to the 1815 Final Act of the Congress of Vienna, and created a commission similar to the Danube Commission thereby imposing the European model upon the legal regime of African rivers. The 1885 General Act provided rules for the Niger River similar to those set up for the Congo River, with the exception that the application of rules was confined to the riparian Powers rather than under the control of an International Commission.[555]

In 1890, Portugal opened the Zambezi River in accordance to the principles of the 1885 General Act after considering the arguments presented by Great Britain.[556] As to the Niger River, Great Britain did not adhere to the principle of equality of treatment for all flags. The 1894 regulation of the British Royal Niger Company required foreign vessels to submit to custom control and inspection. The equality of treatment of all flags was established only in 1898 with an agreement between Great Britain and France, as well as with a later agreement between Germany and France.

The colonial powers had not recognized the fishing rights of the local people in the continent of Africa until the end of the 19th century. Great

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[551] Colombos, 1967, p.248.
[552] Dainith and William, 1987, pp.3-4.
[553] Ibid.
[554] See, 76 *BFSP*, 4.
[555] Articles 26-34.
[556] See, 82 *BFSP*, 338.

Britain and France respected the fishing rights of the local people in 1893 with respect to the Tanoe River.[557]

However, the colonial powers were concerned with their sphere of influence in Africa, including water resources. The 1894 Agreement relating to the sphere of influence of Great Britain and the Independent States of the Congo in East and Central Africa, an Agreement between Great Britain and Belgium (the Independent States of Congo) was modified through a new agreement in 1906, with respect to the change of the water volume of Lake Albert.[558]

The European colonial powers continued to be involved in Africa well into in the 20th century, establishing legal arrangements for African rivers, whether it be for the control of water for navigational purposes or non-navigational uses such as fishing rights. For example, a convention signed by France and Spain in 1900 for the demarcation of French and Spanish possessions on the Sahara Coast and the Gulf of Guinea Coast, prohibited for the control of the use of the waters of the rivers Muni and Outamboni, with the exception of fishing.[559] The 1902 Treaty between Ethiopia and the United Kingdom provided limitations on the control of the waters by the upstream State in the case of the Blue Nile.[560] The 1904 Convention between Great Britain and France regarding West and Central Africa recognized the fishing rights of the local population concerning the River Komadugu.[561]

The 1919 Convention of St.Germain-en-Laye, signed by Great Britain, France, Italy, the United States, Japan and Portugal,[562] revised the provisions contained in the 1885 General Act. Article 5 of the Convention superseded the 1885 General Act, and further provided that the freedom of navigation of the Niger River, "its branches and outlets as well as of the lakes situated within these territories, shall be entirely free for merchant vessels and for the transport of goods and passengers."[563] It was agreed that it would be applied to the signatory powers and Member States of the League of Nations on a footing of perfect equality.

One step in the development of the regime of non-navigational uses of African international rivers in the 1920's is the 1925 Exchange of Notes.[564] This is an agreement between the British and Italian Governments on the River Gash in Sudan and Eritrea, and deals with the utilization of water other than for navigation.

The 1926 Agreement between the Governments of the Union of South Africa and the Republic of Portugal regarding the Kunene River, involving

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[557] *ST/LEG/SER.B/12,* Legislative series Treaty No.17
[558] See, 99 *BFSP*, 173.
[559] See, 92 *BFSP*, 1014.
[560] See, 95 *BFSP*, 467.
[561] See, 97 *BFSP*, 31.
[562] See 8, *LNTS*, 26.
[563] See, 112 *BFSP*, 901.
[564] *ST/LEG/SER.B/12,* Legislative series Treaty No.28.

the then mandated territory of South West Africa, concerns irrigation and hydroelectricity production.[565] Under Article 2 of the 1927 Convention between Belgium and Portugal regarding the various questions of economic interests in the colonies of the Belgian Congo and Angola (Portugal), Belgium agreed to construct a dam for the production of hydro-electricity on the River M'Pozo.[566]

The 1929 Exchange of Notes between the Government of the United Kingdom and the Egyptian Government regarding the Nile River deals with irrigation.[567] This gave priority to non-navigational uses.

The 1930's legal developments pertaining to African rivers addressed the classic issues of boundaries, the domestic use of waters, fishing and the extraction of salt. The United Kingdom and Portugal recognized the use of waters for domestic use, fishing and the extraction of salt regarding the boundary waters between Tanzania and Mozambique.[568]

An agreement signed by Belgium and the United Kingdom in 1934 regarding the boundary waters between Rwanda-Brundi and Tangania defined water rights with respect to the use of waters of these rivers and streams, forming the boundary of Rwanda-Brundi and Tangania.[569] This demonstrates that up until the first half of the 20th century, European colonial powers were responsible for shaping the regime of the non-navigational uses of African rivers.

Regarding the regime of environmental protection, Article 3 of the 1934 Agreement is important to note. This Article prohibited operations of a mining or industrial nature, which pollute or cause deposits of any poisonous, noxious or polluting substances in the waters covered by the Agreement. This may have been the first written provision developing a regime of environmental protection of African international waters.

In the 1940's, few legal arrangements were made concerning water resource development of Africans rivers. One of them was related to Owen Falls situated between Egypt and Uganda. With the 1949 Exchange of Notes between the Governments of the United Kingdom and Egypt, both Parties agreed to the construction of a dam at Owen Falls in Uganda for hydroelectricity production.[570]

The number of legal agreement increased in the 1950's in regard to non-navigational uses of African international rivers. The 1950 Exchange of Notes between the governments of Great Britain, on behalf of Uganda, and the government of Egypt agreed to cooperate regarding meteorological and hydrological surveys in certain areas of the Nile basin,[571] including the

[565] Ibid, Legislative series Treaty No.29.
[566] Ibid, Legislative series Treaty No.3.
[567] Ibid, Legislative series Treaty No.7.
[568] Ibid, Legislative series Treaty No.30.
[569] Ibid, Legislative series Treaty No.4.
[570] Ibid, Legislative series Treaty No.9.
[571] Ibid, Legislative text s Treaty No.11.

riparian States, Ethiopia, Eritrea, Tanzania, Rwanda, Burundi, Kenya, Uganda, Zaire and the Sudan. The governments of Portugal and the United Kingdom agreed in the 1954 Exchange of Notes to establish joint cooperation for the production of hydroelectricity from the River Shire and Lake Nyasa in Mozambique.[572]

It is apparent in the colonial treaties that there was a competition among colonial powers in order to secure the freedom of navigation on navigable international rivers of Africa, and to establish as well as perpetuate their sphere of influence. Particularly, the 1894 Agreement relating to the sphere of influence of Great Britain and the Independent States of the Congo in East and Central Africa was very significant in that regard. Colonial treaties, starting from the 1885 General Act of Berlin (relating to navigational use) to the 1949 Exchange of Notes between Great Britain and Egypt (concerning irrigation from the Nile River) include both the regimes of navigational use and non-navigational uses. One noteworthy aspect of colonial treaties is that in the case of the Nile, irrigation was prioritized over navigation. However, colonial treaties generally had prioritized the navigational use over the non-navigation uses of African international rivers.

There were colonial treaties from the first half of the 20th century which regulated the non-navigational uses of African rivers, e.g. the 1926 Agreement between South Africa and Portugal regarding the Kunene River and the 1929 Exchange of Notes between the UK and the Egyptian Governments. These treaties were based on the narrow concept of international river and the principle governing the use of such rivers was the freedom of navigation, which was secured by and through colonial administrations. The freedom of navigation as such was based on the 1815 Final Act of the Congress of Vienna.

6.3. Nile River

The Nile, a north African River, flowing across 2.9 million square kilometers of territory of the northeastern African States, has the two branches, the Blue and White Nile. Most of the source of the Nile water is in Ethiopia. The Blue Nile runs through Eritrea, Sudan, and Ethiopia. The White Nile, originating from Central and East Africa in Lake Victoria passes through Kenya, Uganda, and Tanzania, Burundi, Rwanda, and the Democratic Republic of Congo. At Khartoum, both the White and Blue Nile meet as a single river, then it flows through Egypt to the Mediterranean Sea. The river is also highly seasonal, with roughly 80% of its discharge occurring during August and October. The greatest use of water from the Nile, especially within Egypt, is for irrigation for agricultural production.

There are about ten agreements dealing with the consumptive uses of the waters of the Nile River (including Lake Victoria). Before World War I,

[572] Ibid, Legislative series Treaty No.32.

it was Great Britain, then the administrating colonial power in Egypt, that was the consumptive State signing agreements. On behalf of the Sudan, the United Kingdom had signed an agreement with Italy in 1891 concerning the Nile, later with Ethiopia in 1902, and Belgium on behalf of State of Congo in 1906. On behalf of their colonies, Italy and France had also signed an agreement in 1906 concerning the Nile River and the Lake Victoria. Others include the 1925 and 1929 agreements between Italy and Great Britain dealing with Egypt's right vis-à-vis the Sudan concerning the Nile waters.

Regarding the Nile River, the priority of irrigation, i.e. non-navigational uses, was established and continued thereafter. In paragraphs 2 and 4(6) of the 1929 Exchange of Notes between the United Kingdom and the Egyptian Government with regard to the Use of the Waters of the River Nile for Irrigation, the acquired rights constituting the existing use were recognized and protected by the 1953 and the 1957 agreements between Sudan and Egypt.[573]

Egypt and the Sudan signed an agreement at Cairo in November 8, 1959 aiming for the full utilization of the Nile waters.[574] In the preamble of this Agreement, there are references to the full utilization of the Nile waters.[575] This Agreement has fixed the ratio of water allocation based on the notion of *acquired right.*

The 1959 Agreement aims to secure the interests of present and future requirements of the Parties.[576] The 1959 Agreement also notes that the l929 Agreement provided the partial measures of the use of the Nile waters, lacking a complete control of the river waters. The Parties to the 1959 Agreement recognized the present *acquired rights*, stating that "the amount of the Nile waters used by the United Arab Republic [Egypt] until this Agreement is signed shall be her acquired right before obtaining the benefits of the Nile Control Projects and the projects which will increase its yield and which projects are referred to in this Agreement."[577]

A total of the acquired rights for Egypt is 48 milliards of cubic meters per year as measured at Aswan. Amount of the waters for Sudan as acquired right, before obtaining the benefits of the projects referred to above, is 4 milliards of cubic meters per year as measured at Aswan. As to the projects and division of benefits between the Parties, the 1959 Agreement entitles Egypt to construct the Sudd el Aali at Aswan as the first link of a series of projects on the Nile for storage, aiming to regulate the Nile waters and control their flow into the sea.[578] For Sudan, constructing

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[573] Ibid, Legislative series and Treaty No.7.
[574] Ibid, Legislative series and Treaty No.34.
[575] Ibid.
[576] A preambulary note of the 1959 Nile Agreement.
[577] Article First the present acquired rights, paras 1 and 2.
[578] Article Second, "the Nile control projects and the division of their benefits the two republics".

the Roseires Dam on the Blue Nile and any other works are essential in order to acquire its share.[579] The net benefit from the Sudd el Aali Reservoir agreed by the Parties to the 1959 Agreement is calculated on the basis of the average annual natural river yield of water at Aswan from 1900, estimated at about 84 milliards of cubic meters per year.[580]

The acquired rights measured at Aswan, and the average of losses of storage of the Sudd El Aali Reservoir is deducted from this yield, and the balance is the net benefit, to be divided between the Parties. Similarly, the net benefit from the Sudd el Aali Reservoir is divided between the Parties at the ratio of 141/2 milliards river yield, for Sudan and 71/2 yield for Egypt so long as the average river yield remains within the limits of the average yield referred to above. If the average yield remains the same as the average of the previous years, estimated at 84 milliards, and if the losses of storage remain equal, estimated at 10 milliards, the net benefit of the Sudd el Aali Reservoir is 22 milliards yield, out of which Sudan's share is 141/2 milliards yield and for Egypt 71/2 milliards yield. Adding these shares to their acquired rights, the total share from the net yield of the Nile after the full operation of the Sudd el Aali Reservoir shall be 181/2 milliards for Sudan and 551/2 Milliards for Egypt. In case of average yield increases, the resulting net benefit from this increase shall be divided in equal shares between the Parties.[581]

The net benefit from the Sudd el Aali is calculated on the basis of the average natural yield of the river at Aswan in the years after the deduction wherefrom of the acquired rights of the Parties and the average losses of over-year storage at the Sudd el Aali Reservoir. It is agreed that the net benefit shall be the subject of revision by the two parties at reasonable intervals to be agreed upon after starting the full operation of the Sudd el Aali Reservoir.[582] In balancing the benefits, Egypt agreed to pay to Sudan 15 million Egyptian Pounds as full compensation for the damage resulting from the storage in the Sudd el Aali Reservoir.[583] In return, Sudan agreed to make the final transfer of the population of Halfa and all other Sudanese inhabitants from the land, which was to be submerged by the stored water, undertaking to arrange the transfer before July 1963. Upon full operation the Sudd el Aali in Egypt was not required to store any water at Gebel Aulia Dam. The Parties are obliged to discuss all matters related to this matter.[584]

The Parties recognize that the portions of the Nile basin waters are lost in the swamps of Bahr El Jebel, Bahr El Zeraf, Balir el Ghazal and the Sobat River, and it is essential that efforts should be exerted in order to prevent

[579] Article Second.
[580] Ibid, para 3.
[581] Ibid, pars 4.
[582] Ibid, para 5.
[583] Ibid, para 6.
[584] Ibid, paras 7 and 8.

these losses, in order to increase the yield of the river for use in agricultural expansion. In preventing the losses of the Nile basin waters, the Parties agreed to the following.[585] In agreement with Egypt, the Sudan is to construct projects for the increase of the river yield by preventing losses of waters of the Nile Basin in the swamps of Bahr El Jebel, Bahr el Zeraf, Bahr el Ghazal and its tributaries; the Sobat River and its tributaries; and the White Nile Basin. The net yield of the projects is to be divided equally between the Parties with each contributing to the costs equally.[586] Egypt, paying its share to Sudan financing the above-mentioned projects out of its own funds. If Egypt, on account of its progress in planned agricultural expansion, finds it necessary to increase the Nile yield projects, after the approval by the Parties, at a time when the Sudan does not need such a project, is obliged to notify the Sudan about the time convenient for the former to start the execution of the project.

The Parties, within two years after such notifications, are obliged to present a date-phased program for the utilization of its share of the waters saved by the project, and each phase of the program is to be binding to the Parties. At the expiry of the two years, Egypt will start the execution of the projects, at its own expense. When the Sudan is ready to utilize its share according to the agreed program, it shall pay to Egypt a share of all the expenses in the same ratio as the share in benefit is to the total benefit of the project, provided that the share of either Parties shall not exceed one half of the total benefit of the project.[587]

To ensure technical cooperation, the Parties are obliged to continue any research and study necessary for the Nile control projects, and the increase of its yield, and to continue the hydrological survey of its upper reaches.[588] The Parties agreed to establish a Permanent Joint Technical Commission with an equal number of members from both sides, responsible for various functions. This Technical Commission is responsible to draw up all project outlines, supervise the necessary studies for the finalizing of projects, present proposals to the respective governments, and supervise the execution of the approved projects. The Commission is charged with the task of devising a fair arrangement for the Parties to follow.[589] Recommendations of the Commission are to be presented to the two governments for approval. The duties of the Commission are to be carried out under the technical supervision of the Commission by the engineers from the respective Parties, as well as a representative from Uganda. The Parties, forming the Technical Commission by a joint decree, will provide for necessary funds from their budgets. The Commission, according to the requirements of work, can hold meetings in Cairo or in Khartoum. The

[585] Article Third, "projects for the utilization of lost waters in the Nile basin".
[586] Ibid, para 1.
[587] Ibid, para 2.
[588] Article Fourth, "technical cooperation between the two republics".
[589] Ibid, para 1.

Commission can lay down regulations for the organization of its meetings and its technical, administrative and financial activities, which is subject to the approval of the two governments.[590]

A general, but important, provision of the 1959 Agreement is that negotiations concerning the Nile waters with any riparian States require that the Joint Technical Commission study the subject. The unified view of the Commission is to be the basis of any negotiations with other riparian States of the Nile River. As negotiations lead to an agreement, the Joint Technical Commission,[591] after consulting the authorities in the governments of the States concerned, is responsible for drawing all technical details and the working and maintenance arrangements. After the final approval by the governments concerned,[592] the Commission supervises the carrying out of the technical agreements.[593] The sharing of the Nile waters with other riparians (which are not Parties to this agreement) is recognized by the 1959 Agreement,[594] agreeing that they shall jointly consider and reach one unified view regarding the such claims. In cases of unified arrangement, the accepted amount of the 1959 Agreement shall be deducted from the shares of the Parties in equal parts, as calculated at Aswan. The Technical Commission is to make the necessary arrangements with the States concerned to ensure that their water consumption shall not exceed the amounts agreed upon.

Summarizing the legal regime of the Nile River established by the 1959 Agreement, the following points need to be noted. The 1959 Agreement aims at the full utilization the Nile waters, regulating benefits, recognizing the acquired rights, and securing the present and future requirements. As to the projects and the divide of benefits between the Parties, the 1959 Agreement provides an entitlement for Egypt, constructing the Sudd el Aali Reservoir at Aswan as the first link of a series of projects on the Nile for storage, aiming to regulate the Nile waters and control their flow into the sea. Another important provision of the 1959 Agreement is that it recognizes the claim of all riparians of the Nile River, and necessary negotiations concerning the Nile waters with any riparian States, subject to studies by the Joint Technical Commission. The unified view of the Commission is to be the basis of any negotiations with other riparian States of the Nile River.

In preventing the losses of waters and to increase the yield of the Nile River, the 1959 Agreement recognizes the drainage basin concept. In balancing the benefits, it provides for compensations of harm resulting from the storage of water. The 1959 Agreement fails to address the regime of navigational use and environmental protection, including water quality.

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[590] Ibid, para 1(a).
[591] Ibid, para 1.
[592] Ibid, para 1(b).
[593] Ibid, paras 2 and 3.
[594] Article Fifth, general provisions, paras 1 and 2.

On the whole, it lacks a unified regime that includes all riparians of the Nile basin. The high use of pesticides and fertilizers in the Nile valley, particularly in Egypt, has caused pollution of the river through the leaching of chemicals to the soil. The level of pollution has also been exacerbated by the inability to manage the industrial, domestic, and agricultural waste produced by a rapidly increasing population.

As a result of the projects of the 1959 Agreement, only about 2% of the Nile's flow actually reaches the sea, contributing to ecological problems.

While Burundi, Kenya, and Rwanda are already facing water scarcity, Egypt and Ethiopia are expected to fall into that category by 2025, and Tanzania and Uganda will join the group by 2050. The Sudan, because of its limited population in relation to its size, relatively accessible flood region, and its endowment of rainwater (which is enough to sustain significant rain-based food production), is not expected to face the effects of water scarcity in the near future. Ethiopia has never recognized the validity of the 1959 Agreement. Since the 1980's Ethiopia launched the first phase of the hydroelectric schemes called the Tana Beles Project, aiming to double hydroelectric production and provide irrigation.

The Tana Beles Project sought to transfer water from Lake Tana to the Beles River by building five dams, to alleviate problems of drought and poor water distribution. Egypt, having ambitious irrigation plans of its own, is concerned about the potential effect of the scheme on the flow of the Blue Nile. Ethiopia, the Sudan, and Uganda appear headed toward negotiating a comprehensive regime to regulate the Nile. The 1959 Agreement between Egypt and the Sudan sought to enshrine acquired rights of the Parties. A provision of the 1959 Agreement calls upon the Parties to adopt a common negotiating position vis-à-vis all other Nile Basin States, supporting the division of all of the flow of the Nile between only two of the ten riparians. The elements of the Nile regime and its management modality, established by the 1959 Agreement, can be illustrated in the following table:

	CA	SP	IM	DS
The 1959 Agreement	*ir*	*ar*	*pjtc*	*neg*

CA = Concepts and Approaches (*ir* = *international river*); SP = Substantive Principles (*ar* = *acquired rights*); IM = Implementation Mechanisms (*pjtc* = *joint technical committee*); DS = Dispute Settlement venues (*neg* = *negotiation)*

This table illustrates that the 1959 Agreement takes the international river (*ir*) approach, within which the acquired right (*ar*) is recognized as the Substantive Principle (SP). This agreement is aimed at the fixed allocation of waters of the Nile. The Agreement has established the Permanent Joint Technical Committee *(pjtc*) as the Implementation Mechanism (IM), which is held responsible for administrative functions. One noteworthy aspect of the agreement is the recognition of the acquired right (*ar*) as the Substantive Principle (SP), which seems to be based on prior appropriation right, the

first users prevailing over the later users. However, it should be noted that with the modern recognition of the principle of equitable utilization (*eu*) as the SP of international watercourse use and protection, in future negotiations the acquired right (*ac)* would fall into one of the criteria of the principle of equitable utilization (*eu)*.

The 1959 Agreement is based on piecemeal management, which has prioritized irrigation over the other uses. The Dispute Settlement (DS) procedures of the Agreement consist of negotiation (*nego*) between the concerned governments. The Agreement provides for further negotiations concerning the Nile waters with any other riparian States based on the recommendation of the Permanent Joint Technical Committee (*pjtc).* This makes the Agreement flexible for adjustment with changing needs. However, from 1959 to the early 1990's no further initiative was taken by the parties to the 1959 Agreement to accommodate or adjust the need of all basin States sharing the Nile River. There are no provisions in the 1959 Agreement concerning flood control or combating drought. Because of the Aswan Dam flood control capabilities, the parties avoided mentioning flood control measures in the 1959 Agreement. However, the Egypt-Sudan Permanent Joint Technical Commission (*pjtc*) failed to combat the 1980's drought.

In the 1980's, the Permanent Joint Technical Commission launched a series of studies with support from the UNDP and the World Meteorological Organization, aiming to provide a baseline set of measurements of water availability and future needs affecting the White Nile in and surrounding lakes, i.e. Victoria, Kyoga and Albert. In 1981, agreement on basin-wide management for the Kagera River was reached, extending the Nile Basin in the south-westerly direction to include Burundi, Rwanda, Tanzania, and Uganda. In 1983, the Swahili Group was formed, bringing together all riparians of the Nile, with the participation of Ethiopia and Kenya as observers. The Swahili Group aimed to foster economic, social, cultural, and technical ties among the Nile riparians, leading to the foundation of a permanent sub-regional economic organization.

Concerning the further development of the Nile regime, it is relevant to focus on the 1990's initiatives.[595] A breakthrough in the development of the

[595] In 1992, the Technical Cooperation Committee for the Promotion of Development and Environmental Protection on the Nile (TECCONILE) was established as an inter-governmental body. Ethiopia and Kenya refused to join, because they believed that the framework for the organization was inadequate, and it failed to address the fundamental equitable concerns of water apportionment. From 1993 to 1995, TECCONILE meetings resulted in the creation of a Nile River Basin Action Plan, involving all riparian States with the Council of Ministers for Water Affairs. In February 1995, the Council of Ministers of the riparian States of the Nile approved twenty-two projects, grouped into five categories of activities, at an estimated cost of $100 million. The Action Plan aims for the establishment of a basin-wide, multidisciplinary framework for legal and institutional arrangements. The Action Plan was reviewed in 1999, establishing the Nile River Basin Strategic Action

Nile regime was the creation of the Nile Basin Initiatives (NBI) in 1999. The NBI focuses on sustainable socio-economic development, through the equitable utilization and benefit of the shared Nile Basin, aiming for an eventual comprehensive Nile Agreement. The Action Program of the NBI comprises the Shared Vision Program (SVP), which has taken a basin-wide framework for action, and the Subsidiary Action Program (SAP). This gives emphasis on the joint development projects at the sub-basin level. The SAP focuses on several broad action themes, including cooperative framework; confidence building and stakeholder involvement; socioeconomic, environmental, and sectoral analyses; development and investment planning; and applied training.

In their assessment of the various informal processes mentioned above concerning the Nile basin, Brunnee and Toope suggest that "norms can generate adherence even if they are not formally binding."[596] However, one cannot deny the value of binding authority of treaties over the informal process or norm. In addition to this, the Nile Shared Vision Program cannot be separated from the obligations of States to apply the general principles of law, i.e. the principle of equitable utilization, and the law of the treaties concerning the use and management of the Nile whether it is about management or resolving differences. Having examined the Nile regime as it developed in the 1950's, we will turn our focus on the development in the 1960's concerning other important African rivers. Here now, the focus will shift to the Niger, Senegal and Chad rivers of Africa.

Program. Egypt and Ethiopia concluded a cooperation agreement in 1993, focusing on the Nile basin. The first Nile Conference comprising all Nile basin States was held in 1993 in Aswan, Egypt. In this conference, the idea of sub-regional agreements began to be viewed as complementary to a basin-wide framework. It was recognized that any regime concerning the White Nile and the Blue Nile could be approached from a basin-wide framework. The Council of Ministers of the riparian States of the Nile passed resolutions in May 1999 to facilitate cooperation and information sharing. Ethiopia, Sudan, and Egypt agreed to increase their cooperation with respect to the Blue Nile, while nine Nile riparian States agreed to the creation of a joint Nile Basin Initiative (NBI), establishing a secretariat in Uganda. NBI aimed to foster not only information sharing and technical assistance, but also joint development initiatives, which were intended to facilitate a basin-wide dialogue until a permanent legal framework supported it. In 1999, Egypt, Ethiopia, and Sudan formed an East Nile Joint Committee (ENJC) for the cooperative hydroelectric development of rivers originating in Ethiopia. In March 2001, the Nile Council of Ministers of Water Affairs endorsed several basin-wide SVP's and several sub-basin projects, the latter to be undertaken within the NBI's Eastern Nile (ENSAP) and Nile Equatorial Lakes (NELSAP) sub-programs. A new International Consortium for Cooperation on the Nile (ICCON) met in June 2001, with participation of the Nile Council of Ministers, intended to be "a forum for dialogue on the options and opportunities for management and development of the Nile Basin." International donors, public and private lenders, as well as other interested parties and professional organizations appear to be working in support of the NBI. A sub-group of ICCON was organized by the World Bank at the request of the Nile Council of Ministers, seeking financial assistance for the SVP. The Nile River Basin Action Plan was finalized at the second Nile Conference (2000).

[596] Brunnee and Toope, (HILJ 43) 2002, p.105.

6.4. Niger River, Senegal River and Chad Lake Basin

In the 1960's, the regime of the Niger River established in the 19th century by the European colonial powers was abolished by the riparian States - Guinea, Mali, Ivory Coast, Upper Volta (later Burkina Faso), Dahomey (later Benin), Niger, Nigeria, Chad and Cameron - being newly independent. The nine riparian States of the Niger River negotiated the 1963 Convention, which abrogated the earlier acts and established the guarantee of free access to ships of all nations without discrimination.[597] Furthermore, when the 1963 Convention was formalized as the 1963 Niger River Act, the nine riparian States of the Niger basin dealt with navigation and economic cooperation.

In terms of the concepts and approaches, the purpose of the 1963 Act is the "judicious exploitation of the resources of the River Niger basin." In its Article 2, the 1963 Act provides for the principle of uses, by which the riparian States are required to utilize of the Niger River basin, within their territory, without prejudicing the sovereign rights of each others. In other words, this somehow appears to adhere to the principle of equitable utilization. Further, Article 2 states: "the utilization of the said River, its tributaries and sub-tributaries, shall be taken in a wide sense, to refer in particular to navigation, agricultural and industrial uses, and collection of the products of its fauna and flora."[598]

Article 3 relates to navigation on the Niger River, its tributaries and sub-tributaries. It provides for the complete equality of treatment to all ships of all nations in all respects. The river is free for merchant vessels and transportation of goods and passengers. The Parties to the 1963 Niger River Act recognized the physical characteristics of the drainage basin of its rivers, tributaries and sub-tributaries for the "judicious exploitation of the resources of the River Niger basin."[599] Moreover, Article 4 provides that:

> The riparian States undertake to establish close cooperation with regard to the study and execution of any project likely to have an appreciable effect on certain features of the regime of the River, its tributaries and sub-tributaries, their conditions of navigability, agricultural and industrial exploitation, the sanitary conditions of their waters, and the biological characteristics of their fauna and flora.[600]

The above-mentioned provision adopts holistic and integrated approaches, viewing different issues independently as well as interconnecting the regimes of the uses of watercourses along with the regime of protection. In other words, the conditions of a watercourse - including navigability, agricultural and industrial exploitation, the sanitary conditions and the

[597] See, 587 *UNTS*, 9.
[598] Ibid,p.11.
[599] Ibid,p.13
[600] Ibid,p.19.

biological characteristics of the fauna and flora - are identified holistically, thereby integrated with each other.

The 1963 Niger River Act was supplemented by the 1964 Agreement concerning the Niger River Commission,[601] which is responsible for the supervision of the implementation of the 1963 Act. The responsibilities of the Commission include recommending regulations for the application of the principles set by the Act, to maintain liaisons between the riparian States, and to study, collect, evaluate and disseminate information. The Commission is also responsible for the examination of complaints by the parties and to promote settlement of dispute and resolution of differences. The decisions of the Commission are binding provided that the riparian States approve them.

The Niger management model was followed by four of the riparian States of the Senegal River (Mauritania, Guinea, Senegal and Mali), with the 1963 Convention relating to the General Development of the Senegal River Basin.[602] The Preamble of the Convention recognizes the need for the coordinated development of the Senegal River basin for the rational exploitation of its resources. The 1963 Senegal River Convention was followed by the 1964 Convention relating to the Status of the Senegal River.

Article 8 of the 1964 Convention provides that: "the waters flowing into the Senegal will be subject in every respect to the same regime as the rivers or lakes of which they are the tributaries."[603] The 1964 Convention also established a Committee composed of representatives of the riparian States with powers over the development and exploitation of the basin, and having the objectives of safeguarding freedom of navigation.

Furthermore, the 1964 Convention and Statutes relating to the Development of the Chad Lake Basin (hereinafter referred to as the "1964 Chad Convention") take into account the basin concept and recognize the system as a single unit. Article 4 of the Statutes provides that:

> The exploitation of the Chad Basin and especially the utilization of surface and underground waters has the widest meaning and refers in particular to the need of domestic and industrial and agricultural development an collecting its fauna and flora products.[604]

The legal regime of the Niger River developed in the 1960's serves as the model of harmonized regimes, presaging future trends towards management approaches to shared international watercourses.[605]

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[601] Ibid.

[602] For both the English and French texts see, *Journal officiel de la Republique de Senegal*, 1965, No.3727, p.171.

[603] *YILC*, 1976, Vol.II, Part One, p.188, para 33.

[604] For both the English and French texts see, *Journal officiel de la Republique federale du Cameroun*, 1964, No.18, p.1003.

[605] It is interesting to note that the content of Article 4, adopted in the 1960's in the African context, was adopted in modified form in the 1990's in Europe by the 1992 ECE Convention.

In summary, it can be said that the Chad,[606] Niger[607] and Senegal[608] regimes recognize the interdependence of the constituent parts of the river basin, the interrelationships between the regimes of the uses and environmental protection of the watercourses. The 1960's development of the regimes of the African international watercourses and their management models can be illustrated in the following table:

	CA	SP	IM	DS
The 1963 Niger River Con/Act	*irb*	*sr*	*rc*	+
The 1963 Senegal River Convention	*irb*	*sr*	*rc*	+
The 1964 Chad Convention	*irb*	*sr*	*rc*	+

CA = Concepts and Approaches (*irb* = *international river basin*); SP = Substantive Principles (*sr* = *sovereign rights, including freedom of navigation*); IM = Implementation Mechanisms (*rc* = *river commission*); DS = Dispute Settlement venues (+ = *adjudication*)

This table illustrates that the international river basin (*irb*) is a well recognized Concept and Approach (CA) in the 1960's legal arrangement of the African international rivers. Even though there is an emphasis of the sovereign right (*sr*) in the agreements, it is supported by the principle of cooperation between riparian States. One important development in the 1960's is the establishment of the Joint Commissions (*jc*) as the Implementation Mechanisms (IM) by the parties to the treaties. These commissions have administrative and some times even judicial functions. In the table, under the Dispute Settlement (DS), the "+" implies that the Joint Commissions (*jc)* are empowered to make judicial decisions, enforceability of which depends on the consent of the riparian States. All this shows that through the developments during the 1960's, the management models of African international river moved towards a harmonized paradigm. Only a few joint commissions developed in the

[606] For both the English and French texts of the Convention and Statutes relating to the Development of the Chad Basin 1964 see, *Journal officiel de la Republique federale du Cameroun*, 1964, No.18, p.1005.

[607] Act Regarding Navigation and Economic Cooperation between the States of the Niger Basin, October 26, 1963, *UNTS*, 587, 1967, pp.9-17; Agreement Concerning the Niger River Basin Commission and the Navigation and Transport on the River Niger, Niamey, November 25, 1964, *UNTS*, 587, 1967, pp.19-33; The Convention Establishing the Niger River Basin Authority, November 21, 1980.

[608] Convention relative au statut de fleuve Sénégal, Nouakchott, Mauritania, March 11, 1972. Concerning the Utilisation of International Watercourses for Other Purposes than Navigation: Africa, *Natural Resources/Water Series*, No.13. Convention portant création de l'Organisation pour la Mise en Valeur du Fleuve Sénégal, December 17, 1975, Documents.

1960's offered a framework regarding maintenance of the river's water quality.[609]

One noteworthy trend in riparian State practice of Africa, from the 1960's to the 1980's, appears to be the establishment of new kinds of management of watercourses. For example, the riparian States established the Senegal River Organization as a governing structure of planning and management.[610] The Karega River Basin Organization was established to manage joint water development and to undertake tourism, transportation, and other economic development projects.[611] Another model appeared as the "union" of the riparian States for the purpose of shared watercourse management, i.e. the Mano River Union.[612]

6.5. Zambezi River

The Zambezi is one of the largest rivers in Africa, shared by eight riparian States, eventually running into the Indian Ocean. In exploring the legal regimes of the Zambezi River, one need to explore the history that during the colonial period, Portugal opened the Zambezi River to Great Britain in accordance with the 1885 General Act concerning navigational use, applying the principles of the freedom of navigation and the equal treatment of all flags on the Zambezi River. The great rivers of Africa traditionally offered the colonial powers a highway penetrating deep into the African continent.

In order to establish boundaries separating the sphere of influence of the colonial powers as well as to gain access to the Zambezi River, the 1890 Anglo-German Treaty was signed. Article VII of the 1890 Treaty provided that neither colonial owner will interfere with any sphere of influence assigned to the other. One colonial power will not in the sphere of the other make acquisitions, conclude Treaties, accept sovereign rights or protectorates, nor hinder the extension of influence of the other. By opting for the words center of the main channel, the 1890 Treaty intended to establish a boundary separating their spheres of influence thereby establishing the sovereign rights.[613]

The Southern African region remained under colonial domination, apartheid and torn by civil wars for a long time. Over the course of a century after the 1890 Treaty, the regime of multiple uses and sustainable development of the Zambezi River evolved into the Agreement on the Action Plan for the Environmentally Sound Management of the Common

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[609] For example, the 1963 International Commission for the Protection of the Rhine River Against Pollution (ICPR). Agreement on the International Commission for the Protection of the Rhine Against Pollution, April 29, 1963, *UNTS*, 3, p.994.

[610] Parnell and Uttan , 1976, pp.235-256; Okidi, 1987, p.73; Yu, 1991, p.996.

[611] UNDoc.ST/ESA/120, UNSale,No.E.82, 1983,pp.175-176. Burundi, Rwanda, Tanzania and Uganda have formed the Kagera River Basin Organization; see Goldenman 1990, p.754; Okidi, 1986, p.113.

[612] Robson, 1982, pp.613-628.

[613] *Kasikili/Sedudu Island Case* 1999 (para 43) see, Part VI, Chapter 15.6.

Zambezi River System, signed in 1987 (hereinafter referred to as "the 1987 Agreement") by the 5 of the riparian States, Botswana, Mozambique, Tanzania, Zambia, and Zimbabwe.[614] The 1987 Agreement provides for the Zambezi River Action Plan (ZACPLAN), which was initiated in 1985 by UNDP and the Southern African Development Community (SADC). This was done in recognition of the need for an integrated management of the shared waters.

The basic principles of ZACPLAN are based upon the SADC Treaty, providing for cooperation in the areas of shared natural resource use and environmental protection. Apart from the 1987 Agreement, there are several agreements between the eleven SADC States - Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe - concerning joint cooperation in various fields, including water resources.

In its Preamble, the 1987 Agreement refers to the 1972 UN Conference on the Human environment and the Mar del Plata Action Plan on Water Development and Administration. The objective of the Agreement is environmentally sound water resource management of the common Zambezi River system, as well as strengthened regional cooperation for sustainable development. The idea of mutual benefit is the core principle of this Agreement, which is to be achieved by mutual cooperation. The Parties are required to take individual and/or joint regional measures for the implementation of the 1987 Agreement.[615] They are also required to establish the Implementation Mechanism (IM), either through normal institutional and financial arrangement of SADC, or by establishing an Inter-Governmental Monitoring and Coordinating Committee, a Coordinating Unit, and a Trust Fund.[616] However, the financial funding for the action plan is not clear in the agreement. ZACPLAN aims to prevent and avoid, rather than settle after the fact, any possible water conflicts.[617]

ZACPLAN is one of several projects of the SADC Treaty, which represents the 1980's attempts of UNEP to establish an innovative model of the integrated management of international watercourses. ZACPLAN recognizes the interrelationships between environmental protection and economic development, providing for an integrated management including land-use practice, watershed management, soil conservation and development patterns. This is an ecosystem approach recognized by ZACPLAN in accordance with the two international conventions concerning salt and fresh waters.

According to the 1987 Agreement, the issues related to the joint development projects, including integrated management, are the subjects of

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[614] Agreement for the Environmentally Sound Management of the Common Zambezi River System concluded at Harare, Zimbabwe, May 28, 1987, see 27 *ILM*, 1988, p.1109.
[615] Ibid, Article 1(5).
[616] Ibid, Article 2(b).
[617] Ibid, Annex I, Background and Objectives (13).

separate agreements between States sharing the Zambezi River. ZACPLAN offers a framework for environmentally sound water resource management, including measures for wetland protection, restoration and maintenance of watershed vegetation cover. Pollution of water is not addressed as a problem in ZACPLAN, since at the time it was not a pressing issue, but the maintenance of water quality is addressed.[618] Most important of all, ZACPLAN calls for land-use practices, watershed management, soil conservation, sound development patterns and protection of water resources, through a process of: a) environmental assessment; b) environmental management; c) environmental national legislation; and d) supporting measures.[619] The environmentally sound Zambezi River management model developed by the 1987 Agreement can be illustrated as follows:

	CA	SP	IM	DS
The 1987 Agreement	*czrs*	*mb-mco* *sd* *esm*	*eifa* *igmc* *cutf*	*apwc*

CA = Concepts and Approaches (*czrs = common Zambezi river system*); SP = Substantive Principles (*mb* = mutual benefit; *mco* = mutual cooperation; *sd* = sustainable development; *esm* = environmentally sound management); IM = Implementation Mechanisms (*eifa = existing financial arrangement*; *igmc = inter-governmental monitoring and coordinating committee; cutf = coordinating unit and a trust fund*; DS = Dispute Settlement venues (*apwc = avoid the possible water conflict*)

This table shows that the 1987 Agreement and ZACPLAN is based on the concept (CA) of the common Zambezi River system (*czrs*), which is a wider concept when compared to the traditional international river concept (*ir*). The concept of the common Zambezi River system (*czrs)* may be equivalent to the concept of international drainage basin (*idb*). The Substantive Principles (SP) of the 1987 Agreement include mutual benefit (*mu*), mutual cooperation (*mco*), sustainable development (*sd*) and environmentally sound management (*esm*). All of them are the integral parts of the principle of equitable utilization (*eu*). There are various Implementation Mechanism (IM) mentioned in the 1987 Agreement. The choice is between the existing financial arrangement (*eifa*) of SADC, an Inter-Governmental Monitoring and Coordinating Committee (*igmc*), or a Coordinating Unit and a Trust Fund (*cutf*). A noteworthy element of the 1987 Agreement, as mentioned earlier, is that it aims to avoid the possible water conflict (*apwc*), rather than providing the venue of Dispute Settlement (DS).

The main elements relating to integrated management of international watercourses identified by ZACPLAN are: 1) water allocation, including allocation during periods of shortages and surpluses; 2) water quality; 3)

[618] Ibid, Article 10.
[619] Ibid, Annex I.

minimum river flow; 4) protection of river eco-systems; and 5) flood control measures. Thus, by bringing these issues to the forefront of shared watercourse management debates, the 1980's represent an international era of global awareness, providing momentum from piecemeal management towards the integrated water resource management.

One important issue related to the management of international watercourses is the diversion of water, which may be necessary to meet the water needs of the people, but which might also turn out to be detrimental to the environment. For example, the Zaire River diversion plan for 100 cubic meters of water annually from north into the Sahel (to solve drought problems), would be the largest ever water diversion. If the water diversion plan were implemented, the consequences of the reduced river flow on transportation and fish stocks, as well as the resulting ecological problems, would be severe.[620]

The Zaire River (Congo) originates in Republic of Congo (former Zaire) and ends in the Atlantic Ocean, and has long been an African trade and communication route between pre-colonial kingdoms, e.g. the Luba and the Kango, near the coast. Despite the Inga Dam power site pollution, the Zaire River is largely unaffected by industrial waste. However, over-fishing is known to be a potential problem. The plans, such as the Zaire diversion plan and ZACPLAN, represent the post-independence era legal regimes of African rivers.

The further development of the legal regimes of African rivers in the 1990's will be examined in the following section.

6.6. Treaties in the 1990's

There were several significant developments in the 1990's concerning the major African rivers. ZACPLAN was further enhanced in the 1990's with the 1995 SADC Protocol. Among the 1990's watercourse treaty practices of Africa, the Protocol on Shared Watercourse System signed by the SADC Members - Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe – in 1995 (hereinafter referred to as the "1995 SADC Protocol"),[621] stands out as an exemplary development in the region. The 1995 SADC Protocol constitutes a framework for binding cooperation regulating the common utilization and management of shared water resources.

The 1995 SADC Protocol recognizes the concept of internationally shared watercourses as a system, applying the principles of equitable utilization and the objective of sustainable development. Article 2(2) of the 1995 SADC Protocol provides that member States shall apply the existing rules of general or customary international law relating to the utilization and management of the resources of shared watercourse systems and, in

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[620] *New Internationalist*, No.273, 1995, p.19.

[621] See<http://www.internationalwaterlaw.org/>(visited Nov.11, 2004).

particular, respect and abide by the principle of community interests of the equitable utilization of those systems and their related resources.[622]

The 1995 SADC Protocol (revised by the 2000 Protocol) also recognized the principle of equitable utilization of international watercourses, and referred to sustainable development as a goal to be attained at a national level, rather than multilaterally. Article 2(3) of the 1995 SADC Protocol states that "Member States laying within the basin of a shared water system shall maintain a proper balance between resource development for higher standard of living for their peoples and conservation and enhancement of the environment to promote sustainable development."[623]

Even though the provisions relating to equitable utilization and sustainable development in the 1995 SADC Protocol (Africa) and 1995 Mekong Agreement (Asia) are marked by significant differences compared to the 1992 ECE Helsinki Convention (Europe), it is apparent that these concepts as such, are regarded as a standard part of the approach in Asia and Africa concerning shared international watercourses.

The management model of international watercourses established by the 1995 SADC Protocol can be illustrated in the following table:

	The 1995 SADC Protocol
CA	*isws*
SP	*eu*
-sd	*sd*
IM	
-jc	*jc*
-ua	*ua*
-pim	*pim*
-is	*is*
ra	*ra*
-pup	*pup*
DS	+

Independent variables: CA = Concepts and Approaches (*isws = internationally shared watercourse system*); SP = Substantive Principles (*eu = equitable utilization*; *sd = sustainable development*); IM = Implementation Mechanisms (*jc = joint commission*; ua = *use allocation*; *pim = protection and improvement*; *is = information sharing*; *ra = reporting and assessment*; *pup = public participation*); DS = Dispute Settlement venues (+ = *adjudication*)

Here, in contrast to the African treaty tables presented earlier, the position of the dependent and independent variables are inverted. This table illustrates the main elements of an integrated management model established by the 1995 SADC Protocol, which in many ways are similar to the 1992 ECE Helsinki Convention and the 1995 Mekong Agreement.

[622] *YILC*, 1974, Vol. II, Part Two, p.324.

[623] See<http://www.internationalwaterlaw.org/>(visited Nov.11, 2004).

A noteworthy aspect of the 1995 SADC Protocol is that it adheres to the concept of internationally shared watercourse system (*isws*) in line with the notion of the 1987 Zambezi Agreement. The 1995 SADC Protocol recognizes the *isws* as the main Concept and Approach (CA). The terms *shared* and *system* has been the focus of discussion concerning the use and protection of international watercourses. Those who are hesitant to adopt these terms wants to avoid the controversy relating to sovereignty, arguing that the focus should be on equitable utilization. However, the 1995 SADC Protocol takes a more progressive approach of internationally shared watercourse system (*isws*), which embraces the concept of international drainage basin (*idb*), including the principle of equitable utilization (*eu*) and sustainable development (*sd*) within its scope of implementation.

The 1995 SADC Protocol provides for the establishment of various joint commissions (*jc*) as means of implementation or Implementation Mechanisms (IM). The provisions, which should be implemented, include use allocation *(ua*), protection management (*pm*), information sharing (*is*), and public participation (*pup*). The Protocol also adheres to the principles of the UN Charter in terms of Dispute Settlement (DS), including adjudication (*ad*). Overall the regime takes a harmonized approach towards uses and protection of internationally shared water systems, which furthers the shift towards integration.

6.7. Appraisal

From the beginning of the 19th century, the treaties relating to African international rivers were concluded by the European colonial powers within their respective spheres of influence in Africa, regulating the freedom of navigation, trade and commerce. The treaties concluded at the end of the 19th century by those colonial powers, regulated the fishing rights of local peoples on African international rivers, but navigational uses of rivers remained vital to the Europeans' commercial ambitions and control therein. This means that the European colonial powers influenced not only the evolution of the regimes of navigational use of international watercourses in Africa, as in Asia, but also used navigational rivers as a means to colonize the continent. In the early 20th century, rules concerning other non-navigational uses, e.g. irrigation, were contained in some of the treaties concerning African international rivers. Furthermore, the legal development of the African river regimes in the 1930's addressed classic issues of boundaries, domestic use of waters, fishing and extraction of salt. There was an increase of watercourse agreements in the 1950's concerning non-navigational uses.

Concrete rules of protection of the waters of African international rivers evolved further in the 1960's treaties. This decade marks the end of the era of the watercourse regimes established by the European colonizers in the 19th century, particularly with respect to the Niger River. The decade of 1960's was the beginning of an era of awareness of the interrelationship

between the regimes of use and protection of international watercourses, recognizing international watercourses as a unitary whole, especially with respect to the rivers Niger, Chad and Senegal.

Some of the treaties concluded in the 1980's and 1990's, e.g. the 1987 ZACPLAN and the 1995 SADC Protocol, have clear ecosystem approach, harmonizing the legal regimes of the shared watercourses. Others, such as the treaties relating to the Nile River developed in the 1950's, still lack a harmonization between the regimes of uses as well as between the regimes of protection and uses. This means that the riparian State practice of shared international water utilization among the riparian States of Africa is apparently different from North to Southern Africa. For example, in North Africa, the 1959 Agreement for the Full Utilization of the Nile Waters signed by Egypt and the Sudan is based on acquired right or historic entitlement.[624] In the SADC region, the focus is on the principle of equitable utilization.

It should be noted that the provisions relating to sustainable development adopted in the 1995 Mekong Agreement of Asia and the 1995 SADC Protocol, which was revised in 2000, in Africa are significantly different from the 1992 ECE Helsinki Convention reflecting the European practice. However, it is a clear indication that the objective of sustainable development, the principle of equitable utilization and integrated management of international watercourse are regarded as a part of the practice in Asia and Africa concerning shared international watercourses.

The 1990's practice of the riparian States of Africa and Asia shows that these continents acknowledge the sustainable development of international watercourse as it is applied by the riparian States of Europe. Obviously, there are differences in the degree of application in achieving sustainable development not only on a continental basis, but also varying with each river concerned. There are many underlying socio-political problems in Africa. The challenges facing African rivers in more recent years are many. However, the two most promising and noteworthy developments in the 1990's concerning shared international watercourses are the 1995 SADC Protocol and the SVP of the Nile Basin Initiative. The practical implementation of these initiatives remains to be seen.

[624] *UNTS*, 93, p.92.

CHAPTER 7: TREATIES RELATING TO SOUTH AMERICAN RIVERS

7.1. Introduction

The colonial practices of the Spanish, in regard to watercourses, were based on the Spanish Water Code, the *Siete Partidas* (enacted in 13th century Spain). This code recognized the distinction between public and private waters, and this greatly influenced Spain's South American colonies.[625] According to the *Siete Partidas*, "works obstructing navigation are prohibited."[626] Just as with Roman Law, the *Siete Partidas* recognized all waters of the land as crown waters, to be used for public benefit, requiring authorization for their uses. The Spanish Civil Code of 1889 prohibited water use that might impair navigation, subjecting non-navigational uses to administrative authorization.[627] The Civil Code had granted groundwater rights to private landowners, and this influence spread to Spain's former colonies in South America. The distinction between public and private waters was retained in the municipal law of certain South American countries, e.g. Mexico and Argentina. It should be noted that not only Spain but also other European powers were interested in navigational use of the South American international rivers.

Treaties regulating navigational use were concluded from the beginning of the 19th century among the other European powers colonizing the continent. A treaty signed in 1853 between Argentina, Great Britain, the United States and France declared the Parana and Paraguay rivers free for navigation.[628] Brazil and Argentina agreed upon opening certain parts of the River Plate in 1857, with a reservation for the rights of shipping for other nations. Brazil declared the Amazon River free to all in 1867 along its entire frontier,[629] after pressure from the United States.[630] Peru followed suit in 1868 assuring the freedom of navigation to the Amazon River for all nations. Venezuela opened the Orinoco River in 1869 to all vessels as a concession, including the upper riparian State, Colombia.[631] The above treaties signed in the second half of the 19th century generally followed the principles and rules of the 1815 Final Act of the Congress of Vienna.

Treaties of South American international rivers concluded in the first half of 20th century includes the regime of non-navigational use. The 1910 Protocol between Uruguay and Argentina, regarding the jurisdiction of the River Plate, appears to be the first treaty, which dealt directly with the non-

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625 See, 31 *NRJ*, 1991, p.61(Codigo de las Siete Partidas Part. 3, tit. 28 §§ 3 and 6).
626 Ibid.
627 Teclaff, 1991, p.62.
628 Colombos, 1967, pp.257-258.
629 See, 58 *BFSP*, 551.
630 Colombos, 1967, p.257.
631 *Moore's International Law Digests*, Vol.I, 1906, p.649.

navigational uses of a South American international river.[632] At the same time, the riparian States – some of whom were still under colonization - were also concerned with South American river boundaries. The 1915 Convention on the Maroni River between France and the Netherlands - determining the boundary between the colonies of French Guiana and Surinam provides that no alteration of the hydrographic regimes of the river can be made without the prior consent of the Parties, except for the installation of works to ensure free access to the shore.[633]

In later decades, the notion of the prior consent of the parties would become a part of the planned measures, providing that a State aiming at new use or change in the existing use of an international watercourse, that may have a significant adverse effect on the other riparian State, must provide prior notification to the State which may be potentially affected by such a use. The modern development of the law of international watercourses in South America recognizes rules of planned measures rather than prior consent of the parties.[634] In 1928, Brazil and Colombia agreed in perpetuity to accord each other free navigation on the Amazon and certain other frontier rivers on the basis of equality, including warships, without any duty to be levied and no imposition of fiscal and police regulations.[635] This is an exceptional development in the 20th century evolution of the legal regime of navigational use of an international river, as it allows freedom of navigation for warships. Neither the customary law nor the 1921 Barcelona Convention includes warships in its provisions for freedom of navigation.

In the 1920's and the 1930's the legal regimes of South American international rivers developed with an increasing number of treaties, ranging from navigational use to non-navigational uses, e.g. irrigation and industrial uses to fishing rights and river boundaries. The 1929 Treaty of Peace between the Dominican Republic and the Republic of Haiti deals with water for irrigation and industrial use (Article 10).[636]

In a further development, the seventh Inter-American Conference, held at Montevideo in 1933, adopted the Convention on the utilization of the waters of international rivers concerning industrial and agricultural use.[637] The Convention determined the legal status of the frontier waters between Brazil and Uruguay as well as fishing and non-navigational uses.[638] The 1935 Preliminary Convention between Bolivia and Peru for the exploitation of fisheries in Lake Titicaca, agreed that a convention on fishing covering the lake could be concluded in the future on the basis of equality of rights

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[632] *ST/LEG/SER.B/12*, Legislative series Treaty No.38.
[633] Ibid, Legislative series Treaty No.72.
[634] Article 33 of the 1997 UN Convention.
[635] See, 129 *BFSP*, 262.
[636] *ST/LEG/SER.B/12,* Legislative series Treaty No.68.
[637] *YILC*, 1974, Vol.II, Part Two, pp.212-213.
[638] *ST/LEG/SER.B/12*, Legislative series Treaty No.59.

and economic opportunity.[639] The 1938 Treaty for the delimitation of the boundary waters between Guatemala and El Salvador, prohibited artificial alterations of the river bed, and recognized the right to utilize waters for non-navigational uses, either agriculture or industrial, but under no circumstances such rights could be granted to foreign undertakings or companies.[640] Thus, there was a freedom of navigation permitting foreign vessels to sail on South American rivers, but the non-navigational use was strictly a matter of the riparian right. The 1938 Agreement between Argentina and Uruguay regulated hydropower production concerning the Uruguay River.[641] It also established a Joint Technical Commission.

The river treaties of the 1940's in South America gave priority to water uses. The 1946 Agreement between Argentina and Uruguay relating to the utilization of the rapids of the Uruguay Rivers in the area of Salto Grande, empowered the Joint Technical Commission to decide the priority of water use. The Commission was enabled to apply the following water use priorities: (a) household use and sanitation; (b) navigation; (c) power production; and (d) irrigation. Article 3 of the 1946 Agreement sets out that no use shall be permitted that hamper these priorities.[642] Even though this provision appears to be in conflict with the prevailing regime of no-priority, the arrangement as a whole has the intention of harmonizing the legal regimes of the Uruguay River.

The South American treaties that contributed to the evolution of the legal regimes of international watercourses from the second half of the 20th century began to take an integrated approach. In the 1950's, water resource development and economic integration was in the focus in South America, and water resource development especially stood out as an important factor in the riparian State treaties. The 1951 Treaty of Free Trade and Economic Integration between the Republics of Guatemala and El Salvador adopted the notion of water resource development (Article 19), requiring the Parties to cooperate for the protection of water resources.[643] This notion is further adopted in the 1956 Treaty of free trade and economic integration between Guatemala and Honduras.[644] Along these same lines, the 1957 Agreement between Bolivia and Peru was signed concerning a preliminary economic study of the joint utilization of the waters of Lake Titicaca.[645]

Promotion of trade and regional integration with respect to water resource development in the 1950's was further enhanced in the 1960's treaty practice of the South American riparian States. In the 1960's, the Inter-American Judicial Committee discussed the softening of the priority

[639] Ibid, Treaty No.42.
[640] *ST/LEG/SER.B/12,* Legislative series Treaty No.70.
[641] Ibid, Legislative series Treaty No.39.
[642] Ibid, Legislative series Treaty No.40.
[643] Ibid, Legislative series Treaty No.71.
[644] Ibid, Legislative series Treaty No.73.
[645] Ibid, Legislative series Treaty No.45.

of water use. In its revised Draft Convention on Industrial and Agricultural Uses of International Rivers (1965), the Inter-American Judicial Committee intended to soften the priority of navigation over other uses. However, the Convention contained no alteration to that effect.[646]

The legal regimes and management modalities established by the above-mentioned treaties concerning the South American international rivers can be summarized as follows.

Just as with the Asian and African continents, colonial treaties have shaped the initial development of the legal regime of navigational uses of the South American international rivers, e.g. the 1853 treaty between Argentina, Great Britain, the United States and France concerning the Parana and Paraguay rivers. In terms of the Concepts and Approaches, all South American treaties from the 19th century adopted the concept of international river and thereby freedom of navigation was the primary concern.

Beginning in the first half of 20th century the South American international river treaties, the focus turned toward the regime of non-navigational uses, recognizing the priority of a particular use, e.g. the 1946 Agreement relating to the utilization of the Uruguay River. Attempts at the 1933 Montevideo Conference to balance between navigational use and non-navigational uses remained unsuccessful. Up until the 1950's, there was no uniformity in the application of the Substantive Principles in the South American treaty practices, except for the provisions such as mutual cooperation and prior consultations.

Joint river commissions can be found in the South American treaties up until the 1950's, where they are used as the primary form of Implementation Mechanism, with a focus on navigational use. As for venues of Dispute Settlement, the South America riparian States practice indicates a reliance upon umpires for dispute settlement, especially concerning the navigational use, e.g. the Catatumbo and Zulia rivers between Columbia and Venezuela.[647]

In the following section, the development of the legal regimes in the 1960's & 1970's will be explored focusing on some specific international rivers of South America.

7.2. River Plate

The River Plate Basin includes the Parana, Paraguay, Uruguay and Rio de la Plata rivers, with the riparian States being Argentina, Bolivia, Brazil, Paraguay and Uruguay. The 1853 Treaty between Argentina, Great Britain, the United States and France declared the freedom of navigation on the

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[646] "The utilization of the waters of an international river or lake for industrial or agricultural purposes must not prejudice the free navigation thereof in accordance to the applicable rules", See Article 5, Pan American Union, Report of the Inter-American Judicial Committee 1965, which is also referred in *YILC*, 1974, Vol. II, Part Two, p.350.

[647] Colombos, 1967, p.236.

Parana and Paraguay rivers.[648] With a reservation for the rights of shipping for other nations, Brazil and Argentina agreed upon the opening of certain parts of the River Plate in the 1850's. Nearly a century later, the legal regime of non-navigational uses of the River Plate was initiated in the 1940's by Argentina, Brazil, Uruguay, Paraguay and Bolivia. Only in 1968 the five countries could establish the Inter-Governmental Committee of Coordination as a permanent organ. Soon thereafter, under the 1969 Treaty on the River Plate Basin,[649] the five nations sharing the basin undertook to combine their efforts to promote harmonious development and physical integration of the basin, which are immediate and identifiable under Article 1. The immediate identified areas towards this are:

a) Advancement and assistance in navigation matters;
b) Reasonable utilization of water resources, particularly through regulation of watercourses and their multiple and equitable uses;
c) Conservation and development of animal and vegetable life;
d) Perfection of highway, rail, river, air, electrical and telecommunication interconnections;
e) Regional complementation through the promotion and installation of industries of interests of the Basin development;
f) Economic complementation in frontier areas;
g) Reciprocal cooperation in matter of education, health and combating diseases;
h) Promotion of other projects of common interests, particularly those related to inventory, assessment and utilization of the area's natural resources;
i) Total familiarity with the River Plate Basin.[650]

This provision includes the widest possible identification of areas or issues in a watercourse-related treaty, including education, health and combating diseases, which definitely requires an integrated legal perspective. This provision demonstrates that a harmonized approach for the protection and use of international watercourses developed in the late 1960's, in South America. The 1969 Treaty on the River Plate Basin made a distinction between successive and boundary river positions. The basic idea was that in formulating the rules, it is necessary to take into account the unity of the successive and boundary rivers. These two kinds of rivers represent the two different situations, whereby specific rules are required in terms of quantity, quality or rate of flow, depending on the situation. A noteworthy aspect of the Declaration of Asuncion[651] is that, in its Paragraph 2, it declares a use of waters is acceptable only if it causes no appreciable

[648] Ibid, p.257.
[649] *YILC*, 1976, Part Two, Vol.II, p.189.
[650] Ibid.
[651] *YILC*, 1974, Part Two, Vol.II, pp.322-324.

damage. This principle was supposed to be applied throughout the River Plate Basin. Thus, the 1969 Treaty regulates the River Plate in its entirety, which aims at a combined effort by all riparian States for the harmonious development and physical integration of the entire basin.[652]

It is important to note that Brazil denied the existence of the principle of prior notification in a dispute with Argentina over the Itaipu dam project, which is located within the River Plate Basin across the Parana River at the Itaipu border area between Brazil and Paraguay. In the end, Brazil and Argentina reached an agreement over the cooperation on their joint projects.[653]

The legal regimes of the River Plate Basin developed since the 1960's can be illustrated in the following table:

	CA	SP	IM	DS
The 1969 Treaty on the River Plate Basin	*idb*	*eu/nad*	*igcc*	*neg*

CA = Concepts and Approaches (*idb* = *international drainage basin*); SP = Substantive Principles (*eu* = *equitable utilization*; *nad* = *no appreciable damage*); IM = Implementation Mechanisms (*igcc* = *Inter-Governmental Committee of Coordination*); DS = Dispute Settlement venues (*neg* = *negotiation*)

In terms of the Concept and Approaches (CA) and Substantive Principles (SP), this table illustrates that the River Plate Basin is governed by the concept of international drainage basin (*idb*), and the basin States have recognized the principle of equitable utilization (*eu*) and the principle of no appreciable damage (*nad*). The Inter-Governmental Committee for Coordination (*igcc*) established by the parties represent the Implementation Mechanism (IM), which is responsible for the implementation of the agreement and fostering cooperation. Negotiation (*nego*) between the parties appears to be the means of Dispute Settlement (DS), since there is no specific venue or method specified.

As to the management paradigm, the 1969 Treaty on the River Plate Basin takes a wide but integrated approach as to the use and protection of international watercourses (especially Article 1 which identifies areas for integration). This can be considered to be a significant contribution by this treaty to the integrated legal perspective of the legal regimes of international watercourses. It is important to note that this treaty, in

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[652] Following this treaty, Argentina, Brazil, Bolivia, Paraguay and Uruguay agreed to jointly undertake the Hidrovia Project, to improve navigation on the Parana and Paraguay rivers. Treaty on the River Plate Basin, April 23, 1969, *UNTS*, 875, No.11; Treaty of Itaipu between Brazil and Paraguay, April 26, 1973, *UNTS*, 929; Treaty between Argentina and Uruguay, 13 *ILM*, 1974, 251; Tripartite Agreement on Corpus and Itaipu, October 19, 1979, Integración latinoamericana, No.42; and Agreement between Argentina, Brazil and Paraguay on Parana River Projects, October 19, 1979; 19 *ILM*, 1980, p.615.

[653] See, 19 *ILM*, 1980, p.615.

addition to the principle of equitable utilization (*eu)*, applies the principle of no appreciable damage (*nad*) to the entire River Plate Basin.

In line with the notion of the principle of no appreciable damage (*nad*), the South America riparian States established the principle of absolute prohibition against pollution in successive rivers, as one of the criteria for a fair and reasonable use.[654] For example, in the 1971 Declaration on Water Resources signed by Argentina and Uruguay, the Parties have agreed to "refrain from polluting international rivers and tributaries in any manner and shall conserve the ecological resources in the areas within their respective jurisdictions."[655] In this case, Argentina and Uruguay's interests are related both to navigational use and non-navigational uses, e.g. hydroelectricity production. This same notion is found in the 1971 Act of Santiago signed by Argentina and Chile for hydroelectricity production, which also requires the Parties to "avoid polluting their river and lake systems."[656] This suggests a trend in South American treaty practice, treating the regime of uses and the protection of international watercourses in an integrated manner.

As to the use allocation of international watercourses, it should be noted that the 1971 Declaration on Water Resources signed by Argentina and Uruguay provides for the principle of fairness and reasonableness.[657] The 1971 Act of Santiago also adopts the principle of the 1971 Declaration on Water Resource.[658]

As to the protection of rivers in South America, the riparian State practice indicates zero tolerance of waste disposal and an absolute prohibition against pollution of rivers. Even though critics may raise doubts about the practical applicability of the provision, the 1971 Declaration on Water Resource[659] and the 1971 Act of Santiago,[660] prohibiting pollution of international rivers, serve as outstanding developments in the 1970's as to the protection of international watercourses of South America.

In the following, the discussion turns to the details of the legal regime of the Amazon River as it developed in the 1970's.

7.3. Amazon River

The Amazon River is one of the longest rivers of the world. Originating in Peru, the Amazon eventually empties into the Atlantic Ocean on the

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654 The 1971 Declaration on Water Resources signed by Argentina and Uruguay see, Text in *YILC*, 1974, Part Two, p.324.
655 Ibid.
656 Ibid.
657 Ibid.
658 Ibid.
659 *YILC*, 1974, Vol.II, Part Two, p.324.
660 Ibid, "The Parties shall avoid polluting their river and Lake Systems in any manner and shall conserve the ecological resources of their common river basins in the areas within their respective jurisdictions."

Brazilian coast. The Treaty for Amazonian Cooperation was signed in July 3, 1978 (hereinafter referred as to the "1978 Amazon Treaty") by Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela.[661] This treaty illustrates the evolution of the legal regimes and their interrelationships in the 1970's. The 1978 Amazon Treaty provides for cooperation and joint development. Parties to this treaty recognize their respective Amazonian regions as integral parts of the whole basin, fully promoting a harmonious development of the Amazon region. This arrangement permits an equitable distribution of benefits, in an attempt to raise the standard of living of the Parties' populations. It also aims to achieve incorporation of the Amazonian territory as a means of boosting the respective national economies and promoting regional development. Parties to the 1978 Amazon Treaty also recognize the necessity of maintaining a balance between economic growth and conservation of the environment, including socio-economic development of the populations in the region.

One important aspect of the 1978 Treaty is that the conservation of the environment is referred to as an inherent obligation of the States, cooperation being the fulfillment of these obligations for the ecological conservation of the Amazon region.

Another important point is the reference to "integration and solidarity of all Latin America", a process of cooperation for the benefit of the Amazon region as a whole. Parties to the 1978 Amazon Treaty have agreed to undertake joint actions to promote the harmonious development of their respective Amazonian territories for the rational utilization, equitable benefit and preservation of the environment, including the natural resources of their respective territories.[662] The Parties are required to exchange information and prepare operational agreements as well as pertinent legal instruments permitting the fulfillment of aims of the 1978 Treaty. The Amazon cooperation includes the territories of the parties in the Amazonian Basin as well as any territory of a Party which by virtue of its "geographical, ecological or economic characteristics is considered closely connected with that basin."[663]

The Parties of the 1978 Treaty recognize, on a reciprocal basis, a complete freedom for commercial navigation on the Amazon and other international Amazonian rivers, observing the fiscal and police regulations in force now or in the future within the territory of each party.[664] The 1978 Treaty requires the Parties to apply uniform rules in favor of navigation and trade. As to the exclusive use and utilization of natural resources within their respective territories, the 1978 Treaty declares that there is a

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[661] Treaty between Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela for Amazon Cooperation 1978, see 17 *ILM*, 1978, p.1045.
[662] Article I.
[663] Article II.
[664] Article III.

right and inherent sovereignty of each State and that the exercise of this right shall not be subject to any restrictions.[665] However, the Parties to the 1978 Treaty accept any restriction provided for in international law.[666]

The Amazon cooperation recognizes the importance and multiplicity of the functions of the Amazonian rivers in the process of economic and social development of the regions,[667] thus the Parties are required to make efforts to achieve a rational utilization of water resources. The Amazonian rivers are recognized as a communication link among the Parties as well as to the Atlantic coast.[668] It requires that the riparian States enjoy unimpeded navigation and undertake "national, bilateral or multilateral measures aimed at improving and making the said rivers navigable."[669] This includes carrying out studies and eliminating physical obstacles to "navigation as well as the economic and financial implications so as to put into effect the most appropriate operational measures."[670] As to the exploitation of the flora and fauna of the Amazon region and the maintenance of the ecological balance within the region, the Parties agree to:

> a) Promote scientific research and exchange information and technical personnel among the competent agencies within the respective countries so as to increase their knowledge of the flora and fauna of their Amazon territories and prevent and control diseases in said territories.
> b) Establish a regular system for the proper exchange of information on the conservationist measures adopted or to be adopted by each State in its Amazonian territories; these shall be the subjects of an annual report to be presented by each country.[671]

Apart from issues involving the exchange of information and technical personnel, the 1978 Amazon Treaty is noteworthy in terms of its addressing the health of the peoples of the region. As to health services in the Amazonian territories, the Parties have agreed to take other measures appropriate to improve the sanitary conditions in the region as well as perfect methods for preventing and combating epidemics.[672] The establishment of close cooperation in the fields of scientific and technological research is encouraged to create suitable conditions for the acceleration of the economic and social development of the region, including the following:

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[665] Article IV.
[666] Article IV.
[667] Article V.
[668] Article VI.
[669] Ibid.
[670] Ibid.
[671] Article VII.
[672] Article VIII.

a) the joint or coordinated implementation of research and development programs;
b) the creation and operation of research institutions or centers for improvement and experimental production; and
c) the organization of seminars and conferences, the exchange of information and documentation, and the organization of means for their dissemination.[673]

The Parties may request participation by international agencies in the execution of studies, programs and projects resulting from technical and scientific cooperation. Creation of a suitable physical infrastructure concerning transportation and communications is agreed to in the 1978 Treaty, in order to harmonize, establish and improve road, river, air and telecommunication links, "bearing in mind the plans and programs of each country aimed at attaining the priority goal of fully incorporating those respective Amazonian territories into their respective national economies."[674] The Amazon cooperation efforts concerns the rational utilization of human and natural resources of the respective Amazonian States territories, encouraging "joint studies and measures aimed at promoting the economic and social development of said territories and generating complementary methods for reinforcing the actions envisaged in the national plans of their respective territories."[675]

The 1978 Treaty recognizes that equitable and mutual benefit can be achieved by the retail trade of products for local consumption among the respective Amazonian border populations, to be arranged by suitable bilateral or multilateral agreements.[676]

The 1978 Treaty also addresses cooperation in the area of tourism:

> The Contracting Parties shall cooperate to increase the flow of tourists, both national and from third countries, in their respective Amazonian territories, without prejudice to national regulations for the protection of indigenous cultures and natural resources.[677]

It requires cooperation ensuring the conservation of the ethnological and archaeological wealth of the Amazon region.[678] The Parties are required to maintain a permanent exchange of information and cooperation among themselves and with other Latin American countries in areas pertaining to matters covered by the Treaty.[679] The decisions taken by Parties to the

[673] Article IX.
[674] Article X.
[675] Article XI.
[676] Article XII.
[677] Article XIII.
[678] Article XIV.
[679] Article XV.

Treaty should be compatible with the projects and undertakings executed within their respective territories. In this regard, the 1978 Treaty recognizes that decisions should be taken according to international law and fair practice and good neighborliness.[680]

The Parties are required to take initiatives for studies regarding the elaboration of programs of common interest for developing their Amazonian territories, with special attention to the consideration of initiatives presented by the least developed Parties.[681]

The Parties to the 1978 Amazon Treaty are free to conclude bilateral or multilateral agreements on specific or generic matters provided that these are not contrary to the achievement of the common aims for cooperation in the Amazonian region.[682] Further, the 1978 Treaty provides that the treaty has no "effect on any other international treaties in force between the Parties."[683]

As to any differences with regard to limits or territorial rights that may exist between the Parties, the Treaty does not imply any acceptance or renunciation, affirmation or modification, direct or indirect, express or tacit, of the position or interpretation by a Party.

The Amazonian Cooperation Council (ACC) is to be comprised of diplomatic representatives, who are supposed to meet once a year.[684] The Council is responsible for ensuring that the aims and objectives of the Treaty are complied with, carrying out the decisions taken at the meetings of Foreign Affairs Ministers,[685] making recommendations to the Parties' meetings, proposing agendas, and considering initiatives and plans presented by the Parties. This may include bilateral or multilateral initiatives as well as the execution of plans put forward by the Permanent National Commissions, which the Parties are responsible for establishing the said initiatives.[686] Further, the ACC is responsible for evaluating the implementation of plans and the proposal of rules and regulations for its proper functioning. The Secretariat is responsible for documentation.[687]

The 1978 Amazon Treaty is to remain in force for an unlimited period of time.[688] An intention to renounce the Treaty may be communicated, at least ninety days prior to the formal delivery of the instrument of renunciation,

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[680] Article XVI.
[681] Article XVII.
[682] Article XVIII.
[683] Article XIX.
[684] Article XXI.
[685] Article XX. Meetings of the Ministers of Foreign Affairs should be held when deemed necessary to establish basic guidelines for the common policies for assessing and evaluating the general development or the process of Amazonian cooperation. The designation of the host country for the meetings is based on rotation and in alphabetical order. At the request of one of the Parties and with the support of no fewer than four Member States, the Foreign Affairs Ministers' meetings can be held at any time.
[686] Article XXIII.
[687] Articles XXII, XXIV, XX, XXI and XXVI.
[688] Article XXVII.

ceasing to have effect for the Party denouncing one year after the renunciation has been formalized.[689] The widening of the scope of regimes of water use and protection of South American international rivers, which developed up until the 1980's, were enhanced in the practice of the 1990's.

The main elements of the 1978 Amazon Treaty and its management paradigm can be illustrated in the following table:

	CA	SP	IM	DS
The 1978 Amazon Treaty	*ipb*	*edb*	*acc*	*coop*

CA = Concepts and Approaches (*ipb* = *integral part of the whole basin*); SP = Substantive Principles (*edb* = *equitable distribution of benefit*); IM = Implementation Mechanisms (acc = *Amazonian Cooperation Council*); DS = Dispute Settlement venues (*coop* = *cooperation*)

This table shows that the Concept and Approach (CA) adopted by the 1978 Amazon Treaty covers an integral part of the whole basin (*ipb*). It adheres to the Substantive Principle (SP) that is referred to in the treaty as the principle of equitable distribution of benefit (*edb*). The Implementation Mechanism (IM) of the 1978 Treaty is provided for in detail and the Amazonian Cooperation Council *(acc*) is responsible for it. Cooperation of the Parties (*coop*) is the key Implementation Mechanism (IM). This treaty is focused more on the prevention of dispute through cooperation rather than post-dispute settlement (DS). Above all, this treaty is based on the foundation that equitable and mutual benefit can be achieved by suitable bilateral or multilateral agreements, including trade and tourism.

7.4. Treaties in the 1990's

As with the other continents, the regime of environmental protection of international watercourses was enhanced during the 1990's in South America with the conclusion of a few watercourse treaties. For example, Argentina and Chile signed the 1991 Protocol on Shared Water Resources. Article 1 of the Protocol recognizes the principle of "not to cause injury," prohibiting transboundary environmental harm.[690] Furthermore, Article 5 of the Protocol provides that "the actions and programs aimed at the utilization of the shared water resources shall be undertaken in a coordinated or joint manner through general plans of utilization." These examples suggest that South American State practice evolved in the 1990's, to the extent that it recognized the interrelationship between the regimes of protection and uses of international watercourses.

[689] Article XXVIII.

[690] *Diaro Oficial de la Republica de Chile*, No.34,1993, p.3; See in *Integracion Latinoamericana, Revista Mensual del Intal*, Sept–Oct, 1997, p.116. For the english translation see Funtes, 1998, p.158.

An important point to note concerning the 1990's practice in South America is the establishment of the regime of trade and navigation concerning international rivers. The 1978 Amazon Treaty is an umbrella treaty, which includes the 1942 Protocol, and also lays the groundwork for what would later become the 1998 Treaty of Trade and Navigation. In accordance with Article VI of the 1942 Rio de Janeiro Protocol, which is recalled by the 1978 Amazon Treaty, Peru and Equator signed the 1998 Treaty of Trade and Navigation (hereinafter referred to as the "1998 Peru-Ecuador [Amazon] Treaty").[691] While Article VI of the 1942 Rio Protocol had recognized the navigation right of the riparian States on the Amazon Rivers, Article 1 of the 1998 Trade and Navigation Treaty provides for the expanded rights of Ecuador for the purpose of trade and peaceful navigation on the Amazon and also includes in its scope the Amazon's northern tributaries. The 1998 Treaty is examined in detail separately.

Relevant articles of the 1998 Treaty, which need to be mentioned here, are the following. Article 2 aims at facilitating trade between the two countries by the navigational use of inland waterways between the borders of Peru and Ecuador, establishing a border crossing. It is relevant to note that the 1998 Treaty recognize not only the right of navigation through inland waterways but also overland transit. Article 3 reaffirms the 1978 Treaty of Amazon Cooperation: "This Treaty shall govern without prejudice to the Treaty on Amazon Cooperation." The implementation of the 1978 Amazon Treaty is related to an official Brazilian plan (to be executed by 2010) that envisages 80 dams being built on its tributaries, for the purpose of hydro-electricity mega projects.

The Amazon River carries 1,000 million tons of sediments a year into the Atlantic Ocean.[692] Questions are being raised regarding consequences for the Amazon environment, and how much benefit would the people in the region receive, if all 80 proposed dams were to be constructed. The 1978 Treaty regulates the Amazon River for Amazonian general regional cooperation,[693] and the 1998 Treaty regulate trade and navigation. In order to reach a balanced solution between the building of dams and environmental protection, it is obvious that a harmonized, integrated approach would be required.

The regimes and management paradigm established by the 1998 Peru-Ecuador [Amazon] Treaty can be illustrated in the following table:

[691] Treaty of Trade and Navigation between the Government of the Republic of Peru and the Republic of Ecuador, October 26, 1998, see 38 *ILM*,1999, p.266.
[692] Ibid.
[693] See, 17 *ILM,* 1978, p.1045.

	The 1998 Peru-Ecuador [Amazon] Treaty
CA	*idb*
SP	*edb*
IM	*acc/ctn*
DS	*pec*

Independent variables: CA = Concepts and Approaches *(idb = international drainage basin*); SP = Substantive Principles (*edb = equitable distributation of benefits*); IM = Implementation Mechanisms (*acc = Amazonian Cooperation Council*; *ctn = Centers of Trade and Navigation*) DS = Dispute Settlement venues (*pec = Peru-Ecuador Commission*)

In this table, in contrast to the earlier tables covering South American treaties, the dependent & independent variables are inverted. This table shows that as regards Concept and Approach (CA) the 1998 Peru-Ecuador [Amazon] Treaty has adopted the international drainage basin (*idb*), under which the Substantive Principle (SP) of equitable distribution of benefit (*edb*) is recognized. The Implementation Mechanisms (IM) of the Treaty is the Centers of Trade and Navigation (*ctn*). In addition to this, the Peru-Ecuador Commission established by the 1998 Treaty is the venues for dispute settlement (DS). The main characteristics of this treaty are further discussed in the subsequent part of this study.

7.5. Appraisal

The evolution of the legal regime of the navigational use of international rivers in South America was influenced by the practice of European colonial powers, primarily Spain, just as mainly the French and the British influenced the international rivers of Asia and Africa. However, unlike Asia and Africa, freedom of navigation is granted in certain South America rivers to riparians and non-riparians alike. This freedom also (exceptionally) provides such rights to foreign warships, a trait unique to South American treaty practice.

The inception of South American legal regimes of non-navigational uses of international rivers began to manifest itself in the 1930's. However, it was only in the 1960's that the harmonization of the legal regimes of uses and protection of international watercourses emerged in South American treaty practice (the 1969 Treaty on the River Plate Basin appears to be the first important development of the harmonized legal regimes of South American international watercourses). In the 1970's, the legal regime of environmental protection of international watercourses emerged in South American treaty practice, including an absolute prohibition of pollution with a strict regime of environmental protection.

The treaty practices in South America is characterized by the fact that the principle of equitable utilization was recognized in the 1970's whereas the no harm rule prohibiting transboundary water pollution was adopted in the 1990's. On the whole, the most notable South American practice is

that the freedom of navigation for non-riparian States is guaranteed on international rivers.

It should be also noted that the integrated management of the South American international watercourses includes various issues of trade, tourism, environment and development. The widening scope of legal regimes of water use and environmental protection of South American international rivers were enhanced by the treaty practice of the 1990's, which harmonized the legal regimes of navigational use with trade and commerce on one hand, and the regimes of uses and protection on the other.

CHAPTER 8: TREATIES RELATING TO NORTH AMERICAN RIVERS

8.1. Introduction

The evolution of the legal regimes selected for the present study regarding North American international rivers can be explored in two parts; the regimes between the United States and Canada in the north, and in the south, the regimes between Mexico and the United States. However, two determining factors should be kept in mind. Between the United States and Canada there are abundant boundary waters where the question of protection and the improvement of water is more important than use allocation. In contrast, between the United States and Mexico, there often is a scarcity of waters, with use allocation being the main issue between the two countries. In the former situation, not only the riparian States but also the general public are often included in the decision making process of the boundary water management. In the latter case, the situation is characterized by acrimonious positioning.

As to the legal regime of navigational use in North American rivers, it can be noted that the 1783 Treaty of Peace between Great Britain and the United States, which guaranteed freedom of river navigation, marks the beginning of the legal regime between Canada and the United States (up until its independence in 1867, all treaties concluded between the United States and Canada were signed by the United States and Great Britain). Later, in 1792, the United States negotiated with Spain, arguing for the recognition of natural rights of its citizens to freely navigate on the Mississippi River, thus contributed to the development of the doctrine of the natural right of navigation on international rivers. A few years later, in 1795, a similar arrangement for Spanish citizens on American territory was agreed upon.[694]

Some European jurists argued for the natural right to navigation in the 17th century for the purpose of innocent passage, through international rivers, to and from the sea.[695] Based on this natural right, in 1826 the American Government advanced a claim of free navigation throughout the course of the St. Lawrence River. In 1824, Great Britain and the United States signed the Webster-Ashburton Treaty, declaring that navigation of all boundary waters between the Canada and the United States would, in perpetuity, be free and open for the purpose of commerce to the inhabitants and to the ships, vessels and boats of both countries equally. Both Great Britain and the United States agreed to facilitate for their citizens all water communications along the lines from the shores of Lake Woods, Lake Superior and the Pigon River.

Up to the first half of the 19th century, the legal regime of navigational use of rivers between the Unites States and Mexico was still

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[694] *Documents on the use and control of the waters of interstate and international waters*, United States Department of Interior Publication, 1956; Malloy, Vol.I, p.586.

[695] For example Grotius, *De Jure Bele Ac pacis Libi-Tres,* translation, see in Francis, 1964, p.210.

underdeveloped, compared to the regime between Canada and the Unites States. For example, the 1848 Treaty of Guadalupe-Hidalgo granted the United States navigational rights along the Colorado River to the Gulf of California, while Mexico was not granted any right of navigation on the United States' section of the river.[696]

In 1854, Great Britain and the United States signed the Reciprocity Treaty,[697] providing for reciprocal treatment of the citizens of the two countries. The right of navigation was extended to Lake Michigan, terminated in 1866, but finally settled in the 1871 Treaty of Washington.[698] It is relevant to note that in the 19th century, Great Britain and the United States pursued policies of "free navigation" for different reasons, concerning the regulation of North American rivers. While the policy of Great Britain was based on the conventional right of all countries, the United States championed the natural right of an upper riparian.[699]

The legal regimes of North American international rivers began to advance through bilateral treaties during the late 19th and early 20th centuries. The 1884 Treaty concerning the boundary line following the Rio Grande River and the Colorado River was signed by the United States and Mexico, in order to resolve the difficulties arising out of alterations in the beds of those two rivers.[700] The 1889 Boundary Convention between the United States and Mexico established an International Boundary Commission.[701] The 1906 Convention between the United States and Mexico concerning the Rio Grande, adopted the principle of equitable distribution of water concerning a non-navigational use, i.e. irrigation.[702] Below the southern boundary of New Mexico, the Rio Grande River was free for navigation for the United States and Mexico, but neither party could construct works to impede river navigation. In the following, the development of the regimes of the Rio Grande River and the United States-Canada boundary waters since the early 20th century will be discussed in more details.

8.2. Rio Grande River

In order to reach an equitable distribution of the waters of the Rio Grande for irrigation purposes, the 1906 Convention concerning the Rio Grande River was signed by the United States and Mexico, which entered into force one year later.[703] The 1906 Convention concerns the building of dams for water storage and distribution of water through the dams. According to

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[696] Malloy, I, p.1107.
[697] See, 102 *BFSP*, 137.
[698] Article 26.
[699] For the British Policy and regulation of the European rivers of international concern, see Backon, 1929, p.165.
[700] *YILC*, 1974, Vol.II, Part Two, p.76.
[701] Ibid.
[702] *ST/LEG/SER. B/12*, Legislative series Treaty No.75.
[703] Ibid.

Article I of the 1906 Convention, after the completion of the proposed storage dam near Engle, New Mexico, and the distributing system auxiliary thereto, as soon as water becomes available in the system for that purpose, the United States is obliged to deliver water to Mexico.

As to the delivery of water from the United States to Mexico, the quantity of water to be delivered is "a total of 60,000 acre-feet of water annually, in the bed of the Rio Grande at the point where the head works of the Acquit Madre, known as the Old Mexican Canal, now exist above the city of Juarez, Mexico." The delivery of the said amount of water, according to Article II, is to be assured by the United States throughout the year, in the same proportion as the water supply proposed to be furnished from the said irrigation system to lands in the United States in the vicinity of El Paso, Texas, as nearly as is possible. The schedule according to Article II is as follows:

Acre-feet per month		corresponding cubic feet of waters	
January		0	0
February		1,090	47,480,400
March		5,460	237,837,600
April		12,000	522,720,000
May		12,000	522,720,000
June		12,000	522,720,000
July		8,180	356,320,800
August		4,370	190,357,200
September	3,270	142,441,200	
October		1,090	47,480,400
November	540	23,522,400	
December		0	0
Total		60, 000	2, 613, 600, 000

In the case of extraordinary drought or serious accident to the irrigation system in the United States, the amount to be delivered to the Mexican Canal is to be diminished in the same proportion as the water delivered to lands under said irrigation system in the United States. The said delivery to Mexico is to be made according to Article III, and the United States agrees to pay the entire cost of storing the said quantity of water to be delivered to Mexico, of conveying the same to the international line, of measuring the said water, and of delivering it in the river bed above the head of the Mexican Canal. It is understood that the United States assumes no obligation beyond the delivery of water in the bed of the river above the head of the Mexican Canal.

According to Article IV, the delivery of water as provided for in the 1906 Convention is not to be construed as recognition by the United States of any claim by Mexico to the said waters. The Parties agree that in consideration of such delivery of water, Mexico waives any claims to the waters of the Rio Grande between the head of the present Mexican Canal

and Fort Quitman, Texas, for any purpose whatsoever and also declares fully settled and disposed of, and waives, all existing claims, any that may arise, or be against the United States on account of any damages alleged to have been sustained by the owners of land in Mexico, by reason of the diversion by citizens of the United States of waters of the Rio Grande.

The United States, in entering into this treaty, according to Article V, does not concede, expressly or by implication, any legal basis for any claims heretofore asserted or asserted by reason of any losses incurred by the owners of land in Mexico due or alleged to be due to the diversion of the waters of the Rio Grande within the United States. Important to note here is that the conclusion of the 1906 Convention did not concede the establishment of any general principle or precedent. The understanding of the Parties contemplated by the Convention extends only to the portion of the Rio Grande, which forms the international boundary, from the head of the Mexican Canal down to Fort Quitman, Texas. Also interesting to note is that this is not asserted as a principle of general application to all international watercourses.

The main element of the 1906 Convention between the United States and Mexico concerning the Rio Grande and Colorado rivers can be illustrated in the following table:

	CA	SP	IM	DS
The 1906 Convention	*ibr*	*ed*	-	-

CA = Concepts and Approaches (*irb* = *international boundary river*); SP = Substantive Principles (*ed* = *equitable distribution*); IM = Implementation Mechanisms; DS = Dispute Settlement venues)

This table illustrates that the 1906 Convention concerning the Rio Grand, as stated in its preamble, adopts the concept of international boundary river (*ibr*), whereby the equitable distribution (*ed*) of the water appears to be the Substantive Principle (SP) applied by the treaty. However, the United States did not in any way concede the establishment of any general principle or precedent by concluding this treaty. This treaty does neither establish Implementation Mechanisms (IM) nor defines procedures or venues for Dispute Settlement (DS).

The United States and Mexico concluded another agreement in 1933 whose main purpose was to safeguarding territorial rights, but at the same time was concerned with the prevention of the flooding of the Rio Grande in the El Paso-Juarez valley. In this respect, the 1933 Convention[704] has some bearing on the protection of the environment.

[704] *ST/LEG/SER.B/12,* Legislative series Treaty No.76.

8.3. Colorado, Tijuana and the Rio Grande rivers

The 1944 Treaty, between the United States and Mexico, relating to the Colorado, Tijuana and Rio Grande rivers[705] concerns waterways and boundary water issues between the two countries. The Treaty establishes the International Boundary Waters Commission, quotas of water use allocation from the United States to Mexico and provides ad hoc solutions to water-related problems. The 1944 Treaty, which also covered the Colorado and Tijuana rivers in addition to Rio Grande, further regulates the flows set down by the 1906 Convention concerning the Rio Grande.

The 1944 Treaty is illustrative of the use allocation of the Rio Grande and the Colorado rivers between the United States and Mexico. Article 2 guarantees annual quantity of 1.5 million acre-feet of the Colorado waters to Mexico, amounting to 10 % of the flow of the Colorado River. At the same time, under Article 2 the United States is to receive waters from Rio Grande River. In case of surplus, Mexico is to receive a maximum of 1.7 million acre-feet waters in case of drought, and Mexico's share is to be reduced in proportion to the reduced consumption in the United States.

A model of shared international watercourse management developed between the United States and Mexico under the 1944 Treaty combines the use allocation of the Rio Grande and the Colorado rivers between the two countries. Within the framework of the 1906 Convention between the United States and Mexico concerning the Rio Grande River, both countries reached an agreement based on the equitable distribution of water for irrigation. Furthermore, according to the 1944 Treaty, which is designed to update the mechanism of the International Boundary Water Commission, the United States is obliged to annually deliver 1,500,000 acre-feet of water to Mexico from the Colorado River. The 1944 Treaty regulates the Colorado, Tijuana and the Rio Grande rivers through the International Boundary Water Commission,[706] including the consumptive use.[707] This Commission has the powers to develop plans and settle disputes.[708] However, the Treaty has no provisions for protection of the eco-system and maintenance or improvement of water quality. Article 3 does recognize fishing as a beneficial use, but gives priority to domestic use, irrigation, hydroelectricity production, industrial use and navigation, respectively.

As mentioned earlier, the international watercourse regime between the United and Mexico is different from the United States-Canada boundary water regime. The treaty regime established in the early 20th century between the United States and Mexico provided no rule concerning water quality, and the issue was raised in the 1960's by Mexico. Both countries

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[705] Treaty between Mexico and the United States of America Relative to the Utilisation of Waters of the Colorado and Tijuana Rivers and of the Rio Grande (Rio Bravo) from Fort Quitman, Texas, to the Gulf of Mexico, February 3, 1944, see *ST/LEG/SER.B/12* Legislative series Treaty No.77.

[706] Ibid, Article 24.

[707] Ibid, Article 3.

[708] Ibid, Article 2.

tried to address the problem of water quality in the 1970's. For example, the 1973 Minutes dealt with the Colorado salinity problem, by establishing a desalination plant.[709] In 1973 Minutes, the United States agreed to limit the salinity in the waters delivered to Mexico. However, a satisfactory solution of the water quality remains unresolved along with use allocation. Mexico has claimed that the United States failed to consult them about the Colorado River when the United States commenced construction and lining of the All-American Canal, which runs in the territory of both countries, with the intention of bypassing the Alamo Canal. The question is whether Mexico's share of waters will be calculated according to the 1940's arrangement (the 1944 Treaty), which fixed quantity to Mexico from any and all sources. In other words, the issue is to balance uses between irrigation and domestic water use.

The United States and Mexico boundary water regimes, developed from the 1940's to the 1970's, can be illustrated in the following table:

	CA	SP	IM	DS
The 1944 Treaty	*ibr*	*ed/ qwua*	*ibwc*	*ad*
The 1973 Minutes	*ibr*	*ls*	*ibwc*	*ad*

CA = Concepts and Approaches (*ibr* = *international boundary river*; SP = Substantive Principles (*ed* = *equitable distribution*; *qwua* = *quotas for water use allocation, ls* = *limit the salinity*); IM = Implementation Mechanisms (*iwbc* = *international boundary water commission*); DS = Dispute Settlement venues (ad = *adjudication)*

This table shows the international water regime that of the United States and Mexico is based on the Concept and Approach (CA) of international boundary river (*ibr*), which has adopted the principle of equitable distribution (*ed)*. The United States had, up until 1944, refused to recognize any general principle or precedent. Under this treaty, however, the two countries have recognized equitable distribution (*ed*) as the criterion of the principle of equitable utilization (*eu*). It is interesting also that the 1944 Treaty adopts the idea of equitable distribution (*ed),* updating quotas for water use allocation (*qwua),* which were initially set by the 1906 Convention. The most important development of the boundary water regimes between the United States and Mexico is the establishment of the International Boundary Waters Commission (*ibwc*), which is responsible not only for coordination and planning, but also for the Dispute Settlement (DS). The 1973 Minutes are significant in terms of the responsibility of the parties to limit the salinity (*ls*) of the boundary waters, which is one of the constituent elements of the regime of environmental protection.

[709] Agreement Conforming Minute 242 of the International Boundary Commission, the United States-Mexico, August 30, 1973, *USTIAS*.No.770.

8.4. United States and Canada Boundary Water Regime

The 1909 Boundary Waters Treaty between Canada and the United States[710] is an early 20th century treaty that reflects a harmonized legal regime. The preliminary provision of the Treaty defines the boundary waters between Canada and the United States, as:

> The waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the United States and Dominion of Canada passes, including all bays, arms and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such lakes, rivers, and waterways, or the waters of the rivers flowing across the boundary.

This article takes a broader boundary water approach than the 1906 Convention regulating the boundary waters between the United States and Mexico. The 1909 Treaty includes tributary waters, which in their natural channels would flow across borders into all types of bodies of water. The other important features of the 1909 Treaty include the legal aspects of navigational use, non-navigational uses and the environmental protection of the watercourses between Canada and the United States. They are: 1) for the benefit of commerce and navigation the parties of the 1909 Treaty respect the acquired rights with regard to navigation; 2) the equitable apportionment of waters regarding non-navigational uses; and 3) the prohibition of pollution on either side, which may cause injury to health or property.[711] These instrumental provisions of the Treaty harmonize the legal regimes. Article I provides that:

> The High Contracting Parties agree that the navigation of all navigable boundary waters shall forever continue free and open for the purposes of commerce to the inhabitants and to the ships, vessels, and boats of both countries equally, subject, however, to any laws and regulations of either country, within its own territory, not inconsistent with such privilege of free navigation and applying equally and without discrimination to the inhabitants, ships, vessels, and boats of both countries.

Article 1 further sets out:

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[710] Article 1 of Treaty between Great Britain and the United States relating to boundary waters and questions arising between the United States and Canada see, *ST/SER.B/12*, Legislative series Treaty No.79.

[711] Ibid, Articles III, VI and IV.

> So long as this treaty shall remain in force, this same right of navigation shall extend to the waters of Lake Michigan and to all canals connecting boundary waters, and now existing or which may hereafter be constructed on either side of the line. Either of the High Contracting Parties may adopt rules and regulations governing the use of such canals within its own territory and may charge tolls for the use thereof, but all such rules and regulations and all tolls charged shall apply alike to the subjects or citizens of the High Contracting Parties and the ships, vessels, and boats of both of the High Contracting Parties, and they shall be placed on terms of equality in the use thereof.

As to the unity of the drainage basin, it is argued that the 1909 Treaty "deliberately rejected the concept of the unity of a drainage basin. In it they separated boundary waters from tributary waters flowing into boundary waters and from waters flowing out of the boundary waters."[712] However, it is accepted that Article II somehow recognizes the interdependence of all waters in the basin, providing the right of one State to divert non-boundary waters so as to not cause material injury to the navigational use of the other State in the basin. Article II provides that:

> Each of the High Contracting Parties reserves to itself or to the several State Governments on the one side and the Dominion Provincial Governments on the other as the case may be, subject to any treaty provisions now existing with respect thereto, the exclusive jurisdiction and control over the use of diversion, whether temporary or permanent, of all waters on its own side on the line which in their natural channels would flow across the boundary or into boundary waters.[713]

It must also be noted here that Article II, reserving sovereign right has been a matter of controversy, embodied in the 1895 pronouncement of the United States' Attorney General Harmon concerning the dispute with Mexico, which asserts that a State may do as it pleases with the waters in the territories over which it has sovereignty, without regard to liability or obligation of any sort to downstream interests.[714] This so-called Harmon Doctrine implied an absolute sovereignty theory in that dispute, arguing that a State may dispose freely of the waters flowing in its territory without any considerations to others. This was an argument put forward by the United States in its dealings with Mexico, and also later in its dealings with Canada. It is important to note here that in response to Canada's plan to divert water from the Columbia River into the Fraser Basin, the United State argued a prior appropriation right instead of the reservation of a sovereign right, which had been the previous United States position against

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[712] Broune, 1997, p.299.
[713] Article II, *ST/SER.B/12,* Legislative series Treaty No.79.
[714] McCaffey, 2001, pp.76-112.

Mexico. Initially Canada had argued that a State cannot lawfully utilize the waters of an international drainage basin in its territory if its doing so will cause injury in the territory of a co-basin State.

Article II has been the subject of an intensive discussion of international jurisprudence resulting from the 1895 pronouncement of Attorney General Harmon. The opinions of two contemporary leading legal experts on international water law are noteworthy in this regard. According to Charles Bourne, Article II incorporates the Harmon Doctrine, stating that it is clear in the article's language, "which could hardly be more explicit."[715] However, according to McCaffrey, this view is "misplaced." [716] McCaffrey claims that when the United States repudiated the Harmon Doctrine, this undermined Canada's interpretation of Article II. The controversial issues concerning Article II were settled in the 1960's when the United States and Canada signed a treaty of cooperative development for the Columbia River Basin.[717]

In Article III, the Parties agree to maintain the natural level or flow of the boundary waters within their respective jurisdictions. Any changes are subject to decisions by the International Joint Commission as established by the 1909 Treaty. The foregoing provisions of Article III are not intended to limit or interfere with the existing rights of the Parties. Except by special agreement, the Parties are not permitted to raise the natural level of waters on the other side of the boundary unless approved by the aforementioned International Joint Commission. According to Article IV, the Parties further agree that boundary waters are not to be polluted on either side to the injury of health or property of the other.

According to Article V, the Parties are required to limit the diversion of waters from the Niagara River so that the level of Lake Erie and the flow of the stream shall not be appreciably affected. The aim is to accomplish the objectives with the least possible injury. No diversion of the waters of the Niagara River above the fall from the natural course and stream thereof is to be permitted except for the purposes and to the extent provided. Within the limits of Article V, the United States may authorize and permit the diversion of the waters of the river above the Falls of Niagara within the State of New York, for power purposes, not to exceeded in the aggregate a daily diversion at the rate of twenty thousand cubic feet of water per second. Canada, or the Province of Ontario, may authorize and permit a diversion (within the province of Ontario) of the waters of the river above the Falls of Niagara for the power purposes, not to exceeded in the aggregate a daily diversion at the rate of thirty-six thousand cubic feet of

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[715] Bourne, 1997, p.326.

[716] McCaffrey, 2001, p.108.

[717] Treaty relating to Cooperative Development of the Water Resources of the Columbia River Basin 1961 see, *ST/SER.B/12*, Legislative series Treaty No.65. This treaty will be looked at after exploring the development in the first half of the 20th century of North American legal regimes of international watercourses.

water per second. The prohibitions of Article V are not to be applied to the diversion of water for sanitary or domestic purposes, or for the service of canals for the purposes of navigation.

The United States and Canada Treaty[718] concerning the diversion of the Niagara River replaced the provisions of Article V. According to Article VI, the St.Mary and Milk Rivers and their tributaries - in the state of Montana and the provinces of Alberta and Saskatchewan - are to be "treated as one stream for the purposes of irrigation and power, and the waters thereof shall be apportioned equally between the two countries,[719] but in making such equal apportionment more than half may be taken from one river and less than half from the other by either country so as to afford a more beneficial use to each." There are provisions for the division of such waters during the irrigation season. The United States is annually entitled to a prior appropriation of 500 cubic feet per second of the waters of the Milk River, or as much of such amount as constitutes three-fourths of its natural flow between the 1st of April and 31st of October, inclusive. Canada is entitled to a prior appropriation of 500 cubic feet per second of the flow of St. Mary River, or as much of such amount as constitutes three-fourths of its natural flow.

The channel of the Milk River in Canada may be used by the United States for conveyance, while passing through Canadian territory, of waters diverted from the St. Mary River. It should be noted that the provisions of disputed Article II of the 1909 Treaty apply to any injury resulting to property in Canada from the conveyance of such waters through the Milk River. Further, the reclamation officers of the United States and irrigation officers of Canada under the direction of the International Joint Commission are to, from time to time, make the measurement and apportionment of the water to be used by each country jointly. Provisions for the establishment of the International Joint Commission are provided for in Article VII. It is to be comprised of six commissioners, three each on the part of the United States and Canada. According to Article VIII, the Commission is to have jurisdiction over and shall pass upon judgement all cases involving the use or obstruction or diversion of waters governed under Articles III or IV. The Parties are to have equal and similar rights in the use of the boundary waters. The order of precedence among the various uses is enumerated in Article VIII. No use is permitted to conflict with or restrains any other use, which is given preference over it in this order of precedence:

1) Uses for domestic and sanitary purposes;

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[718] The 1950 Treaty between the United States Canada see, *ST/SER.B/12*, Legislative series Treaty No.59.

[719] It is noteworthy that recognizing tributaries as one stream is found in the 1995 Mekong Agreement and the 1995 SADC Protocol.

2) Uses for navigation, including the service of canals for the purposes of navigation; and
3) Uses for power and for irrigation purposes.[720]

The above provisions are not applied so as to disturb any existing uses of the boundary waters on either side of the boundary. The requirement for an equal division may be suspended according to the discretion of the Commission in cases of temporary diversions along boundary waters at points where such equal division cannot be made advantageously on account of local conditions, and where such diversion does not diminish elsewhere the amount available for use on the other side. The Commission has the discretion to give approval in any case conditional upon the construction of remedial or protective works to compensate so far as possible for the particular use or diversion proposed, and in such cases may require that suitable and adequate provisions, as approved by the Commission, be made for the protection and indemnity against injury of all interests on the other side of the line redundant.

Article VIII provides further powers of the Commission as follows: In cases involving the natural level of waters on either side of the line as a result of the construction or maintenance on the other side of remedial or protective works or dams or other obstructions in boundary waters flowing there from, or in waters below the boundary in rivers flowing across the boundary, the Commission shall require, as a condition of its approval thereof, that suitable and adequate provisions, approved by it, be made for the protection and indemnity of all interests on the other side of the line which may be injured thereby. The majority decision of the Commissioners is decisive. In case of a divided opinion to any question or matter presented to it for decision, the Commissioners on each side shall make separate reports to their own Government. The Parties are required to endeavor to agree upon an adjustment of the question or matter of difference. If an agreement is reached between them, it is to be reduced to writing in the form of a protocol and communicated to the Commissioners, who are to take such further proceedings as necessary to carry out such agreement.

The Parties agree, in Article IX, that any questions or matters of difference arising between them involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along the common frontier between the United States and Canada are to be referred to the Commission for examination and report whenever either the Governments of the United States or Canada request that such questions or matters of difference be so referred. The Commission is authorized to examine and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any

[720] In this order of priority, note that drinking water use is in the first order where as the navigational use and irrigation in second and third order, respectively.

restrictions or exceptions which may be imposed with respect to the terms of the reference. The reports of the Commission are not to be regarded as decisions of the questions or matters so submitted either on the facts or the law, and shall in no way have the character of an arbitral award. The Commission is to make a joint report to both Governments in all cases in which all or a majority of the Joint Commissioners agree, and in case of disagreement the minority may make a joint report to both governments, or separate reports to their respective Governments. In case the Commission is evenly divided upon any question or matter referred to it for report, the Commissioners on each side shall make separate reports to their own government.

According to Article XI, the same procedure is to apply to any questions or matters of difference arising between the Parties involving the rights, obligations, or interests of the United States or Canada either in relation to each other or to their respective inhabitants. Questions or matters shall thereafter be referred for decision by the Parties to an umpire chosen in accordance with the procedure prescribed in the fourth, fifth and sixth paragraphs of Article XLV of the 1907 Hague Convention for the Pacific Settlement of International Disputes. The umpire is to have power to render a final decision with respect to those matters and questions so referred on which the Commission failed to agree. The Commission may adopt rules of procedure in accordance with justice and equity, and may make such examinations in person and through agents or employees as may be deemed necessary.

Describing the United States and Canada boundary waters regime, it should be noted that the 1909 Treaty provides for principles and mechanisms not only to resolve disputes but also to prevent future ones, primarily those concerning water quantity and water quality along the boundary between Canada and the United States. The Treaty requires that the Commission gives all interested parties a "convenient opportunity to be heard" on matters under consideration. The Commission invites public participation and advice when it undertakes studies, when it deals with orders of approval and when it prepares reports to Governments. Several others treaties were entered into by the Parties, and within the framework of the 1909 Treaty.

The boundarywaters legal regimes between Canada and the United States further developed with the 1925 Agreement and Protocol regulating the levels of the Lake Woods.[721] As to the boundary waters, the 1938 Convention between the United States and Canada provided for an emergency regulation of the level of the Rainy Lake waters,[722] which was enhanced by the 1941 Exchange of Notes concerning the temporary raising of the level of Lake St. Francis during the low water periods with respect to

[721] *ST/SER.B/12*, Legislative series Treaty No.50.
[722] Ibid, Legislative series Treaty No.52.

use of waters relating to hydroelectricity development.[723] The 1943 Exchange of Notes established the St. Lawrence River Joint Board of Engineers,[724] providing technical management.

In the second half of the 20th century, North American treaties further enhanced regimes of the uses and protection of international watercourses, which were established by the earlier treaties. The 1950 Treaty between the United States and Canada deals with the uses of waters of the Niagara River, and the 1954 Exchange of Notes relates to the use of the Niagara Falls.[725] The 1952 Exchange of Notes, constituting an agreement between the United States and Canada, deals with the St. Lawrence Seaway Project including the construction of works via river to the sea, which clearly reflects the navigational use.[726] Further, the 1954 Exchange of Notes between Canada and the United States sets out reciprocal rights and duties of the Parties regarding navigation on the St. Lawrence River.[727] In addition, there are Joint Regulations contained in the Exchange of Notes of 1959, which is an administrative arrangement concerning equitable agreement with respect to tolls. The St. Lawrence seaway was opened with the 1959 Exchange of Notes between the two countries.[728]

Since the 1909 Boundary Waters Treaty between the United States and Canada is the umbrella agreement, the boundary water regime between the two countries can be illustrated in the following table:

	CA	SP	IM	DS
The 1909 Treaty	*ibwa*	*rsr/esr* *op* *arn* *ea* *prp*	*ijc*	*ad*

CA = Concepts and Approaches (*ibra* = *international boundary water approach*; SP = Substantive Principles (*rsr* = *reservation of sovereign right*; *esr* = *equal and similar rights*; op = *order of precedence*; arn = *acquired rights of navigation*; *ea* = *equitable apportionment*; *prp* = *prohibition of pollution*); IM = Implementation Mechanisms (ijc = international joint commission); DS = Dispute Settlement venues (ad = adjudication)

This table shows that the scope of application of the 1909 Treaty is broader in terms of the Concept and Approach (CA), which has adopted the international boundary water approach (*ibwa)* including those tributary waters which would naturally flow across borders. However, this does not recognize the international drainage basin (*idb*) concept as such. As to the

[723] Ibid, Legislative series Treaty No.54.
[724] Ibid, Legislative series Treaty No.56.
[725] Ibid, Legislative series Treaty No.50 and 62.
[726] Ibid, Legislative series Treaty No.60.
[727] Ibid, Legislative series Treaty No.62.
[728] Ibid, Legislative series Treaty No.64.

Substantive Principle (SP), the 1909 Treaty is based on the reservation of sovereign right (*rsr),* which has been a matter of intense debate through out the 20th century among the riparian States of the world as well as experts, especially concerning to the theories of water rights. Nonetheless, the 1909 Treaty recognizes the equal and similar rights (*esr*) of the riparian States for specific purposes. For example, for the navigational use the 1909 Treaty respects the acquired rights of navigation *(arn)*: for the non-navigational uses it respects the equitable apportionment (*ea*); and for the protection of the environment there is the prohibition of pollution *(prp)* on either side. At the same time, the Treaty establishes the order of precedence *(op*) among the various uses that are enumerated in Article VIII. No use is permitted that conflicts with or restrains any other use, and there is an order of preference first and foremost for domestic and sanitary purposes, secondarily for navigation, and finally for power and irrigation purposes. The International Joint Commission (*ijc*) constitutes the Implementation Mechanisms (IM) of the regime. This is responsible for coordination, information, planning, and involving the public, as well as for Dispute Settlement (DS).

Further development of the boundary water regime between the United States and Canada can be seen in the treaties of the 1960's and 1970's.

8.5. Columbia River Treaties

North American watercourse treaties of the 1960's begin to focus on the coordinated river regulations, particularly between Canada and the Unites States, which deals among others with the hydroelectricity production. The 1961 Columbia River Treaty is one of the remarkable treaties of the 1960's, which recognized the international drainage basin as a unitary whole.[729] The disagreements between the United States and Canada concerning Article II of the 1909 Treaty were resolved in the 1961 Columbia Treaty. In the case of the Columbia River, the United States is the lower riparian and Canada is the upper riparian State. While in its case with Mexico concerning the Rio Grande, the United States asserted the reservation of sovereign rights, so did Canada against the United States concerning the Columbia River. However, both the United States and Canada agreed upon an integrated management of their boundary waters in that the parties recognized the lower riparian rights, i.e. Canada agreed with the United States to construct large water dams which would primarily benefit the United States. In return, Canada is entitled to additional power resulting from its projects as well as payment from the United States to Canada for flood control. This also includes payment to Canada in return for the downstream benefits of upstream storage. This is considered to be of mutual benefit to the parties. Although the parties have aimed at the *optimal use* of the Columbia River and its development, they are bound by

[729] *ST/SER.B/12,* Legislative series Treaty No.65.

the rights and duties of riparian States concerning the equitable utilization and balanced use with protection.

The 1964 Exchange of Notes[730] constituted an Agreement between Canada and the United States, authorizing the Canadian entitlement purchase agreement, which was provided for under the 1961 Columbia River Treaty. Of the several specific agreements between Canada and the United States, the Columbia River Treaty regime is particularly important, not only with respect to the United States and Canada, but also in the context of the 1960's treaties on the worldwide basis, taking the basin wide approach. Under the 1964 Exchange of Notes, the parties designated their respective administrators for the hydropower authority. This treaty secures downstream power benefits for the upstream States. For example, Canada is entitled to first rights of purchase of energy from United States. The treaty clearly defines items, terms of payment, flood control, and compensation. Concerning dispute settlement, the 1964 Exchange of Notes provides that:

> Any dispute arising under this agreement, including but without limitation to a dispute as to whether any event requiring compensation has occurred, the amount of compensation due or the amount of any over-delivery of power, is agreed to be a difference under the treaty to be settled in accordance with the provisions of Article XVI of the treaty. Any determination of compensation in money or power due shall be confined to the actual loss incurred in accordance with the principles contained in section 6 of this agreement.[731]

The 1969 Exchange of Notes[732] authorized construction of a Temporary Cofferdam at Niagara Falls, which is allowed under Article III of the 1909 Boundary Waters Treaty. This was done upon the request of the Commission to preserve and enhance the beauty of the American Falls at Niagara. According to the 1969 Exchange of Notes, neither the United States nor Canada are responsible for physical injury or damage to persons or property in the territory of the other, which may be caused by any act authorized or provided for by this agreement.

The issues of the boundary water quality protection became the focus of the 1970's treaties in North America. For example, in order to improve the deteriorating water quality in the Great Lakes Region, the United States and Canada concluded the 1978 Great Lakes Water Quality Agreement (GLWQA).[733] Article II of the 1978 Agreement states the objectives: The Purpose of the Parties is to restore and maintain the chemical, physical, and

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[730] Exchange of Notes 1964,see<http://www.internationalwaterlaw.org/>(visited Nov.11, 2004).
[731] Ibid.
[732] Ibid.
[733] Great Lakes Water Quality Agreement, November 22, 1978, see 1153 *UNTS*,187.

biological integrity of the waters of the Great Lake Basin and its ecosystem. To achieve these objectives, the Parties have agreed to make a maximum effort to develop programs, practices and technology necessary for better understanding of the Great Lakes Basin Ecosystem and to eliminate or reduce to the maximum extent practicable the discharge of pollutants into the Great Lakes System.[734] Article II also focuses on the ecosystem of the region and the integrated protection and use of the watercourses. This is one of the important developments of the 1970's treaties, which recognized the drainage basin in a larger context of the whole ecosystem. In addition, the Great Lakes Water Quality Agreement is one of the most advanced legal instruments for environmental protection in terms of watercourse use and management.

It is noteworthy that the Parties have agreed on a provision for public participation in the decision-making of the planned projects. In general terms, the agreement defines the ecosystem as the interconnected components of air, land, water (including groundwater) and living organisms - including humans - within the drainage basin.[735]

The 1978 Agreement regulates pollution by setting emission standards instead of prohibiting pollution in absolute terms.[736] The agreement does not make any explicit reference to the no-harm rule.[737] However, the Parties have agreed on the general objective of restoring the original water quality of the lake. In the early 20th century, the Unites States and Canada agreed that the boundary waters should not be polluted on either side to the injury of health or property of the other side. The International Joint Commission established by the 1909 Boundary Waters Treaty has investigated several cases of pollution.

As regards Rainy River and the Lake of Woods, the Commission found that the recreational industry had suffered losses. Due to pollution, the water was unsafe for bathing, unsuitable for fishing, detrimental for fish propagation and aesthetically offensive.[738] As the Commission was asked to investigate whether either side of the boundary waters had been polluted to such an extent that it was causing or likely to cause injury to health or property on the other side of the boundary, it found pollution causing harm to the waters of Lake Erie, Lake Ontario and the international section of the St Lawrence River.[739] Regarding the Garrison Diversion Unit, the Commission concluded that the construction and operation of the said unit, as envisaged by the United States, would cause injury to the health and property in Canada as a result of adverse impacts on the water

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[734] Ibid.

[735] Articles I(g) and Article II(a) of the GLWQA, 1978, 30 *UNTS*, 1333, 1153.

[736] *United States Treaty and Other International Agreements*, 30, p.1384.

[737] Ibid.

[738] *International Joint Commission Report on the Pollution of Rainy River and Lake of the Woods*, Washington, DC, and Ottawa, 1965, p.29.

[739] *International Joint Commission Report on Pollution of Lake Erie, Lake Ontario, and the International Section of St. Lawrence River*, 1970,p.161.

quality.[740] The Commission also found water quantity reduction of the Polar Rivers, as a result of appropriation of the waters of the said rivers.[741] In the case of the Flathead River, the Commission also found that coalmines would pollute the waters of the river, potentially having a serious impact on fisheries in the waters of the river.[742] This indicates that it is not only the treaty practice, but also a judicial remedy against the pollution of international watercourses that has been developed in North American practice, particularly between the United States and Canada.

The development of the regimes of the uses and protection of the boundary waters between the United States and Canada, in terms of the independent and dependent variables, can be illustrated in the following table:

	CA	SP	IM	DS
The 1961 Columbia Treaty	*idb*	*mb/dsb*	*ijc*	*ad*
The 1964 Exchange of Notes	*idb*	*mb*	ijc/*adm*	*ad*
The 1969 Exchange of Notes	*idb*	*mb*	*ijc*	*ad*
The 1978 Agreement	*ipu*	*ses /zdtc*	*ijc/pup*	*ad*

CA = Concepts and Approaches (*idb* = *international drainage basin*); SP = Substantive Principles (*mb* = *mutual benefits*; *dbs* = *downstream benefits*; *ses* = *setting emission standards*; *zdtc* = *zero discharge of toxic contaminants*); IM = Implementation Mechanisms (*ijc* = *international joint commission*; *adm* = *administrators*; *pup* = *public participation*); DS = Dispute Settlement venues (*ad* = *adjudicatio*n)

This table shows that the Columbia River regime adopts the international drainage basin (*idb*) in terms if the Concept and Approach (CA). A noteworthy principle adopted by the Columbia regime is the downstream benefits (*dsb*) for the upstream States. Mutual benefit (*mb*) of the parties is the Substantive Principles (SP) of the regimes, which is embedded with the regulating pollution by setting emission standards (*ses*) within the philosophy of zero discharge of toxic contaminants (*zdtc*). The International Joint Commission (*ijc*) is the central venue concerning the boundary water Dispute Settlement (DS). However, coordination, information, and the concept of public participation (*pup*) are also found equally developed as a practice in the boundary water regime between the United States and Canada. Beginning from 1909 to the 1970's, the North American boundary water regimes have clearly moved from the initial piecemeal arrangement towards the integrated management paradigm

[740] *International Joint Commission, Transboundary Implications of the Garrison Diversion Unit,* 1977, p.131.
[741] *International Joint Commission, Water Quality in the Polar River Basin,* 1981, p.210.
[742] *Impacts of a Proposed Coal Mine in the Flathead River Basin*, 1988, p.3.

Apart from the North American riparian State treaty practices, it is relevant to note that the allotment of water to a particular use was defined as the principle of equitable appropriation by the United States' Courts,[743] and the legal practice of the Courts has played a significant part in defining the equitable utilization of shared waters of the US (federal States). Bear in mind that the legal regimes between the United States and Canada and those between the United States and Mexico have developed in different ways mainly because of the contrasting nature of the water quality and quantity on the respective borders. For example, there is fixed quota of water allocation between the United States and Mexico, while the emphasis between the United States and Canada is on the boundary waters protection. As the use allocation does not seem to be at stake between the United States and Canada with respect to boundary waters, there exists a more harmonized legal regime than that between the United States and Mexico. Since the 1990's, Canada and the United States have held bilateral discussions and are expected to conclude a treaty on transfrontier air pollution in future, one that is likely to be similar to the 1978 Agreement on Water Quality of the Great Lakes (in the negotiations, acid rain is one of the key issues linked with water quality).

8.6. Appraisal

A feature of the initial treaty practice of North America is that the freedom of navigation was recognized in the 18th century treaties between Great Britain and the United States, which was later enhanced by the 19th century treaties. The Supreme Court of the United States also considered that it was the obligation of the United States, under treaties and international law, to preserve the navigability of the Rio Grande waters.[744] The Court recognized the obligation as equally important to all nations and their respective citizens. The court further declared that breach of obligations or international duty to Mexico, preserving the navigability of the Rio Grande, constitutes an equal injury and wrong to the people of the United States.

The legal regimes of non-navigational uses of North American rivers emerged with the early 20th century treaties. The 1906 Convention between the United States and Mexico concerning the Rio Grande adopted the principle of equitable distribution of water for irrigation, focusing on non-navigational uses. As a result of the growing demand and limited water supply, a system of quotas was established under the 1906 Convention, which was updated by the 1944 Treaty between the United States and Mexico, fixing the share of water use allocation for Mexico and the United States as to the Rio Grande and Colorado rivers. Regarding the Rio Grande, the United States is obliged to release the fixed quota of waters to Mexico,

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[743] The important cases are: *Kansas v. Colorado; Connecticut v. Massachusetts*; *New Jersey v. New York;* and *Wyoming v. Illinois*. These cases are discussed concerning development of the legal regimes through some national court practice see, Part VI, Chapter 16.6.

[744] *United States v. Rio Grande Dam & Irrigation Co.* (174 US,1899, p.690).

which in turn is obliged to release the fixed quotas to the Unites States as to the Colorado. The increasing salinity remains a problem between the two countries. Whether Mexico should be entitled to a greater share seems to be an ongoing issue of debate at the moment.

In contrast to the regime between the United States and Mexico, the United States and Canada have achieved a degree of success in the harmonious development and protection of the boundary waters, thanks to sufficient availability of waters between the two countries, unlike the United States and Mexico. As to the regime of non-navigational uses and the environmental protection, Article II of the 1909 Treaty between the United States and Canada pertains to the development of the theory of absolute sovereignty and absolute territorial integrity of rivers. Article II reserved the sovereign right and exclusive jurisdiction and control over the use of diversion, whether temporary or permanent, of all waters on its own side of the line, which in their natural channels would flow across the boundary or into boundary waters. However, due to the recognition of the principle of equitable utilization neither the theory of absolute sovereignty nor the theory of absolute territorial integrity are accepted in international law. Nonetheless, it must be realized that the arguments provided for the further development of the modern theory of equitable utilization, regulating the different regimes of uses and protection of international watercourses.

Cooperative shared water management developed in the 1960's and the 1970's, particularly between the United States and Canada, which marked the end of the controversies concerning Article II of the 1909 Treaty. In the 1970's, development further focused on the protection and improvement of the water quality. In this respect, Article II of the 1978 Agreement on Great Lakes Water Quality is noteworthy. The purpose of the Parties is to restore and maintain the chemical, physical, and biological integrity of the waters. Presently, acid rain is one of the key agenda items for further negotiation between the United States and Canada.

PART IV: CASE STUDIES OF THE 1990's TREATIES

Having dealt with the general legal development of international law governing international watercourses, the focus of the study is now on some specific international basins. What follows is a detailed examination of a few selected watercourse treaties from various continents, which were negotiated in the 1990's. Earlier in the study, it was suggested that in the early 19th century, with the recognition of the concept of the international river and the freedom of navigation,[745] some rivers separating or traversing two or more States were in effect internationalized,[746] with respect to the regime of navigational use. Examples of such internationalization of rivers include the initial development of the legal regimes the European rivers Danube and Rhine,[747] the Asian rivers Amur, Sungari and Ussuri,[748] the African rivers Congo and Niger,[749] and the South American rivers Parana and Paraguay.[750]

The freedom of navigation on international rivers was recognized in the late 18th century. It is only in the second half of the 19th century that the legal regime of non-navigational uses began to emerge, and only as subordinate to navigational use. However, controversy remained as to the substantive principles of the regime of non-navigational uses for a long period of time. At the same time, international watercourse dispute settlement procedures were varied and there were competing paradigms of international watercourse management, reflecting the debate over piecemeal vs. integrated management.

From the time of the internationalization of rivers in the early 19th century up until the 1960's, there were 253 recorded international river agreements concluded by the world's riparian States for purposes other than navigational use.[751] With the increasing number of international water resource development projects in the 1960's and 1970's, the detrimental effect on the environment of multiple uses on international watercourses increased in complexity and magnitude, broadening the need for understanding of protection and improvement of watercourses. This understanding was translated into treaty practice, and by the late 1990's

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[745] The Final Act of the Congress of Vienna, June 9, 1815, see *MNRGT*, 2nd, Ser. 427; Oakes and Mowat, (*GETNC*) 1918, p.37.

[746] The possible legal difference between international rivers and internationalized rivers is that where a river is internationalized under a treaty, like neutralization, it cannot be revoked without the consent of State signatories.

[747] Articles 108 and 109 of the 1815 Final Act of the Congress of Vienna recognized the freedom of navigation on the Danube and Rhine rivers.

[748] The 1858 Treaty of Aighoun signed by China and Russia, providing freedom of navigation only to the vessels of the two States.

[749] The General Act of the Conference of Berlin, February 26, 1885, see *MNRGT*, 3rd Ser. 414.

[750] Colombos, 1967, p.257.

[751] *ST/LEG/SRR.B/12* (1963, pp.3-921).

fresh water-related environmental provisions were contained in over 3,600 bilateral or multilateral agreements.[752]

The riparian State treaty practices of different continents points to the 1990's as a turning point for harmonized legal regimes of international watercourses. In the context of noteworthy trends as they emerged through riparian State treaty practices, we can enumerate a few of these riparian State practices from different continents, and point to some of the treaties that served as landmark developments in the harmonization of the legal regimes: the 1992 ECE Helsinki Convention; the 1994 Danube Convention; the 1995 Mekong Agreement; the 1995 SADC Protocol; the 1998 Rhine Convention; and the 1998 Peru-Ecuador Treaty, which is an elaboration of the 1978 Amazon Treaty. These treaties indicate that harmonization of the legal regimes of international watercourses evolved despite the unique hydrological and hydro-political realities of the specific watercourses.

As illustrated by the tables in the previous part of the study, the 1990's treaties from Europe, Asia, Africa and South America clearly incorporate the important constituent elements of the integrated management paradigm. Of the important developments during the 1990's, the three regional framework treaties are: the 1992 ECE Helsinki Convention; the 1995 Mekong Agreement; and the 1995 SADC Protocol. These treaties signify a groundbreaking development in the law of international watercourses in terms of concepts and approaches, substantive principles, institutional mechanisms and dispute settlement procedures.

As illustrated also in tables from various continents earlier in the study, in the 1990's there has been a remarkable change in the perspective of riparian States concerning the uses and protection of international watercourses. The world's riparian States' perspectives have changed from a narrow scope of the international river to the international drainage basin that recognizes the nature of the basin as part of the hydrological unit. The substantive principles have also changed from the arbitrary use based on absolute sovereignty, with all the various interpretation of sovereignty ascribed to it, eventually ending in the establishment of the principle of equitable utilization. As well, the management modality of international watercourses changed from a piecemeal to an integrated paradigm. Thus, it is deemed necessary to discuss in some detail a few selected treaties of the 1990's, which concerns the basins of Europe (the international basins of Europe), Asia (Mekong and Himalayan basin), Africa (Southern African basins) and South America (Amazon), respectively. These selected case studies reflect the slow transition from holistic to harmonized legal approaches, and then from a piecemeal to an integrated approach to uses, and eventually between uses and protection.

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[752] Ohlsson, 1999, p.187. A table of important international watercourse agreements see, Lammers, 1984, pp.124-147.

CHAPTER 9: INTERNATIONAL WATER BASINS OF EUROPE

9.1. Introduction

An important trend of the 1990's treaties of Europe is that in addition to governing the use of international basins, the protection of such basins is incorporated, providing an integrated perspective of the regimes. We shall analyze the 1992 ECE Helsinki Convention, which has adopted an integrated perspective towards the legal regimes of the protection and uses of transboundary watercourses and international lakes, which cover the European drainage basins shared by two or more States. There are twenty-five major drainage basins of common interest to the European States, out of which there are thirteen river basins, covering over 72 000 km2, with a number of international lakes and transboundary groundwaters.[753]

The European international watercourse treaties, from the 1648 Peace of Westphalia to the early 1990's, have reflected the needs and interests of riparian States concerning international rivers and lakes. The primary concerns, early on, were about riparian State boundaries, drinking waters, fishing, navigation, satisfying the demands of agriculture and industry as well as for the disposal of waste.[754] Since the early 19th century, the treaty practice provided for the freedom of navigation, and consequently the promotion of trade and commerce. In the early 20th century, a few multilateral legal arrangements were made concerning non-navigational uses, such as hydroelectricity development. From the 1950's, the riparian States of European international rivers have concluded several bilateral and multilateral agreements generally concerning multiple uses, and in a few cases protection as well.

In the early 1950's, the United Nations Economic Commission for Europe (ECE) began its study concerning the legal aspects of the protection and use of international rivers and lakes of common interests of the riparian States of Europe. But it wasn't until 1992 that the ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (hereinafter referred to as the "1992 ECE Helsinki Convention") was adopted.[755] It is a framework agreement, harmonizing the uses and protection.

9.2. Concepts and Approaches

The study of international treaties in the earlier part of the study reveal that the use of concepts and approaches in Europe are distinctive from the other continents, which is clearly shown in the 1992 ECE Helsinki Convention by adopting the concept of the transboundary watercourses and international

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[753] *Protection and Use of Transboundary Watercourses and International Lakes in Europe*, A paper presented by Secretariat of the UN Economic Commission for Europe, Environment and Human Settlement Division, Palais des Nations, 8-14, see 18 *NRF*, 1994, pp.171-180.

[754] This shows a multiple use of rivers, however protection of rivers was lacking.

[755] See, 31 *ILM*, 1992, p.1312.

lakes. For the purposes of the Convention, Article 1 defines transboundary waters to mean any surface or ground waters which mark, cross or are located on boundaries between two or more States; wherever transboundary waters flow directly into the sea, these transboundary waters end at a straight line across their respective mouths between points on the low-water line of their banks.[756]

In this definition, the term transboundary watercourses signifies waters crossing State boundaries and the term international lakes suggests those bodies of water surrounded by two or more State boundaries. Birnie and Boyle suggest that the 1992 ECE Helsinki Convention essentially adopts the traditional international river definition adopted by the 1815 Congress of Vienna.[757] The examination of 1990's treaty practice in this study suggests that the traditional international river concept has been replaced by the international river basin through the 1990's treaty practices of Asia, Africa and South & North America (the latter in the 1970's). It is true that the 1992 ECE Helsinki Convention does not specify the term international drainage basin as such. But without actually mentioning the term international drainage basin, Article 2 (d) of the Convention recognizes the concept of international drainage basin, implying the basin as a hydrological unit to be treated as a unitary whole. Particularly, it does so by recognizing the physical relationships between the surface waters and groundwaters.

Titled as it is in regard to the protection and use of transboundary watercourses and international lakes, the 1992 ECE Helsinki Convention is of particular interest to the purposes of our present study, as it is the first framework treaty which integrates the legal regimes of *protection* and *uses* of transboundary watercourses. This is a regional convention for Europe that may be seen as an example to be followed by other regions, harmonizing the regimes of protection and uses. Parties to the 1992 ECE Helsinki Convention, in the preamble, recognize the urgent need for the protection and use of transboundary watercourses and international lakes. The convention takes into account and emphasizes the need, through cooperation, for a balance between the protection and uses.

The balance and integration of regimes is provided for in the preamble of the convention, where it refers to adverse effects due to changes in conditions of transboundary watercourses and international lakes, on one hand, and the well being of the Member States, on the other. As to the harmony between the regime of protection and uses, the preamble stresses that the Parties should strengthen national and international measures to prevent, control and reduce the release of hazardous substances into the aquatic environment and to abate eutrophication and acidification, as well as pollution of the marine environment, in particular coastal areas, from land-based sources. This explicitly states that the 1992 ECE Helsinki

[756] Article 1(1) of the 1992 ECE Helsinki Convention represents a new kind of definition from the classic definition of international river.
[757] Birnie and Boyle, 2002, pp.299-300.

Convention recognizes the need for sustainable water management and protection of the environment.

The definitions of the various terms that are provided in Article 1 of the Convention are important, as they describe the basic elements of the regimes of protection and uses. This approach is also important for a comprehensive inventory of all sources of pollution, aiming to control pollution by setting emission standards. The 1992 ECE Helsinki Convention recognizes relationships between salt water and fresh waters as a part of the hydrological cycle. This is noteworthy from the point of view of the regimes of protection and uses. Another important expression defined in Article 1 of the Convention is "Transboundary impact". It provides that:

> 'Transboundary impact' means any significant adverse effect on the environment resulting from a change in the conditions of transboundary waters caused by a human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of a Party, within an area under the jurisdiction of another Party. Such effects on the environment include effects on human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; they also include effects on the cultural heritage or socio-economic conditions resulting from alterations to those factors.[758]

This definition takes a comprehensive approach to transboundary impact resulting from uses of transboundary watercourses, including not only the effects on human health and safety, flora, fauna, soil, air, water, climate, landscape, and historical monuments (or other physical structures or the interaction among these factors), but also include the effects upon the cultural heritage or socio-economic conditions. As for the purpose of the regimes of surface and ground waters, the Riparian Parties are defined as the Parties bordering the same transboundary waters. Joint body is defined as the bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between the Riparian Parties.

For the purpose of the regime of environmental protection, hazardous substances are defined by the Convention, listed as substances which are toxic, carcinogenic, mutagenic, teratogenic or bio-accumulative, especially when they are persistent.

Best Available Technology to be used in the protection of transboundary watercourses, is defined by the convention.[759] The 1992 ECE Helsinki Convention deals with pollution prevention, control and reduction, monitoring, research and development, exchange of information,

[758] Article 1(2) of the 1992 ECE Helsinki Convention.
[759] Annex I, ibid.

responsibility and liability, and protection of information.[760] Here we shall review and analyze these provisions from the point of view of the regimes of protection and uses.

Article 2 of the Convention includes general provisions relating to the regimes of protection, requiring Parties to take appropriate measures to prevent, control and reduces any transboundary impact, in particular:

> (a) To prevent, control and reduce pollution of waters causing or likely to cause transboundary impact;
> (b) To ensure that transboundary waters are used with the aim of ecologically sound and rational water management, conservation of water resources and environmental protection;
> (c) To ensure that transboundary waters are used in a reasonable and equitable way, taking into particular account their transboundary character, in the case of activities, which cause or are likely to cause transboundary impact; and
> (d) To ensure conservation and, where necessary, restoration of ecosystems. Appropriate measures to be taken by the Parties under the above mentioned (a), (b) and (d), indicating the regimes of environmental protection, harmonizes with the regime of uses mentioned in (c) ensuring reasonable and equitable use on the one hand, and protection from the transboundary impact, on the other.[761]

Apart from the above mentioned measures to be taken by the Parties, the general provisions of the Convention also provides for measures to be taken, at source where possible, for the prevention, control and reduction of water pollution as well as prevention of the transfer of pollution from one part of the environment to another.

9.2.1. ECE Protocol on Water and Health

The water and human health issues are incorporated within the concepts and approaches of the 1992 ECE Helsinki Convention, which are looked at in this section.

The 1999 Protocol related to the 1992 ECE Helsinki Convention aims to promote the health and well being of the people in their respective riparian States.[762] It is the individual and collective responsibility of the riparian States to promote human health, both in the national and international context concerning transboundary watercourses. To combat waterborne diseases, the objectives of the 1999 Protocol defined in Article 2 have all the markings of being based on the principle of sustainable development.

The scope of the Protocol, as described in Article 3, includes the surface fresh waters, groundwaters, estuaries, coastal waters, enclosed waters,

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[760] Articles 2-8, ibid.
[761] Article 2(1-4).
[762] See<http://www.unece.org/env/water/> (visited Nov.11, 2004).

water in the course of transport and wastewaters treatment. According to the general provisions provided for in Article 4, the Parties are obliged to take all appropriate measures to prevent, control and reduce water related diseases, including insuring adequate supply, sanitation, effective protection and a system of monitoring. The Protocol does not affect the rights and obligations of the Parties to the 1992 ECE Helsinki Convention.

In line with the notion of the 1992 ECE Helsinki Convention, the principles adopted by the Protocol are precautionary, polluter pays, sovereign right over the natural resources, intergenerational right, preventive measures, and appropriate administrative actions, which include social, economic and environmental values. Public access to information is considered to be vital according to the Protocol, with special considerations to the people vulnerable to waterborne diseases. Equitable access to waters, adequate in terms of quality and quantity, is recognized by the Protocol providing public as well as private water rights.

The Protocol spells out targets (in Article 6) aimed at access to drinking water and sanitation for everyone, and doing so in an integrated manner. The Parties of the Protocol are required, under Article 7, to review and assess the progress of the implementation of the Protocol, responding appropriately with comprehensive national and local surveillance methods, according to Article 8. The need for enhancement of awareness of water related issues among the general public is addressed in Article 9, stating the need for education, training, research development and information.

The Parties are required under Article 10 to make such information available to the public, assisting international cooperation is called for in Article 11, and the launching of joint actions is laid out in Article 12. Parties shall, on the basis of equality and reciprocity, achieve objectives of the 1999 ECE Protocol. Article 14 underlines the need for national legislation to support the international plan and vice versa. Article 15 provides for the procedures of the assessment of the compliance and review.

The rest of the provisions of the Protocol in Articles 16-26 deal with dispute settlement arrangement as well as procedural matters, including meetings of the Parties, secretariats, amendments, the right to vote, signature, ratifications, entry into force, withdrawal, depository and authentic texts, respectively.

9.3. Substantive Principles

The substantive principles adopted in the 1992 ECE Helsinki Convention are also distinctive from the other 1990's treaties from other continents. Without specifying the principle of equitable utilization as such, the Parties to the 1992 ECE Helsinki Convention shall to ensure that transboundary watercourses are used with the aim of ecologically sound and rational water management (Article 2 [b]), and to ensure that trasnsboundary watercourses are used in a reasonable and equitable way (Article 2 [c]). The terms reasonable and equitable in Article 2 of the Convention are similar to

Article II of the 1966 ILA Helsinki Rules, which defined the principle of equitable utilization. In addition, the aim of ecologically sound and rational water management is similar to the concept of sustainable development, which is the goal of the principle of equitable utilization, as defined in Articles 5, 6 and 7 of the 1997 UN Convention. In addition, the 1992 ECE Helsinki Convention sets out a number of guiding principles, which are substantive principles, balancing the regimes of protection and uses of transboundary watercourses. According to Article 2 (5), the Parties to the Convention are to be guided by the following principles:

> (a) The *precautionary principle*, by virtue of which action to avoid the potential transboundary impact of the release of hazardous substances shall not be postponed on the ground that scientific research has not fully proved a causal link between those substances, on the one hand, and the potential transboundary impact, on the other hand;
> (b) The *polluter pays principle*, by virtue of which costs of pollution prevention, control and reduction measures shall be borne by the polluter;
> (c) Water resources shall be managed so that the needs of the *present generations are met without compromising the ability of the future generations* to meet their own needs [emphasis added].[763]

This list of principles, which are not fully defined (but recognized by the Convention), includes the precautionary principle, the polluter pays principal and the principle of intergenerational right. These may be regarded as the cardinal principles of the regimes of environmental protection, requiring that the riparian State to take them into consideration when utilizing transboundary watercourses and international lakes. The Parties to the 1992 ECE Helsinki Convention are obliged to harmonize their policies, programs and strategies in implementing the guiding principles. The Riparian Parties are also obliged to cooperate on the basis of equality and reciprocity, concluding bilateral and multilateral agreements, covering the relevant catchment areas or its parts aiming at the prevention, control and reduction of transboundary impact and the protection of the environment of transboundary waters. The environment influenced by such waters includes the marine environment under the Convention, taking a harmonized approach between the regimes of salt and fresh waters.[764] The Convention requires the Parties to protect existing environmental conditions, as well as control of transboundary impact. In order to achieve such a balance between the protection and use of transboundary watercourses, the Parties are obliged to implement measures set down in the Convention, individually or jointly.

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[763] Article 2(5).

[764] This means that the Convention clearly takes a hydrological approach concerning the legal protection and use of transboundary watercourses.

Article 3 of the Convention, dealing with prevention, control and reduction of transboundary impacts, provides that "the Parties shall develop, adopt, implement and, as far as possible, render compatible relevant legal, administrative, economic, financial and technical measures." This includes the vital objectives of the regime of protection, i.e. pollution should be prevented, controlled and reduced at the source, where permission for waste-water discharges are issued. The permits for the wastewater discharges have to take into consideration the best available technology for dealing with hazardous substances.

The national authorities of the Parties to the 1992 ECE Helsinki Convention are held responsible for monitoring and control of discharges. A strict requirement is provided for regarding the protection of the environment in Article 3, where the quality of the ecosystem is at stake. Article 3 requires the treatment of municipal wastewater and reduction of nutrient inputs from industrial and municipal sources. According to the Convention, Best Environmental Practices[765] is to be available in combating transboundary impact, which means the reduction of inputs of nutrients and hazardous substances from diffuse sources, especially agriculture, and insuring that there be an environmental impact assessment (and other assessments), including sustainable water resources management. It is particularly important to note that the Convention aims towards a broader ecosystem approach, including contingency planning, and specific measures to prevent the pollution of groundwaters, as well as the risk of accidental pollution.

In preventing, controlling and reducing transboundary impacts, the Parties to the Convention are obliged to set-up emission limits for discharges from point sources into surface waters, specifically applicable to individual industrial sectors or industries, which are the source of most hazardous substances. The limits of discharges are to be based upon Best Available Technology. Appropriate measures mentioned in Paragraph 1 Article 3 seek to prevent, control and reduce the input of hazardous substances from point and diffuse sources into waters, which includes total or partial prohibition of the production or use of such substances. The Parties need to define water quality objectives, and adopt water quality criteria in preventing, controlling and reducing transboundary impact as well as by updating the Convention.[766]

As to the monitoring of the conditions of transboundary waters, Article 4 of the Convention obliges the Parties to establish monitoring programs and research and development, and Article 5 requires the Parties to cooperate in the conduct of research into and development of effective techniques for the prevention, control and reduction of transboundary

[765] The use of the expression "best environmental practices" is new in the watercourse related treaties. It is defined in Annex II of the Convention.

[766] Annex III concerning the "best environmental practices," seems to be over ambitious in the adjective used, raising the question "best" compared to what?.

impact, whether bilateral or multilateral, taking into account research activities pursued in relevant international forums, and finally to endeavor to initiate or intensify specific research programs.

Article 5 of the Convention, which focuses on research and development, requires the Parties to initiate or intensify specific research programs aimed, inter alia, at methods for assessment of the toxicity of hazardous substances and the noxiousness of pollutants. It also requires research aimed at improved knowledge regarding the occurrence, distribution and environmental effects of pollutants and the processes involved in their emission. As well, it requires the application of environmentally sound technologies, production and consumption cycles, and the phasing out of and/or substitution of substances likely to have transboundary impact. This means that research and development is required not only for the environmentally sound methods of disposal of hazardous substances, but also for improving the conditions of transboundary waters. Along these lines, research and development is called for later in Article 5, to strive for the development of environmentally sound water construction works, regulation techniques, physical and financial assessment of damage resulting from transboundary impact. The results of these research programs relevant to Article 5 are to be exchanged among the Parties in accordance with Article 6 of the Convention; "the Parties shall provide for the widest exchange of information, as early as possible, on issues covered by the provisions of this Convention."

An often controversial but important issue relating to transboundary watercourses is the responsibility and liability of the riparian States, regardless of whether it is related to the regimes of protection or the uses. In this regard, the Parties under Article 7 shall take appropriate international efforts to elaborate rules, criteria and procedures in the field of responsibility and liability. Under Article 8 of the Convention, there is a provision for the protection of information, which does not affect the rights or the obligations of the Parties in accordance with their national legal systems and applicable supranational regulations. The categories of protected information include industrial and commercial secrecy, including intellectual property, or national security. Thus, it is clear that whether it is related to the regime of protection or use, the Parties are obliged to share information, albeit with some exceptions relating to the above mentioned categories of information.

9.3.1. Application of the Guiding Principles

As has been shown, there is an extensive use of guiding principles in the riparian State treaties of Europe in general, and in the 1992 ECE Helsinki Convention in particular, concerning the environmental protection of international watercourses. In the following, we will review these principles as they are translated into actual practice. The guiding

principles, which were initiated in the 1970's and enhanced in the 1990's, includes, among others, the riparian States' Liability to Compensate Damage (SLCD), the Polluter Pays Principle (PPP) and the Precautionary Principle (PP).

SLCD arises as a result of failure of obligations, resulting in environmental harm or material losses, and caused by a failure (by omission) to act as required by law, or the commission of an act prohibited by law. In some cases, SLCD may arise out of acts that are not prohibited by law, e.g. appreciable harm, but in most cases it is determined by the courts.[767] SLCD is a consequence of a failure to fulfill obligations (intentional or otherwise), wrongful acts or the breach of an obligation, which may be addressed in the form of restitution to the original condition, compensation for harm and satisfaction to the victim.[768] The liability of transboundary harm includes both the loss of property or environmental harm.[769]

Articles 5, 10 and 13 of the 1971 Finnish-Swedish Frontier River Agreement can be taken as an example of SLCD. Unlike SLCD, PPP is the preventive measure aimed at the protection of the environment. PPP is an environmental economic policy (e.g. the pollution tax) aiming to prevent foreseeable harm or pollution, which is determined by lawmakers rather than the courts. Article 5 of the 1999 Protocol on Water and Health to the 1992 ECE Helsinki Convention recognizes PPP, providing that the costs of pollution prevention, control and reduction be born by the polluter.[770]

PPP requires the polluter to pay the cost incurred as a result of pollution, as well as prevention and control measures.[771] References to PPP in international conventions point towards the liability of polluters, i.e. the individual person, corporation or State responsible for the origin of the pollution.[772] The OECD Council Recommendation on Guiding Principles (1972) of International Economic Aspects of Environmental Policies recommended that the Member States apply PPP.[773] The OECD defined PPP thus: "Pollution is an introduction by man, directly or indirectly, of substances or energy into the environment resulting in deleterious effects of such a nature as to endanger human health, harm living resources and ecosystems, and impair or interfere with amenities and other legitimate

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[767] In the case of Iraq's intervention in Kuwait, the Security Council has determined financial liability, see Haper, 1994,pp.103-157.

[768] Lammers, 1984, pp.587-629.

[769] Article 3 of the Charter of Economic Rights and Duties of States 1974 includes States' duty to pay compensation for damage.

[770] See, http://www.unece.org/env/water/.

[771] Article IX of the 1966 ILA Helsinki Rules defines water pollution as "any detrimental change resulting from human conduct in the natural composition, content or quality of the waters of an international drainage basin."

[772] Article 2 of the 1992 ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

[773] OECD Guiding Principles Concerning International Economic Aspects of Environmental Policies, C (72) 128 and OECD Council Rec.C (74) 224 November 14, 1974.

uses of the environment." PPP means that the polluter should bear the expenses of carrying out the above-mentioned measures determined by public authorities until the environmental condition is restored to an acceptable condition.

In its First Action Program (1973), the EC adopted PPP.[774] Since then, it has been referred to in a number of international conventions and agreements, e.g. the 1992 Convention on Trans-Boundary Effects of Industrial Accidents, and the 1992 ECE Helsinki Convention. The Parties to the Paris Convention for the Prevention of Marine Pollution (1992) decided that "the contracting parties shall apply the polluter pays principle, by virtue of which the costs of pollution prevention, control and reduction measures are to be borne by the polluters."[775]

Though PPP is essentially an economic policy, engineered to achieve environmental objectives, it may be applied by introducing standards, charges or taxes. Yet the pollution charges levied are often criticized for being primarily designed to generate resources, rather than to influence the behaviors of polluters. Therefore, policies that do not result in the guilty party bearing the full cost of the pollution control measures must be considered inconsistent with PPP.[776] This could also be widely applied to municipal sewage and waste disposal, particularly to watercourse State areas, with costs for its treatment to be charged to the polluters. The aim of PPP should not be to penalize taxpayers, but the real polluters.[777] PPP has

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[774] The EC First Action Program (*OJ*, 112, December 20, 1973) defines PPP as "pollution as the cost of preventing and eliminating nuisances, which must in principle, be born by the polluter." However, there may be certain exceptions and special arrangements, in particular for transitional periods, provided that they cause no significant distortion to international trade and investment. PPP as mentioned in the OECD and EC documents do not allow aid or subsidies to be given to polluters. This rule may be disregarded under special circumstances, e.g. during a transitional period, etc.

[775] The Convention for the Protection of the Marine Environment of the Northeast Atlantic, 1992, Articles 2(2) and 3(4) state that the contracting parties shall apply PPP. This was also introduced in other international legal instruments, including the Convention for the Protection of the Marine Environment of the Baltic Areas, also signed in Helsinki in 1992. This area of the sea is comparatively more legally protected than other areas.

[776] In 1975, the EC extended PPP from oil to waste both toxic and dangerous or hazards waste. See Council Directive 16 June 1975, *OJ*, 194, 25/07/1975, 15 July 1975 OJ, 078, 26/30/91, Article 15 and 20 March 1978, *OJ* 084, 31/30/78, Article 11.

[777] Who is the polluter in a society of multiple economic activities? In most cases this burden falls upon users or consumers. As a result of this, PPP is often called the Users Pay Principles (UPP). In some cases, consumers may be the victims who nonetheless pay the cost of pollution, and therefore PPP is often criticized as the Victim Pays Principles (VPP). The difficulties of distinction between tax payers and polluters is often a problem, especially when the polluter is difficult to identify, the polluter is insolvent, or the insurance of the polluter cannot pay the full costs of the damage. While pinpointing the identity of the polluter can be a difficult task, it is simpler in the case of international watercourse pollution, in which the upstream State is usually responsible. There are, however, other complicating factors. In terms of the hydrological cycle of water, for example, it is difficult to identify the adverse activities of such phenomena as rainfall and flooding. This is a question of scientific determination.

been proven to be enforceable within the European Union countries, thanks to its highly developed mechanisms of implementation. The EC Treaty as amended by the Amsterdam Treaty in 1999, in Article 174(2), the Community's policy on the environment, which "shall be based on precautionary principle and the principles that the polluter pays."[778]

The Precautionary Principle (PP), according to some experts, is a further development of the due diligence standard behavior of States not cause significant harm, whereas according to others, it is an obligation of States to prevent harm. Emphasizing the PP as an obligation not to cause significant damage to other States, Hungary argued for PP against Slovakia in the *Danube Gabcikovo-Nagymaros Project Case*. It was thus asserted "the previously existing obligation not to cause substantial damage to the territory of another State had evolved into an *erga omnes* obligation of prevention of damage pursuant to the precautionary principle."[779] The ICJ rejected this argument, establishing PP as a due diligence standard behavior of States. The Court's restrictive conception of PP was based on the distinction between preparatory acts, e.g. the construction of the Gabcikovo-Nagymaros dams, and the commission of acts, e.g. the operation of dams. Had the Court associated preparatory acts with potentially harmful consequences, it would have probably accepted that the preparatory acts would have been illicit, thus opening up the question of liability. At the theoretical level, experts argue that the Court created a distinction between PP and the law of responsibility and liability.[780]

9.4. Implementation Mechanisms

The 1992 ECE Helsinki Convention calls for riparian States cooperation concerning a number of issues on a bilateral and multilateral level, including consultations, joint monitoring and assessment, common research and development, exchange of information, warning and alarm systems, mutual assistance and public information.[781] Article 1(5) defines the term joint bodies, which includes any bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between the riparian States.

As to the bilateral and multilateral cooperation of the Riparian Parties, Article 9 of the Convention recognizes the principle of equality and reciprocity as a basis for cooperation. To define mutual relations and conduct regarding the prevention, control and reduction of transboundary impact, in the absence of agreement, the Parties are required to enter into bilateral or multilateral agreements. In a case where there exists an agreement, the Parties to the 1992 ECE Helsinki Convention have to adapt the existing agreement(s) to the basic principles of this Convention. In this

[778] This is also known as the Treaty on European Union Maastricht Treaty (1992).
[779] Bourne, 1997, p.7.
[780] For example, see deCastro, 1997, pp.21-31.
[781] Articles 9-16.

regard, the Parties must embrace the relevant issues covered by the Convention or any other issues relating to the regimes of protection or the uses. The Parties are required to establish joint bodies without prejudice to existing agreements. The joint bodies are responsible for the following activities provided for in Article 9(a)-(j).[782]

The activities of the joint bodies provided for in Article 9(a) are "to collect, compile and evaluate data in order to identify pollution sources likely to cause transboundary impact." This is a specific provision found in the legal arrangement of transboundary watercourses for Europe, which serves as a model for other regions to follow in the protection and use of international watercourses. The 1976 Rhine Chemical Pollution Convention has identified and listed polluting substances as "gray" and "black" in Annex I and Annex II, and aims to reduce and/or eliminate them (depending upon their effects on the watercourses). Article 9(b) of the 1992 ECE Helsinki Convention requires the Parties to the Convention "to elaborate joint monitoring programs concerning water quality and quantity" and 9(c) "to draw up inventories and exchange information on the pollution sources mentioned in paragraph 2 (a)." According to Article 9(d), the Parties of the Convention shall "elaborate emission limits for waste water and evaluate the effectiveness of control programs," and to define joint water-quality objectives and criteria under Article 9(e), by taking into account the provisions of article 3, paragraph 3 of this Convention, where it proposes relevant measures for maintaining and, where necessary, improving the existing water quality.

Article 9(f) requires the Parties "to develop concerted action programs for the reduction of pollution loads from both point sources (e.g. municipal and industrial sources) and diffuse sources (particularly from agriculture)." In order to achieve the goal, Article 9(g) of the Convention provides that the Parties shall "establish warning and alarm procedures of transboundary impacts." In Article 9(h) the Convention calls for the establishment of institutions "to serve as a forum for the exchange of information on existing and planned uses of water and related installations that are likely to cause transboundary impact." The last two actions called for in Article 9(i) require the Parties "to promote cooperation and exchange information on the basis of the "best available technology" as well as to encourage cooperation in scientific research programs. Article 9(j) also requires that the Parties shall "participate in the implementation of environmental impact assessments relating to transboundary waters, in accordance with appropriate international regulations." These are technical details of activities that joint bodies concerning protection and use of transboundary watercourses and international lakes are responsible to perform, as it relates indirectly to the regimes of uses as well.

[782] This may be considered as an evidence of the framework character of the Convention.

Article 9 further includes an integrated provision relating to fresh water and salt waters, citing that in cases where a coastal State is the Party to the Convention, which is directly and substantially affected by transboundary impact, the riparian Parties can unanimously decide to invite that coastal State to be involved in relevant measures and activities of the joint bodies, established by the Parties to govern such transboundary waters. At the same time, joint bodies of the riparian States can also invite joint bodies established by coastal States for the protection of the marine environment, to cooperate and harmonize the measures in preventing, controlling and reducing the transboundary impacts. This means if two or more joint bodies exist in the same catchment area, there is an obvious need for coordination and general cooperation between the joint bodies, which Article 9 of the Convention calls for. Mutual consultations between the Parties are required under Article 10 of the Convention. It states that the parties shall adopt the principle of reciprocity, good faith and good neighborliness. Here, it can be argued that, by the inclusion of these principles in Article 10, the scope of the Convention extends to the regimes of protection or uses. These generic principles are the foundation of the principle of equitable and reasonable use provided for in Article 2 (c) of the Convention, governing the regimes of protection and uses of transboundary watercourses.[783]

According to Article 11, the Parties are required to have joint monitoring and assessment within the framework of general cooperation mentioned in Article 9 of the Convention. The establishment and implementation of joint programs should be aimed at monitoring the conditions of transboundary waters, including floods and ice drifts.[784] Article 11 requires the Parties to agree upon parameters to regulate any pollutants discharged and concentrated in transboundary waters, monitored at regular intervals, and carry out joint or coordinated assessments of the conditions of transboundary waters. Information on the measures taken must be made available to the public. Throughout, the Parties are required to harmonize the rules for "monitoring programs, measurement systems, devices, analytical techniques, data processing and evaluation procedures, and methods for the registration of pollutants discharged." Article 12 deals with common research and development, by which the Parties can undertake specific research and development. Through such research the Parties can achieve and maintain the water quality objectives and criteria that they have agreed upon. As to exchange of information between the Parties, Article 13, which deals with exchange of information between the Riparian Parties, sets out a framework listing the categories of data to be exchanged:

[783] The principle of equitable utilization, criteria of the equitable utilization and no-harm rule are defined in Articles 5,6 and 7 of the 1997 UN Convention.

[784] Inclusion of floods and ice drifts exclusively exhibits the holistic approach taken by the Convention to the hydrological cycle.

(a) Environmental conditions of transboundary waters;
(b) Experience gained in the application and operation of best available technology and results of research and development;
(c) Emission and monitoring data;
(d) Measures taken and planned to be taken to prevent, control and reduce transboundary impact; and
(e) Permits or regulations for wastewater discharges issued by the competent authority or appropriate body.

Furthermore, the exchange of information is required by the Parties to harmonize their respective national regulations concerning emission limits. The Parties are required to comply with any request for data and information from a fellow riparian, upon the payment of reasonable charges, if applicable. There are also provisions for the exchange of best available technology,[785] as well as the setting up of joint training programs and meetings.

One important legal innovation of the 1992 ECE Helsinki Convention is its warning and alarm systems, required by Article 14, which obliges the Parties to inform each other about any critical situation that may have transboundary impact. In doing so, they are required to set up, operate and coordinate communication, including warning and alarm systems aimed at obtaining and transmitting information based on verifiable data. Obviously in a critical situation, mutual assistance is required. Article 15 requires the Parties to elaborate and agree upon procedures for mutual assistance. Article 16 deals with the right of public information, and requires the Parties to ensure that information on the conditions of transboundary waters, measures taken or planned to be taken to prevent, control and reduce transboundary impact, and the effectiveness of those measures, is made available to the public. For this purpose, the Parties shall ensure that the information is available to the public, including matters pertaining to: "(a) water-quality objectives; (b) permits issued and the conditions required to be met; and (c) results of water and effluent sampling carried out for the purposes of monitoring and assessment, as well as results of checking compliance with the water-quality objectives or the permit conditions." The Parties shall ensure that this information shall be available to the public at all reasonable times for inspection, free of charge, and shall provide members of the public with reasonable facilities for obtaining from the Parties, on payment of reasonable charges, copies of such information.

Article 17 deals with the meeting of the Parties to the Convention. It provides that after the first meeting of the Parties, convened no later than one year after the date of the entry into force of the Convention, ordinary meetings should be held (once) every three years. At their meetings, the Parties shall review the policies for and methodological approaches to the

[785] Annex I.

protection and uses of transboundary waters with a view to further improvement of the protection and uses of transboundary waters. The Parties shall also exchange information regarding implementation of the other arrangements regarding the protection and use of transboundary waters to which one or more of the Parties are signatories. This provision opens the door for the accommodation of the pre-existing agreements on navigational use, non-navigational uses and the environmental protection. For the achievement of the purposes of the Convention, the Parties are entitled to seek appropriate services of relevant ECE bodies and other competent international bodies.

According to Article 20, guidelines for developing water quality objectives and criteria, guidelines for developing best environmental practices, and arbitration, respectively, are recognized as an integral part of the Convention.[786] Annexes, which define the best environmental technology and best environmental practice, provide the basis for the legal regimes of protection and uses of transboundary watercourses.

9.4.1. BAT and BEP Criteria

The expression Best Available Technology (BAT) is defined in Annex I of the Convention. Accordingly, BAT means "the latest stage of development of processes, facilities or methods of operation, which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste." In determining whether a set of processes, practices and methods of operation constitutes BAT in general or individual cases, consideration should be given, inter alia, to comparable processes and methods of operations, which have been tried out (according to the technological advances of that time); the economic feasibility of applying the latest technology; time limits for installation (in new and existing facilities); the nature and volume of resources and effluents concerned; and low- and non-waste technology. The BAT can be summarized as a process in terms of applying knowledge and technology, taking into account economic and social factors.

Annex II provides for guidelines for developing Best Environmental Practices (BEP). It constitutes of three main points: 1) measures to inform and educate the public about the environmental risks and consequences of the choice, use and disposal of particular activities and products; environmental practice covering all aspects of the products life, rules for their use and ultimate disposal; collection of waste, recycling, recovery and reuse; a system of licensing, which involves a range of restrictions or a ban. In determining the BEP, both in general as well as in individual cases, particular attention should be given to 2) the environmental hazard of the product, scale of use and disposal, substitution by less polluting processes or substances should be taken into consideration, including potential

[786] Ibid.

environmental benefit or penalty of substitute materials or activities, advances and changes in scientific knowledge and understanding, time limits for implementation, and social and economic implications. The BEP, given the above mentioned issues, should 3) recognize that "practices for a particular source will change with time in the light of technological advances, economic and social factors, as well as in the light of changes in scientific knowledge and understanding."[787]

Guidelines for developing water quality objectives and criteria are given in Annex III. Water quality objectives shall aim to maintain or improve water quality and reduce the average levels of pollution. The water quality objectives and criteria should be based on the application of ecological classification methods and chemical indices for the medium- and long-term review of water quality maintenance and improvement. Further, based on *emission limits*, specific water quality requirements (for drinking-water purposes, irrigation, etc.) are required in individual cases, including sensitive and specially protected waters and their environment, e.g. lakes and groundwater resources. Each individual case is to be ascertained based on the degree to which objectives are reached, and if any additional protective measures are required. It is noteworthy that the 1992 ECE Helsinki Convention is the only convention defining BAT, BEP and *water quality objectives and criteria*. This is yet another facet of this Convention setting the pattern of modern watercourse treaty practice, though as yet no other watercourse treaty has incorporated these definitions and guidelines. As it is a growing trend among modern treaties to include all aspects of the environment, it can be assumed that future watercourse treaties of other regions will follow suit.

9.5. Dispute Settlement

In cases where a dispute arises between two or more Parties about the interpretation or application of this Convention, whether concerning the protection or uses, according to Article 22, the Parties to a dispute should seek a solution by negotiation or by any other means of settlement acceptable to the Parties to the dispute. For a dispute not resolved through negotiation, the Parties may submit the dispute to the International Court of Justice, or to arbitration.[788]

The 1992 ECE Helsinki Convention came into force on October 6, 1996 in accordance with Article 26 (1). There are 33 Parties to the Convention, including the European Union.[789] Some of the Parties have appended

[787] It should be noted here that the Convention uses the term "best" in terms of use of *technology* and environmental *practice*.

[788] Procedure is set out in Annex IV.

[789] The EU became a Party to the Convention on April 9, 2003.

reservations and declarations. They include Austria,[790] Germany,[791] Liechtenstein,[792] and the Netherlands.[793]

9.6. Appraisal

In summarizing the content of the regimes of protection and uses established by the 1992 ECE Helsinki Convention, governing the international water basins of Europe, the following points can be made. The Convention defines transboundary watercourses along with international lakes, integrating not only the regime of protection and uses but also defining contiguous and successive international rivers. This obliges the riparian States to prevent, control and reduce transboundary impact, particularly pollution. In addition, it provides for the duty to manage, conserve and protect transboundary watercourses, including the duty to cooperate. The guiding principles of the Convention are the reasonable and equitable use, precautionary principle, polluter pays principle and intergenerational equity. As to the prevention, control and reduction of pollution of transboundary watercourses, the riparian States have the duty to take measures to apply BAT, control discharges, treat municipal wastewaters, and reduce hazardous substances resulting from different activities. An important duty of the riparian State is to make environmental impact assessments and implement sustainable management of transboundary watercourses.

The Parties to the Convention shall establish monitoring, research and development facilities. It is the duty of the Parties to support lawmaking (Article 7) concerning the elaboration of rules, criteria and procedures in the areas of liability. Except for matters relevant to national security, the Parties are required to share information. As to the specific watercourses, the Parties shall enter into agreements, establishing bodies on a bilateral or multilateral basis. It is also the duty of the Parties to establish alarm systems, in order to deal with critical situations. The dispute settlement will be in the form of negotiation, adjudication by the International Court of Justice or arbitration.

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[790] The Republic of Austria declares in accordance with article 22 paragraph 2 of the Convention, that it accepts both of the means of dispute settlement mentioned in this paragraph as compulsory in relation to any Party accepting an obligation concerning one or both these means of dispute settlement.

[791] The Federal Republic of Germany, in order to protect information related to personal data according to its national law, reserves the right to supply personal data only under the condition that the part receiving such protected information shall respect the confidentiality of the information received and the conditions under which it is supplied, and shall only use that information for the purposes for which it was supplied.

[792] Same declaration, identical in essence, mutatis mutandis, as the one made under Austria.

[793] The Netherlands accepts for a dispute not resolved in accordance with paragraph 1 of article 22 of the Convention both the following means of dispute settlement as compulsory in relation to any Party accepting the same obligation:
(a) Submission of the dispute to the International Court of Justice;
(b) Arbitration in accordance with the procedure set out in annex IV.

The Convention not only aims to protect the environment but also defines the BAT, BEP and water quality objectives and criteria. In this respect, the Convention is a groundbreaking milestone in the treaty practice concerning transboundary watercourses and international lakes shared by two or more States. Along with the Convention, the 1999 Protocol on Water and Health aims to promote health and well being of their people through the individual and collective effort of riparian States. The 1992 ECE Helsinki Convention, which entered into force in 1996, is open to all States.

This Convention adopts a holistic approach to the different issues concerning transboundary watercourses, and it harmonizes the different issues in an integrated manner. The Convention deals with transboundary watercourse related issues at a national, continental and international level. However, by issuing standing invitations to all States to be a Party to the Convention, it embraces a global approach. This is a model Convention integrating the regimes of protection and uses as the constituent elements of integrated management.

CHAPTER 10: MEKONG RIVER BASIN

10.1. Introduction

The Mekong River, which has been described as the fulfillment of "dreams of peace and cooperation,"[794] originates in Tibet, traverses the South East Asian States and empties in the South China Sea. It is the world's twelfth longest river; it is tenth in terms of annual water yield, and third in richness of biodiversity. The Mekong basin is home to about 60 million people, including southern China, Laos, northern Thailand, northeastern Cambodia and the Central Highlands of Vietnam. It is also a model of an international river used for navigational and non-navigational purposes. These uses are associated with the issues of human rights, environmental protection, sustainable development and promotion of tourism. At the same time, the Mekong is one of the most polluted rivers in the world.

While the initial treaties concerning the Mekong focused on the riparian boundaries, the legal regime of navigational use of the Mekong has evolved significantly since the 1920's and, up until the 1950's, a few initiatives were taken by some of the riparian States as to the regime of non-navigational use. Apart from the environmental considerations, the legal framework for cooperation among the Mekong basin States was to include demands for sustainable development, equitable utilization, and conservation of the Mekong water resources.

A harmonized legal regime of the Mekong, including environmental protection, emerged in the 1990's, with the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin 1995 (hereinafter referred to as the "1995 Mekong Agreement"),[795] which was concluded between Cambodia, Laos, Thailand, and Viet Nam. It is one of the agreements of the 1990's, which provides a model of harmonization of the uses and protection. For the purpose of the present study, we shall review and analyze the 1995 Mekong Agreement, taking into account the harmonized legal perspective of the regimes of navigational use, non-navigational uses and environmental protection.

As a result of the political change in the 1990's in the region, and after several years of negotiations among riparian States, the 1995 Mekong Agreement was concluded, providing for a framework for cooperation in hydropower development, water sharing, fisheries management and other resource and environmental management.[796] The 1995 Mekong Agreement

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[794] Linter and Chang, 1995, p.26.

[795] See, 34 *ILM*, 1995, p.854.

[796] Compared with the previous agreements, the 1995 Mekong Agreement harmonizes various aspects of river management, taking a holistic approach. It may not be regarded as such in terms of an integrated approach as adopted by the 1992 ECE Helsinki Convention. Nonetheless, the 1995 Mekong Agreement does takes into consideration the use and protection of the shared international river.

focuses on cooperation among riparian States concerning equitable utilization and sustainable development of the Mekong River Basin. This agreement establishes the Mekong River Commission, which is responsible for the management of the Mekong.

In its Preamble, the 1995 Mekong Agreement provides a background of ideological, historical and military confrontations in the Southeast Asian region.[797] The Preamble of the 1995 Mekong Agreement remarks upon the political, economic and social changes that have taken place in the countries of the region, aiming to reassess, redefine and establish a future framework for cooperation between the Parties. The Preamble notes the geopolitics of the region, which underwent a fundamental shift in the early 1990s, ending the civil war in Cambodia and opening opportunities for reconciliation, especially between Thailand and Vietnam, as well as others.[798] The 1995 Mekong Agreement is concluded for the common purposes among the Parties with different political systems, i.e. the Kingdom of Cambodia, the Kingdom of Thailand, the Lao People's Democratic Republic and the Socialist Republic of Viet Nam. It is important to note that the Peoples Republic of China, the most powerful of the riparian States sharing the Mekong basin, as well as Myanmar, remain outside the agreement.

The Preamble does not provide detailed explanations, referring only to the political, economic and social changes that took place prior to the agreement. Viewed from the economic perspective, it is apparent that the Preamble recognizes the Mekong basin States as developing ones in terms of economic indices. At the moment, the whole South East Asian region, including China, seems to be moving towards economic free market and privatization, including hydroelectricity development. Thus, the issues mentioned in the Preamble are relevant as to the regimes of the uses and protection of the Mekong, recognizing they are under the control of different States with competing needs and interests.

10.2. Concepts and Approaches

From the point of view of concepts and approaches, the 1995 Mekong Agreement provides for the management of the Mekong River Basin water and related resources, setting the framework for cooperation acceptable to all parties to accomplish the objectives. The Preamble recognizes the natural assets of the Mekong River Basin and its immense value to all the riparian States, including the economic and social well being and living standards of their peoples. As to the legal regimes of navigational use, non-navigational uses and environmental protection, the Preamble of the 1995 Mekong Agreement reaffirms determination of the Parties:

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[797] Chapter I of the 1995 Mekong Agreement.

[798] As a result of the outside intervention, especially by the French, Japanese and the Americans, South East Asia has been one of the most troubled regions of the world, particularly from the 1950's to the 1990's.

> To cooperate and promote in a constructive and mutually beneficial manner in the sustainable development, utilization, conservation and management of the Mekong River Basin water and related resources for navigational and non-navigational purposes, for social and economic development and the well-being of all riparian States, consistent with the needs to protect, preserve, enhance and manage the environmental and aquatic conditions and maintenance of the ecological balance exceptional to this river basin.[799]

Even though the concept of international river basin is not directly mentioned in this provision, the notion of the concept is implied. For example, the term "sustainable" here relates to development, utilization, conservation and management of the Mekong River Basin including the well being of the people of all riparian States.[800] Compared with the provision of the 1992 ECE Helsinki Convention concerning its conceptual approach, the 1995 Mekong Agreement is more specific in adopting the international river basin approach. In terms of ecological management of the basin, these two treaties are comparable, except for the detailed principles of protection that are provided for in the 1992 ECE Helsinki Convention. The 1995 Mekong Agreement takes an interdependent sub-regional approach to promote growth and cooperation among the community of Mekong nations, taking also into account the regional benefits that could be derived from activities within the Mekong River Basin.

The 1995 Mekong Agreement provides for definitions of terms used in the agreement. One can see these terms from the regime point of view as well as in terms of the constituent elements of integrated management. As to the regimes of uses of the Mekong, the terms defined by the Agreement, refer to the key elements for the harmonization of the Mekong regime, including energy, irrigation, flood control, fisheries and environment.

Accordingly, "proposed use of the basin" means any proposal for a definite use of the waters of the Mekong River system by any riparian, excluding domestic and minor uses of water not having a significant impact on mainstream flows. "Basin development plan" means the general planning tool and process that the Joint Committee would use as a blueprint to identify, categorize and prioritize the projects and programs to seek assistance for and to implement the plan at the basin level. Acceptable "minimum monthly natural flow" of the river basin means the flow during each month of the dry season. Acceptable "natural reverse flow" means the wet season flow level in the Mekong River (as measured at Kratie) that

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[799] Preamble of the 1995 Mekong Agreement is unique stating social political issues in the region.

[800] Most of the terms used in the Preamble of the 1995 Mekong Agreement are similar to Articles 5, 6 and 7 of the 1997 UN Convention.

allows the reverse flow (at the Tonle Sap) to an agreed upon optimum level of water. The term "environment of the river basin" means the conditions of water and land resources, air, flora, and fauna, existing in a particular region. "Notification" concerning the use and protection of the basin means timely information by a riparian to the Joint Committee on its proposed use of water according to the format, content and procedures set forth in the Rules for Water Utilization and Inter-Basin Diversions.[801]

The 1995 Mekong Agreement provides for areas of cooperation[802] including the uses and protection of the environment as well as ecological balance. Areas of cooperation, as defined in Article 1, includes sustainable development, utilization, management and conservation of the water and related resources of the Mekong River Basin including a broad concept of utilization not limited to irrigation, hydro-power, navigation, flood control, fisheries, timber floating, recreation and tourism. The latter two uses, recreational and tourism, are unique arrangements rarely found in other agreements. The agreement further aims to minimize the harmful effects that might result from natural occurrences and man-made activities, thereby enhancing the legal regime of environmental protection. Projects, programs and planning means to promote, support, cooperate and coordinate in the development of the full potential of sustainable benefit to all riparian States.[803] The term sustainable benefit acknowledges the relationship between use and protection, whereby the wasteful use of Mekong River Basin waters is to be prevented. In doing so, the agreement's emphasizes joint and/or basin-wide development projects and basin programs, the formulation of a basin development plan, and identifying the priority of the projects and programs.

10.3. Substantive Principles

The 1995 Mekong Agreement recognizes the concept of sovereign equality and territorial integrity of the basin States in the uses of the watercourses as well as protection; it adopts the principles of reasonable and equitable utilization in terms of maintenance of flows on the mainstream and prevention and cessation of harmful effects; it recognizes liabilities for damages, thereby enhancing the concept of State obligations; and it provides rules for dealing with emergency situations. The term community of Mekong nations, calling for cooperation with each other, is noteworthy in connection with the theory of the community interest of the riparian States, which is one of the important currents in the law of international watercourses that has evolved since the 1930's. In some way, it is being incorporated into the recent recognition of the general principle of equitable utilization of international watercourses.[804]

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[801] Ibid.

[802] Articles 1-10, of the 1995 Mekong Agreement.

[803] Article 2.

[804] Article 26 of the 1995 Mekong Agreement.

An amicable and good neighborly manner is prescribed as the principle for the conduct of the Parties to the 1995 Mekong Agreement, including the principles and provisions in conformity with the objectives and principles of the Charter of the UN and international law. The Preamble also calls for coordination with the international community in order to address and resolve issues and problems that may arise from the use and development of the Mekong River Basin. The objectives of the 1995 Mekong Agreement itself are provided in the body of the agreement, aiming to achieve optimum use and prevention of waste of the waters through a dynamic and practical consensus in conformity with the Rules for Water Utilization and Inter-Basin Diversions.[805] To seek assistance and to implement plans at the basin level, according to Article 2, depends upon the degree of sustainable benefit. Article 2 of the 1995 Mekong Agreement requires the signatories to promote, support, cooperate and coordinate water resource development.

The 1995 Mekong Agreement thus goes beyond simply promoting water resource development. Coordination - rather than control - of water resources development appears to be the primary principle of the modern Mekong regime. Article 2 also calls upon the Mekong Committee to formulate a basin development plan. The 1957 Mekong regime had previously crafted two basin development plans, one in 1970 by the Mekong Committee and another in 1987, which focused primarily on the long-term vision of creating a cascade of large reservoirs on the Mekong River. Since the prospects for the mainstream cascade have faded, the Committee's basin development plan focused on helping to coordinate water resource developments so as to avoid or minimize future water conflicts and help maintain the aquatic ecology of the Mekong Basin.

The 1995 Mekong Agreement does not specify the basic development plan as a legally binding plan for the Member States. Rather, the plan appears to be a tool for coordinating water resource development and management from a basin-wide perspective, which could also potentially help expedite international financing of water projects by identifying high priority projects that have been analyzed within a basin context. Formulation of the plan will not be a straightforward task. Like any water resource planning exercise, there are bound to be multiple-and sometimes conflicting-objectives that need to be reconciled. For example, the plan must address the issue of water sharing between the Mekong basin States and formulate a strategy for balancing economic development goals with social equity and ecological concerns.

The terms protection of the environment and ecological balance are defined in Article 3, in which the term environment implies human environment in a narrower sense, whereas the term ecology is wider: “to protect the environment, natural resources, aquatic life and conditions, and

[805] Ibid.

ecological balance of the Mekong River Basin from pollution or other harmful effects resulting from any development plans and uses of water and related resources in the Basin."[806] Article 4 focuses on cooperation between the Mekong basin States, recognizing the basis of sovereign equality and territorial integrity in the utilization and protection of water resources. Cambodia, Laos, Thailand, and Vietnam accepted the general doctrine of "reasonable and equitable utilization."[807] This is the challenge in the Mekong case: to devise a water allocation system supported by doctrine, while not unduly constraining national sovereignty.

The substantive principles are contained in Articles 5, 6 and 26 of the 1995 Mekong Agreement. Principle of equitable utilization has found expression in Article 5, which sets out the obligations of the riparian States concerning notification, prior consultation or agreement through the Joint Committee of the Commission in case of inter- and intra-basin diversions from tributaries and the mainstream during the wet and dry seasons.[808] Sub-agreement is only required in the most extreme of cases, that of inter-basin diversion from the mainstream during the dry season. Even here there is scope for relying on prior consultation, in the event that there is a "surplus" of water available for all parties to the satisfaction of the Joint Committee. All tributary development is subject to notification.

Article 6 deals with maintenance of minimum and maximum flows on the mainstream, while Article 26 addresses questions of determining and measuring adequate watercourse flows. The following terms defined by the 1995 Mekong Agreement are relevant concerning the substantive principles. Under Article 5 prior consultation and evaluation means a decision of the Joint Committee, resulting from any prior consultation and evaluation, proposed use for inter-basin diversions during the wet season from the mainstream as well as for intra-basin use or inter-basin diversions of these waters during the dry season. Prior consultation does not convey the right to veto the use or the unilateral right to use water by any riparian without taking into account other riparian rights.

In Article 5, which pertains to providing reasonable and equitable utilization, the drafters seem to have wished not to make specific water allocations, in consideration of dry season flows (i.e. in excess of the existing flows) depending on the development of water storage reservoirs. The 1995 Mekong Agreement focuses on procedures and principles for the review of proposed water uses. During the provisional arrangement, water uses had to be unanimously approved by the Mekong Committee. In contrast, there were no review requirements in the previous (1957) arrangement. Article 5 of the 1995 Mekong Agreement represents a balance between the strict requirements of use allocation and the absence of review.

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[806] Article 3 is somewhat similar to Article 1 of the 1995 SADC Protocol.

[807] Article 5, 6 and 7 of the 1997 UN Convention, prescribe this principle.

[808] It is interesting to note that Articles 5,6 and 7 of the 1995 Mekong Agreement and Articles 5, 6 and 7 of the 1997 UN Convention are arranged in the same numerical order.

As a relative upstream State, Thailand wanted to avoid a system for project review that could obstruct their water resource development plans. Vietnam, Cambodia, and Laos wanted to return to the rules of the provisional arrangement, whereby all proposed projects had to be reviewed and approved by the members prior to implementation. Thailand favored a more flexible set of rules that did not require agreement for all proposed projects.

Article 5 seems to contain a compromise, and provides for: 1) notification of water flow levels in all seasons on the tributaries; 2) notification for intra-basin use on the mainstream of the Mekong River, during the wet season, and consultation that aims at agreement for diversions outside of the Mekong Basin; and 3) during the dry season, consultation that aims at agreement for intra-basin use, and prior consultation and agreement for diversions outside of the Mekong Basin.[809]

Article 5 contains a complex set of procedures. This does not specify the time frames for the wet and dry season, nor does it discuss the requirements for notification, prior consultation, or agreement. Rather, it requires the Mekong River Commission (MRC) to work out the procedural details for the review of proposed water uses through subsidiary agreement(s). In this sense the 1995 Mekong Agreement represents a framework agreement.

Article 5 is the most contentious issue and its complexity and ambiguity points out the difficulties the Mekong regime may confront in dealing with water allocation issues. During the negotiations, the Thai representative had asserted that the principle of equitable utilization contained in Article 5, and the criteria of the principle contained in Article 6, are intimately linked. Thailand was interested in maintaining its options on the ambitious Khong-Chi-Mun project (the diversion from the Mekong River in northeast Thailand), as well as preserving the right to divert water out of the Mekong Basin into other water-short basins within Thailand. Shortly after the Mekong Agreement was signed, Thai water officials unveiled a plan to divert two billion m3 of water from the Kok and Ing Rivers, which are Thai tributaries to the Mekong River, into the Chao Phraya Basin, where the city of Bangkok is located.

Thailand agreed to Article 6, which essentially safeguards existing uses of water,[810] because it realized that it could probably divert part of the surplus dry season flows to be generated by the Chinese reservoirs without harming other Mekong Basin States. It is known that the Chinese dams may be very beneficial for the lower Mekong basin. These man-made storage reservoirs may provide substantially more water in the dry season and keep natural floods from occurring in the wet season. When construction of Xiaowan Dam is completed, it will increase minimum flow

[809] These provisions also indicate the 1995 Mekong Agreement as a framework agreement.

[810] In this regard, this agreement can be seen as similar to the 1959 Nile Agreement, which protects existing use.

to the Mekong by about 35 percent or about 555 m3 per second. The planned 15 projects will eventually increase the flow by about 1,230 m3. However, China's dams will have significant impact, given the plan to divert the extra water, released from China's dams, from the Mekong mainstream into Thailand.

The use allocation is the prime concern of all Mekong Basin States. Specifically, for Laos, navigational use is of the utmost importance, for Vietnam it is irrigation and for China it is hydroelectricity. Along with the criterion of environmental protection, these uses are of vital concern to the Mekong Basin States.[811]

10.3.1. Criteria

Criteria of watercourse uses defined in Article 6 are linked with Article 5, which defines the principle of equitable utilization. A reasonable and equitable utilization is defined in Article 5, which aims to utilize the basin pursuant to all relevant factors and circumstances:

> A) On tributaries of the Mekong River including Tonle Sap intra-basin uses and inter-basin diversions; and
> B) On the mainstream of the Mekong River depending on the wet and dry seasons.[812]

At times of a surplus quantity of water available in excess of the proposed uses of all Parties in any dry season, verified and unanimously confirmed as such by the Joint Committee, an inter-basin diversion of the surplus could be made subject to prior consultation. Any inter-basin diversion project is subject to agreement by the Joint Committee through a specific agreement for each project prior to any proposed diversion. During the wet season, the intra-basin use is subject to notification via the Joint Committee and inter-basin diversion is subject to prior consultation, aiming at an agreement by the Joint Committee. During the dry season, intra-basin use is subject to prior consultation, aiming at an agreement by the Joint Committee and any inter-basin diversion project is to be agreed upon by the Joint Committee through a specific agreement for each project prior to any proposed diversion.

The 1995 Mekong Agreement provides for the Rules for Water Utilization and Inter-basin Diversion. The Joint Committee is responsible to prepare and propose for approval of the Council, inter alia, Rules for Water Utilization and Inter-Basin Diversions pursuant to Articles 5 and 6, including but not limited to;

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[811] Criteria of watercourse uses in this agreement appear to be specific rather than general criteria mentioned in Article 6 of the 1997 UN Convention.

[812] Article 5 of the 1995 Mekong Agreement recognizes tributaries and inter-basin divisions as a single international basin. However, it does not recognize it as a single international basin ”system” as it is recognized by the 1995 SADC Protocol.

1) establishing the time frame for the wet and dry seasons;
2) establishing the location of hydrological stations, and determining and maintaining the flow level requirements at each station;
3) setting out criteria for determining surplus quantities of water during the dry season on the mainstream;
4) improving upon the mechanism to monitor intra-basin use; and,
5) setting up a mechanism to monitor inter-basin diversions from the mainstream.[813]

One of the criteria dealt with in Article 6 is the maintenance of flows on the mainstream. The Joint Committee is responsible to adopt guidelines for the locations and levels of the flows, and monitor and take action necessary for their maintenance as provided for in Article 26.

Article 6 calls for maintaining wet season flows in the Mekong River sufficient "[t]o enable the acceptable reverse flow of the Tonle Sap to take place during the wet season." This protects Cambodia's existing use of wet season water to sustain the hydrological and ecological integrity of the Tonle Sap. During the wet season, at the junction of the Mekong River and the Tonle Sap River (which feeds the Tonle Sap Lake), a portion of the flow of the Mekong River flows into the Tonle Sap River, and the remainder flows into the Mekong Delta and out into the South China Sea. In order to preserve reverse wet season flows into the Tonle Sap, large wet season flows will have to be maintained in the Mekong River. High wet season flows in the Mekong River help sustain ecologically important wetlands both downstream and upstream of the junction of the Mekong and Tonle Sap rivers. The Mekong Agreement does not specify the locations, or the numerical values, for dry and wet seasons. In principle, Article 6 represents a de facto allocation of water according to existing beneficial uses. In practice, the details still need to be formulated by the Mekong Commission and incorporated into a subsidiary agreement.

10.3.2. Mitigate Harm

The legal provisions for prevention and cessation of harmful effects are provided for in Article 7 of the 1995 Mekong Agreement. According to the article, the Parties are obliged to make every effort to avoid, minimize and mitigate harmful effects that might occur to the environment, especially the water quantity and quality, the aquatic conditions, and ecological balance of the river system, from the development and use of the Mekong River Basin water resources or discharge of wastes and return flows. Where one or more States is/are notified with valid evidence that it is causing substantial damage to one or more riparians from the use of and/or discharge to water of the Mekong River, that State or States shall cease

[813] Article 26.

immediately the alleged cause of harm until such cause of harm is determined in accordance with the provisions of the 1995 Mekong Agreement.[814]

Article 8 deals with liability for damages where harmful effects cause substantial damage to one or more riparian(s) from the use of and/or discharge to waters of the Mekong River by any riparian States, the party(ies) concerned shall determine all relative factors, the cause, extent of damage and responsibility for damages caused by that State.[815] This is to be done in conformity with the principles of international law relating to state responsibility, and to address and resolve all issues, differences and disputes in an amicable and timely manner by peaceful means as provided in Articles 34 and 35 of the 1995 Mekong Agreement, and in conformity with the Charter of the UN.

10.3.3. Navigational and Non-Navigational Uses

The upper part of the Mekong River is not navigable, but the navigational activity on the lower part of the river is substantial. Article 9 of the 1995 Mekong Agreement deals with the freedom of navigation, which is the prime principle of the regime of navigational use. It provides for "on the basis of equality of right, the freedom of navigation throughout the mainstream of the Mekong River without regard to the territorial boundaries, for transportation and communication to promote regional cooperation and to satisfactorily implement projects under this Agreement."[816]

The Mekong River is to be free from obstructions, measures, conduct and actions that might directly or indirectly impair navigability, interfere with this right or permanently make it more difficult. The important features of Article 9 is that navigational use is not assured any priority over other uses, but will be incorporated into any mainstream project. In doing so, the riparians may issue regulations for the portions of the Mekong River within their territories, particularly in sanitary, customs and immigration matters, police and general security. It should be noted that the regime of navigational use is subject to harmonization with environmental protection, such as sanitary and security issues.

As to emergency situations, Article 10 provides that "whenever a party becomes aware of any special water quantity or quality problems constituting an emergency that requires an immediate response, it shall notify and consult directly with the party(ies) concerned and the Joint

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[814] Article 8.

[815] This legal provision takes an approach somewhat similar to the 1972 Finnish-Swedish Frontier River Treaty, concerning the liability for damages where harmful effects cause substantial damage by one to another riparian State. However, it does not provide a legal remedy to private individuals, as does the 1972 Finnish-Swedish Frontier River Treaty.

[816] Article 9 of the 1995 Mekong Agreement is noteworthy in that it recognizes freedom of navigation on international river, which is harmonized with non-navigational uses and environmental protection.

Committee without delay in order to take appropriate remedial action." This provision reiterates the duties of consultation and notification.

10.4. Implementation Mechanisms

The institutional structure of the Mekong River Commission, according to Article 12, consists of three permanent bodies: 1) the Council; 2) the Joint Committee; and 3) Secretariat.

According to Article 13, the Mekong River Commission is to be constituted by the Parties of the 1995 Mekong Agreement. This commission assumes all the assets, rights and obligations of the former regime known as the Committee for the Coordination of Investigations of the Lower Mekong Basin. The latter came into existence in 1957, and was marked by two distinct periods.[817] The Secretariat is a body of officials composed of the Mekong basin States,[818] the UN and international donor community. Provisions concerning the budget of the Mekong River Commission are provided for in Article 14, which is to be approved by the Joint Committee and the Council. The budget includes contributions from Member States on an equal basis unless otherwise decided by the Council. It also includes contributions from the international community (donor countries), and from other sources.

The Council, according to Article 15, consists of one member from each participating riparian State at the ministerial level, who would be empowered to make policy decisions on behalf of his/her government. The Chairperson of the Council is selected, according to Article 16, for a term of one year on the basis of rotation according to alphabetical order of the participating States. The Council meets at a minimum of one regular session every year and may convene special sessions whenever it considers it necessary or upon the request of a member State as provided in Article 17. As it deems appropriate, it may invite observers to its sessions.

The Joint Committee, which meets at least three times per year, is the operational decision-making body of the Mekong River Commission and consists of one official at the department head level from each member government. The primary functions of the Secretariat are to procure international assistance, administer projects, and undertake selected technical tasks such as maintaining a hydrological database. Article 15 of the Mekong Agreement specifically authorizes the Council to make policy decisions on behalf of Member Governments. This was partly in response to the question of whether the former Mekong Committee had acted within its authority in issuing the 1975 Joint Declaration. Moreover, because the Committee will most likely confront a number of sensitive policy issues-

[817] The Mekong Committee 1957-1975 /Interim Mekong Committee 1975-1993.

[818] Article 13 of the 1995 Mekong Agreement. Formerly, the head of the Secretariat was selected by ECAFE and confirmed by the Mekong Committee. The Secretariat was responsible for mobilizing the technical and financial resources to support water resources development.

particularly with respect to water allocation-the framers of the Mekong Agreement wanted to ensure that the Committee would have the authority to make policy decisions.

The 1995 Mekong Agreement also changed the role of the Secretariat by making it more accountable to the Council and Joint Committee. During the previous Committee era, an "Executive Agent," who was typically a UNDP career employee, headed the Secretariat. The Executive Agent exercised considerable influence on the Mekong regime and was, in many ways, the leader of the Mekong regime. The 1995 Mekong Agreement replaced the post of Executive Agent with the position of "Chief Executive Officer", who is charged with managing the Secretariat and reporting directly to the Joint Committee. The Officer is no longer expected to provide the same level of leadership as the Executive Agent in the Commission; instead the burden of leadership has devolved to the Joint Committee, acting under the general policy guidance of the Council.[819] Some of the negotiators for the 1995 Mekong Agreement had felt the influence that had been wielded by the Secretariat during the previous Committee was no longer appropriate. Before the goal had been to mobilize international finance and technical support for the Mekong reservoir cascade. Under these circumstances, it was useful to have a strong Executive Agent helping to mediate between Mekong Committee Members and procuring international support. In the previous Committee era, with sensitive water allocation issues on the agenda, the presence of a strong Secretariat brokering solutions did not appeal to all of the member countries, particularly Thailand.[820]

The functions of the Council are mentioned in Article 18, and include policy and decision-making and other necessary guidance concerning the promotion, support, cooperation and coordination of joint activities and projects in a constructive and mutually beneficial manner for the sustainable development, utilization, conservation and management of the Mekong River Basin and protection of the environment and aquatic conditions in the basin as provided for under the agreement. Other policy-making matters and decisions include, but are not limited to, approval of the Rules of Procedures of the Joint Committee under Article 25.

Rules governing water utilization and inter-basin diversions are to be proposed by the Joint Committee under Article 26. The additional functions of the Council are to establish guidelines for financial and technical assistance of development projects and programs, and if considered necessary, to invite the donors to coordinate their support through a Donor Consultative Group; and, to entertain, address and resolve issues,

[819] The Officer is no longer an employee, nor is nominated by UNDP. Rather, the Council selects its own Officer.

[820] During an acrimonious period in 1993, when Thailand and Vietnam were at odds on how to restructure the Mekong regime, the Thai government unilaterally dismissed the Executive Agent on the grounds that he had lost his neutrality.

differences and disputes referred to it by Council Members, the Joint Committee, or any Member State on matters arising under this Agreement. According to Article 19, the Council is authorized to adopt its own Rules of Procedures, and may seek technical advisor services, as it deems necessary. As to the decisions of the Council, Article 20 requires unanimity, except as otherwise provided for in its Rules of Procedures. Organizational Arrangements are further provided for in Articles 21-33. In contrast to the previous arrangement, the 1995 Mekong Agreement gives the Committee explicit authority to make binding policy decisions.[821]

The Joint Committee consists of representatives of each riparian State. The Chairmanship of the Joint Committee is rotated according to reverse alphabetical order of the member States for a term of one year.[822] The Joint Committee convenes at least two regular sessions every year and may convene special sessions whenever it considers it necessary, or upon the request of a member State, which may invite observers to its sessions, as it deems appropriate.[823] The functions of the Joint Committee include the implementation of the policies and decisions of the Council and such other tasks as may be assigned by the Council, e.g. formulating a basin development plan, which would be periodically reviewed and revised as necessary and submitted to the Council for approval.[824] The Joint Committee is also responsible for obtaining the financial and technical support necessary for project/program implementation, and to secure, update and exchange information, conduct appropriate studies and assessments for the protection of the environment and maintenance of the ecological balance of the Mekong River Basin.

The Secretariat is required to implement the policies, decisions, projects and programs, including the maintenance of databases and information necessary for the Council and Joint Committee to perform their functions, and approval of the annual work program prepared by the Secretariat. It is also the function of the Joint Committee to address and make every effort to resolve issues and differences that may arise between regular sessions of the Council, referred to it by any Joint Committee member or Member State on matters arising under this Agreement, and when necessary to refer the matter to the Council. Furthermore, it is responsible to review and approve studies and training for the personnel of the riparian States involved in Mekong River Basin activities as appropriate and necessary to strengthen the capability to implement this Agreement. The Joint Committee should

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821 During the previous arrangement, there were two permanent bodies: the [Interim] Mekong Committee and the Secretariat. The Mekong Committee was the decision-making body of the Mekong regime, responsible for "technical matters" within the competence of the Committee. The Mekong Committee members, however, may have been authorized to make policy decisions on behalf of their governments.

822 Articles 21 and 22, respectively.

823 Article 23.

824 Article 24.

make recommendations to the Council for approval on the organizational structure, modifications and restructuring of the Secretariat.

The Joint Committee has the right to propose its own rules of procedures, which is to be approved by the Council.[825] In doing so, it may form ad hoc and/or permanent sub-committees or working groups as considered necessary, and may seek technical advisory services except as may be provided for in the Council's Rules of Procedures. Decisions of the Joint Committee are taken by unanimous vote, except as otherwise provided for in its Rules of Procedures.[826] The Secretariat is responsible for rendering technical and administrative services to the Council and Joint Committee, which is under the supervision of the Joint Committee.[827] The Council decides the location and structure of the permanent office of the Secretariat, and a headquarters agreement negotiated and entered into with the host government.[828]

The functions and duties of the Secretariat include the duty to carry out the decisions and tasks assigned by the Council and Joint Committee to provide technical services and financial administration and advise as requested by the Council and Joint Committee, to formulate the annual work program, and prepare all other plans, project and program documents, studies and assessments as may be required.[829] In addition, it includes the duty to assist the Joint Committee in the implementation and management of projects and programs as requested, maintain databases of information as directed, making preparations for sessions of the Council and Joint Committee, and carry out all other assignments as may be requested. The Secretariat is headed by a Chief Executive Officer, who shall be appointed by the Council from a short-list of qualified candidates selected by the Joint Committee.[830] The Assistant to the Chief Executive Officer is supposed to be of the same nationality as the Chairman of the Joint Committee and shall serve for a co-terminus one-year term. Apart form these posts, provision for the riparian technical staff of the Secretariat are to be recruited on a basis of technical competence on an equal basis among the members.[831]

10.10. Dispute Settlement

Dispute settlement procedure is provided for in Article 34, requiring the Mekong River Commission to make efforts whenever any difference or dispute may arise between two or more Parties. The Commission shall first make every effort to resolve the issue as provided in Articles 18(C) and 24(F). If the Commission is unable to resolve the difference or dispute in a

[825] Article 25.
[826] Article 27.
[827] Article 28.
[828] Article 29.
[829] Article 30.
[830] Articles 31 and 32.
[831] Article 33.

timely manner, according to Article 35, the issue is to be referred to the Governments to take cognizance of the matter for resolution by negotiation through diplomatic channels, and may communicate their decision to the Council for further proceedings as may be necessary to carry out such decisions. Should the Governments find it necessary or beneficial to facilitate the resolution of the matter, they may, by mutual agreement, request assistance by mediation through an entity or party mutually agreed upon, and thereafter to proceed according to the principles of international law.

Article 36 sets out that the 1995 Mekong Agreement replaces previous agreements, i.e. the Statute of the Committee for Coordination of Investigations of the Lower Mekong Basin of 1957 as amended, the Joint Declaration of Principles for Utilization of the Waters of the Lower Mekong Basin of 1975, and the Declaration Concerning the Interim Committee for Coordination of Investigations of the Lower Mekong Basin of 1978, and all Rules of Procedures adopted under such agreements. However, the 1995 Mekong Agreement does not replace or take precedence over any other treaties, acts or agreements entered into by the Parties, except where a conflict in terms, areas of jurisdiction of subject matter or operation of any entities created under existing agreements occurs with any provisions of the agreement. According to Article 37, the Agreement may be amended, modified, superseded or terminated by the mutual agreement of all Parties.

Parties are free to enter into bilateral or multi-lateral special agreements or arrangements for implementation and management of any programs and projects to be undertaken within the framework of the Agreement.[832] They may withdraw or suspend their participation under the Agreement by giving written notice to the Chairman of the Council of the Mekong River Commission, who shall acknowledge receipt thereof and immediately communicate it to the Council representatives of all remaining Parties, taking effect one year after the date of acknowledgement or receipt unless such notice is withdrawn beforehand, or the Parties mutually agree otherwise.[833]

10.11. Appraisal

Summarizing the legal regime of the 1995 Mekong Agreement, the following features of the agreement are noteworthy. The agreement provides for a harmonized view of the regimes of uses and protection. Unlike the piecemeal arrangement in the previous agreements, e.g. the 1926 agreement (between France and Siam) concerning boundary issues and the 1957 Statute of the Committee of Investigations of the Lower Mekong Basin, the 1995 Mekong Agreement takes a harmonized view of navigational use, non-navigational uses and environmental protection.

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[832] Article 39.
[833] Article 40.

The 1995 Mekong Agreement recognizes the freedom of navigation in establishing the regime of navigational use and at the same time interrelating the regime with the regime of non-navigational uses, applying the principle of equitable utilization and sustainable development. As to environmental protection, the 1995 Mekong Agreement recognizes sustainable development as a national objective of the basin States in the context of the principle of equitable utilization.

China is not a party to the 1995 Mekong Agreement. However, it is reported that China will eventually adhere to the Mekong regime, in particular as it regards the navigational use of the Mekong basin and promotion of tourism in the region. While talking about the Mekong one has to remember the upper riparian position of China and recall its objection to the 1997 UN Convention[834] whereby the parties of the 1997 UN Convention are expected to adjust any previous agreements to be in accord with the Convention, or conclude new agreements in line with the principles of the Convention. The 1995 Mekong Agreement is based on the new development approach of accountability/transparency. This embraces an integrated water resource management (water, land, transport, fisheries) and established mechanisms for conflict resolution. The plan works through a system which is based on the process of negotiation, notification to each other about their respective activities, e.g. the Thailand must notify the Vietnamese government about canal plans that would divert water from the headwaters in Burma. Certain activities are flatly prohibited, e.g. no country is allowed to withdraw water during dry season, the definition of which was recently agreed upon.

The futuristic aspect of the 1995 Mekong Agreement is seen in the basin development plan, which is a bottom up scheme that devolves power to district levels and sub areas. Acclaimed as a model agreement of harmonious regimes of international watercourses, the 1995 Mekong Agreement provides for the principles of use, protection and improvement consistent with the provisions provided for in the 1997 UN Convention. Theoretically, the 1995 Mekong Agreement can be a model for other international watercourses to follow in harmonizing the legal regimes of navigational use, non-navigational uses and environmental protection. Among other remarkable characteristics of the 1995 Mekong Agreement is the recognition of the principle of sustainable development, in spite of the general hostility of developing countries towards this principle. The main elements of integrated management are found in the Mekong regime.

[834] Statement made by the Chinese representative, Gao Feng, Press Release GA/9248, May 21, 1997.

CHAPTER 11: HIMALAYAN WATER BASIN

11.1. Introduction

The Himalayan basin States lagged far behind in watercourse management compared to other basin management systems in South East Asia. The purpose of this part of the study is that by reviewing and analyzing the existing legal arrangements of the Himalayan drainage basin to try to answer the following questions: Are the existing legal arrangements satisfactory with respect to harmonizing the regimes of navigational use, non-navigational uses and environmental protection? If not, what amendments and adjustment measures in the existing arrangements can provide for a regime of integrated management and sustainable use. An additional question is: Should the adverse environmental impact of water resource development projects be a basis for repudiation of an existing treaty?

Focusing on the need for protection and uses of the Himalayan drainage basin and catchments areas, the regimes of navigational use, non-navigational uses and environmental protection will be examined in terms of the main constituent elements of integrated management, i.e. concepts and approaches, substantive principles, implementation mechanisms and dispute settlement rules. In this study, the watercourses flowing between Nepal and India as well as Bhutan and India are referred to as the upper part of the Himalayan drainage basin and the watercourses flowing between India and Bangladesh are referred as the lower part.

The 1996 Mahakali and the 1996 Ganges treaties are two main agreements relating to the Himalayan drainage basin, which is an integral part of the Hindu-Kush-Himalayan (HKH) Mountain region, covering all or parts of Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. Before analyzing these two treaties, a brief note about the geography of the area is in order.

The glaciers of the frozen Himalayas, fed by the monsoon precipitation, which occur each year from June to September, nourish the hydrology of the HKH Mountain region.[835] The major rivers of the HKH Mountain region include the Yangtze and Yello rivers, the Indus, the Ganges (also called the Ganga), the Yarlung-Tsampo-Brahmaputra, the Nu-Salween and the Mekong.[836] Constituted by the Tibetan plateau, the Brahmaputra-Gangatic plain and the vast Himalayan terrain,[837] the area of the Himalayan drainage basin is an ecological province,[838] sustained primarily

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[835] For records of the monsoon rainfall pattern in South Asia see, *Mountains and Rivers of India, 21st International Geographical Congress*, National Committee for Geography India 1968, pp.231-243.

[836] *Proceedings of the Regional Workshops on Local Water Harvesting for Mountain Households in the Hindu-Kush-Himalayas*, March 14-16, 1999, ICIMOD, 2000, pp.1-10.

[837] *Mountains and Rivers of India,* 1968, pp.187-431.

[838] The concept of the "eco-province" relates to ecology in general, human environment in particular, to all eco-belts in resource management, entailing that watercourses need careful

by the Ganges-Brahmaputra-Meghna river system. Originating in the Himalayas, these three rivers empty into the Bay of Bengal. This case study is limited to the Himalayan drainage basin, which includes the basin States Bangladesh, Bhutan, India, Nepal, and Tibet/China.

Two major watercourses of the Himalayan drainage basin are the Ganges and Brahmaputra, which flow in the upper western and eastern parts of the Himalayas respectively. The length of these rivers is estimated to be approximately 1,758,000 sq. km. out of which 8% lies in Bangladesh, 8% in Nepal, 4% in Bhutan, 62% in northeastern India, and 18% in the Tibetan region of China.[839] The flow of the Ganges-Brahmaputra rivers is about 42,426 and 55,535 million cubic meters, respectively.[840] About 94% of the water that flows in the Ganges-Brahmaputra is situated in the catchment area in Nepal and Bhutan.[841] The Himalayan drainage basin finally empty into the Bay of Bengal.[842] More than four hundred million people, with a high population growth rate, live in the basins of the Ganges-Brahmaputra-Meghna. Their quality of life is constrained by poverty, and inextricably linked to the overuse of these rivers, and the lack of protection and improvement of these watercourses.

Four major tributaries of the Ganges watercourse flowing in the upper western side of Himalayan drainage basin are the Mahakali, Kosi, Gandak and Karnali rivers.[843]

With respect to the Mahakali River, the bilateral agreements between Nepal and India are: the Letter of Exchange Between Nepal and British India for the Construction of Sarada Barrage 1920 (hereinafter referred to as the "1920 Sarada Barrage Agreement");[844] the Agreed Minutes of the Second Meeting of the Indo-Nepal Joint Commission 1991(hereinafter referred to as the "1991 Agreed Minutes");[845] the Joint Communiqués 1992 (hereinafter referred to as the "1992 Joint Communiqué");[846] and, the Treaty

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management in power generation, agricultural productivity, transport development, urban settlement and industrial establishment. Maxey, in a paper, "The Future of Earth's Water: What Must Be Sustainable?" the author suggests that we must expand our problematic arc so that we can focus upon human ecology as a necessary condition for achieving environmental protection, *Proceedings, Integrated Land and Water Management Challenges and New Opportunities, Fourth Stockholm Water Symposium*, August 9-13, 1994, Stockholm, Publication No. 4, p.60.

[839] Uprety, 1993, p.41.

[840] Thapa and Pradhan, 1995, pp.25-27; Uprety, 1993, p.42; *Mountains and Rivers in India,* 1968, pp.211-216.

[841] Thapa and Pradhan, 1995, pp.25-27.

[842] *Mountains and Rivers of India,* 1968, pp.196-203. About the Brahmaputra-Meghna River system, see ibid. p.203.

[843] Thapa and Pradhan, 1995, p.26.

[844] The Letter from Maharaja Chandra of Nepal to Colonel Kennion August 23, 1920; Letter from the British Legation, Nepal, to Maharaja Chandra, Nepal, October 21, 1920 on file with the Nepal National Archives.

[845] The Agreed Minutes were published in Nepal Gazette, January 1992.

[846] On the 1992 Joint Communiqué see, *Neupane v. Prime Minister of Nepal Koirala*, Writ No.1851 the Supreme Court of Nepal 1992.

Between His Majesty's Government of Nepal and the Government of India Concerning Integrated Development of the Mahakali River 1996 (hereinafter referred to as the "1996 Mahakali Treaty").[847]

As regard the Kosi River, the Agreement reached between the Government of India and the Government of Nepal on the Kosi Project in 1954 still remains as the prevailing arrangement regarding this river (hereinafter referred to as the "1954 Kosi Agreement").[848] This Agreement was revised in 1966 with provision for land required for the construction of the Kosi Project in Nepal to lease to India with compensation for a period of 199 years from the date of the agreement.

As to the Gandak River the existing bilateral agreements are: the Agreement between His Majesty's Government of Nepal and the Government of India on the Gandak Irrigation and Power Project 1959 (hereinafter referred to as the "1959 Gandak Agreement")[849] including the Exchange of Letters between the two countries in establishing the Coordinating Committee.[850]

One agreement concerning the river flowing in the eastern drainage of the Himalayan basin is the Bhutan-India Agreement on the Wangchu River 1996 (hereinafter referred to as the "1996 Wangchu River Agreement"),[851] which concerns the hydroelectrical project involving the upper eastern parts of the Himalayan drainage basin.

In the southern part of Himalayan basin, there are more than 54 small rivers flowing from India to Bangladesh. With respect to this section of the drainage basin the legal regime is as follows.

After the expiry of the temporary arrangement of 1975 Bangladesh-India Agreement on Sharing of the Ganges Waters was concluded in 1977 (hereinafter referred to as the "1977 Ganges Agreement"),[852] which lasted until 1988 through the 1985 Memorandum of Understanding between the two countries.[853] Ending a deadlock of eight years, the governments of the Union Republic of India and of the Republic of Bangladesh concluded the Treaty on Sharing the Ganges at Farakka 1996 (hereinafter referred to as the "1996 Ganges Treaty").[854]

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[847] See, 36 *ILM*,1997, p.533.

[848] *ST/LEG/SER.B/12,* Legislative text and Treaty No.95.

[849] Ibid, Treaty No.96.

[850] The Exchange of Letters, December 4, 1959, the same date of the Agreement. The Exchange of Letters 1964 amending Clause 9, deleting Clause 10 and adding a provision under Clause 7(v) of the 1959 Gandaki Agreement. Both the Kosi and Gandak regimes have been discussed in this study.

[851] *International Water Power and Dam Construction,* April 1996.

[852] Agreement on Sharing of the Ganges' Waters, signed by India and Bangladesh at Dhaka, November 5, 1977, Government of Bangladesh Ministry of Foreign Affairs External Publicity Division Dhaka, No-14 (1) 76-EP.IV.

[853] The earlier agreements between India and Bangladesh concerning the Ganges River have already been discussed in this study.

[854] See, 36 *ILM*, 1997, p.519.

After this short background description of the geography of the rivers and relevant agreements, the concepts and approaches of the 1996 Ganges and Mahakali treaties will be discussed.

11.2. Concepts and Approaches

In its Preamble, the parties to the 1996 Ganges Treaty have expressed their desire for sharing "the waters of the international rivers flowing through the territories of the two countries". Judging by the title of the 1996 Ganges Treaty, "Sharing the Ganga/Ganges Waters at Farakka", the expressions in the preamble are noteworthy since it suggests that the parties are willing to share the waters beyond those at Farakka. This conceivably could be interpreted to cover all watercourses that are flowing through the territory of the two countries, and this has implications in terms of concepts and approaches for an integrated management concerning the regimes of uses and protection.

In the Preamble, the parties have also expressed that they are desirous of river basin development. That the parties are inclined to river basin development rather than the international drainage basin development is significant. Given the interconnection between the hydrological geographical, human and environmental reality of the region, the concepts and approaches of the 1996 Ganges are narrow, lacking the broader scope of the international drainage basin approach. Nonetheless, it must be noted that by including the term river basin development in the Preamble of the 1996 Ganges Treaty, the parties have adopted a wider approach than the 1977 Ganges Agreement, which makes no mention of such terms.

In a sharp contrast to the 1996 Ganges Treaty, the 1996 Mahakali Treaty adopts the traditional boundary river concept. For example, in its Preamble, it provides that, "the Mahakali River is a boundary river on major stretches between the two countries. This may imply that the minor stretches of this river are to be considered a successive river. The Treaty seems to deal only with the major stretches of the boundary river, leaving the minor stretches as well as the international drainage basin outside of its scope.

Thus, it can be said that both the Ganges and Mahakali treaties adopted in the 1990's lack broad approaches that integrate the uses and protection of the Himalayan basin as a whole.

11.3. Substantive Principles

At the outset it must be mentioned that in its Preamble the parties to the 1996 Ganges Treaty deliberately avoid the establishment of any general principles of law or precedent in the treaty. This bears resemblance to the 1960 Indus Treaty, under which India and Pakistan adopted language that embraced the principle of equitable utilization as a governing principle; yet both countries stressed that there was no *general* principles established by the treaty. The 1996 Ganges Treaty adopted the principle of good

neighborliness, which is the genesis of the principle of equitable utilization of international watercourses. In addition, the Preamble of the 1996 Ganges Treaty expresses the desires of the parties to find a fair and just solution without affecting the rights and entitlements of either party. This provision seems to be inclined towards existing use by recognizing rights and entitlements. And also, by mentioning a fair and just solution, it implies assent to one of the criteria of the principle of equitable utilization. At the UN General Assembly debate (1975), Bangladesh and India argued for the principle of equitable utilization; simultaneously, Bangladesh complained of India's unwillingness to share the waters of the Ganges. Still, the parties to the 1996 Ganges treaty avoid clearly mentioning the principle of equitable utilization.

The 1996 Mahakali Treaty does not disregard the establishment of any general principle of law or precedent. Unlike the 1996 Ganges treaty, the 1996 Mahakali Treaty declares its adherence to the principle of *close neighborliness* (as opposed to *good neighborliness)*.[855] The Mahakali Treaty is based on the premise of equal partnership, defining the obligations, rights and duties of the parties. Article 9 of this Treaty establishes the Mahakali River Commission, and states that "the Commission should be guided by the principles of equality, mutual benefits and no harm to either party." The same Article mentions the need for conservation and utilization of the river.

In examining the legal regime of the 1996 Mahakali and the 1996 Ganges treaties, in terms of substantive principles, it is relevant to highlight the perceptions and roles of the Himalayan basin States concerning the 1997 UN Convention. At the time of adoption of the Convention, Bhutan and India abstained, and Nepal and Bangladesh voted for adoption of the Convention.[856] China, the upstream State not only of the Himalayan Rivers but also of the Mekong River, made the following remarks while voting against the adoption of the Convention:

> There were obvious drawbacks in the draft convention. First, it failed to reflect general agreement among all countries, and a number of States had major reservations regarding its main provisions. Secondly, the text did not reflect the principle of the territorial sovereignty of a watercourse State. Such a State had indisputable sovereignty over a watercourse that flowed through its territory. There was also an

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[855] The Swiss Court in *Aargau v. Zurich (*1898) relating to the Zwillikon Dam and water allocation between two cantons held the view that where the interests of two cantons are in conflict, the principles of *good neighborliness* apply, in which each canton is entitled to the rational utilization of the waters corresponding to its needs. The decision essentially rests upon the principle of equitable apportionment. *Recueil Officieal des Arets du Tribunal Fedral* IV, 34, 1878.

[856] UNA/51/869,April 11,1997, the *Fifty-first Session Report of the Sixth Committee convening as the Working Group of the Whole*, and *Official Record of the General Assembly Forty-Ninth Session,* Supplement No.10 (A/49/10) Chap.II.D.

> imbalance between the rights and obligations of the upstream and downstream States. He said China could not support provisions on the mandatory settlement of disputes that went against the principles set out in the United Nations Charter. His Government favored the settlement of all disputes through peaceful negotiations. Accordingly, he would vote against the draft resolution to which the draft convention was attached.[857]

The negative vote of China may be attributable to its upstream position, perhaps with respect to the plan to construct an additional dam in the upper Mekong River. As long as China directly controls Tibet, agreements concerning the Himalayan drainage basin have a direct impact on Chinese interests. However, if Tibet were to become independent or remain as an autonomous province of China, it would accordingly assume control of its share of the basin.

In the above-cited explanation of its vote, China made clear its views on Articles 5, 6 and 7 of the 1997 UN Convention, which deal with the principle of equitable utilization, the criterion of equitable utilization and the no-harm rule respectively, as an unbalanced provision of the rights and duties of upstream and downstream States. At the same time, in the 1994 transboundary water agreement regarding the Halaha River, Kerulen River, Bulgan River and Bor Nor Lake, China and Mongolia included in their agreement those very principles provided by the 1997 UN Convention. Article 2 of the 1994 China-Mongolia agreement includes the principle of equitable and rational use while Article 4 provides that use should not be detrimental to the other party.[858] China, in the above-cited explanation of its vote, also appears to support the process of dispute settlement, but not to the extent to which that includes mandatory settlement. However, its reasoning for opposing to Article 33 of the 1997 UN Convention, which provides for process rather than mandatory settlement, is unclear. Presently, there exists no watercourse-related agreement between China and the other Himalayan basin States. In any possible negotiation relating to the protection and use of the Himalayan drainage basin, the Chinese perception and role needs to be better understood, given China's reaction to the adoption of the 1997 UN Convention.

India, a downstream State from Bhutan and Nepal, but upstream from Bangladesh, expressed regret that the Convention had not been adopted by consensus. While a framework convention should provide general principles, the present Convention had deviated from that approach, India

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[857] Statement made by the Chinese representative, Gao Feng, Press Release GA/9248, May 21, 1997.

[858] Agreement concerning the Halaha River, Kerulen, Bo Nor Lake and Bulgan River (China and Mongolia), see 36 *NRJ*, 1996, p.430.

claimed. Specifically, India's representative had reservations regarding articles 3, 5, 32, and 33 of the Convention. India held the view that:

> Article 3 had not adequately reflected a State's autonomy to conclude agreements without being fettered by the Convention. Article 5 had not been drafted clearly and would be difficult to implement. The Convention had superimposed the principle of sustainable utilization over the principle of utilization without appropriately defining the term sustainable. India had abstained in the voting on draft articles 5, 6 and 7 in the working group. Article 32 presupposed regional integration and hence did not merit inclusion, he went on to say. Article 33, on dispute settlement, contained an element of compulsion. Any procedure for peaceful settlement of disputes should leave the procedure to the parties. Any mandatory third-party dispute procedure was inappropriate and should not be included in a framework convention.[859]

India voted against the provision in the Working Group of the Sixth Committee of the General Assembly, stating that it still would have voted against it had the article been put to a separate vote. In the end, India abstained when the Convention was put to a vote in the General Assembly. The Indian statement notes that the framework convention went beyond its limits, noting that Article 3 of the Convention contained provisions that would apply to situations where no agreement exists concerning an international watercourse. Nepal and Bangladesh probably do not share India's perception of Article 3 of the Convention.[860] India opposed Articles 5, 6 and 7 of the 1997 UN Convention, which provides for the principle of equitable utilization and no-harm rule, while in contrast, the 1960 Indus Treaty between India and Pakistan includes these principles. India was opposed to Article 2 of the 1997 UN Convention, which allows regional organizations to be party to the Convention. Bhutan's representative made no statement, but, like India, Bhutan abstained from the General Assembly vote on the 1997 UN Convention,[861] which may be interpreted as India and Bhutan having a common view on the Convention. Since Bangladesh and Nepal voted in favor of the 1997 UN Convention, though have not yet ratified it, it would seem that they agree with the principles of the Convention in its entirety.

In order to explore the substantive principles further in the existing legal regimes of the Himalayan basin, the bilateral relations of the basin States need to be taken into perspective. In this context, one should also look into the region's bilateral agreements other than those regarding watercourses.

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[859] Statement made by the Indian representative, Prakash Shah, Press Release GA/9248, May 12, 1997.
[860] Ibid.
[861] Ibid.

The Bhutan-India relationship is determined by the 1949 Treaty, which requires Bhutan to seek advice from India relating to its defense and foreign affairs. In 1980, Bangladesh and Bhutan established diplomatic relations. However, trade and transit between the two countries is regulated on a temporary basis, which needs to be negotiated after the expiration of the existing agreement.[862] The Treaty of Peace and Friendship (1950) recognized the mutual independence and determined the status of the Nepal-India relationship.[863] One of the unresolved and controversial issues of their bilateral relations is the Arms Assistance Agreement (1965), which requires Nepal to buy arms from India.[864] The trade and transit relations between the two countries are laid out in the Joint Communiqué (1992), which requires the renewal of the existing treaties every five years.[865] Within these framework relationships, the Preamble of the 1996 Mahakali Treaty aims to promote close relations rather than good neighborliness between Nepal and India.[866]

With reference to Nepal's relation with China and India, the term *special* relations, *close* relations, and friendly relation are used differently, depending on the context. For example, Nepal's relation with India is described as special, and with China as friendly.[867] On the one hand, there exists a special regime of border relations between Nepal and India, which allow free entry and exit to the citizens of the two countries. On the other hand, there is a tacit regime of Nepal's trade and transit, including the right of access to the sea by and through India, which is one of the main issues of ongoing contention between the two countries. The Bangladesh-India Treaty of Friendship, Cooperation and Peace (1972) provides for a framework of relationships between the two countries.[868] Within this framework, the Preamble of the 1977 Ganges Agreement aimed to promote and strengthen good neighborliness.[869] From 1971 (the independence of Bangladesh from Pakistan) until 1980, the India-Bangladesh relationship was known as *special*, but since 1980, the relationship is described as friendly. This period has been marked by a deadlock between the two countries, as a result of non-renewal after the expiration of the 1977 Ganges Agreement. The Preamble of the 1996 Ganges Treaty reiterates the aim of

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862 The existing agreement expires in September 2000 and the new agreement could be more than 10 years.

863 Text of the Treaty see, (Documents on Nepal's Relations with India and China 1949-66) Bhasin, 1970.

864 Kumar, (Kumar DP, "Chinese Anti-Aircraft Guns: Nepal Violated Secret Agreement with India," *The Statesman,* New Delhi) 1989.

865 On the 1992 Joint Communiqué see *Neupane v. Prime Minister of Nepal Koirala*, Writ No. 1851 the Supreme Court of Nepal 1992.

866 See, 36 *ILM*, 1997, p.519.

867 Kumar (Kumar D*, Nepal's India Policy*, CNAS), 1992, pp.5-29.

868 This treaty lapsed in March 19, 1997.

869 India-Bangladesh Agreement on Sharing of the Ganges' Waters 1977, Government of Bangladesh Ministry of Foreign Affairs External Publicity Division Dhaka, No-14 (1) 76-EP.IV.

the 1977 Agreement, which includes the principles of good neighborliness.[870]

Except for its strategic ties with India's rival sibling Pakistan, China's relations with the other South Asian countries are businesslike. No agreement exists between China and the other States sharing the Himalayan drainage basin. However, following the 1960 Nepal-China Treaty of Peace and Friendship, the two countries signed the 1961 Nepal-China Boundary Treaty, under which China controls the northern access to Mount Everest and Nepal the southern access. It is relevant here to note that in the Nepal-China Boundary Treaty, the watershed of Mount Everest is considered as a boundary line between the two countries, and the term as such has relevance to the definition of the term international drainage basin (Article II of the 1966 ILA Helsinki Rules).

After Indian independence from Britain (1947), and the establishment of communist China (1949), both countries attempted to maintain friendly relations from the 1950's onwards. Issues relating to the approximately 14,500 square miles of territory in China's Aksai area of eastern Kashmir, and 36,000 squire miles of Arunachal Pradesh in northeast India bordering Bhutan, led to an armed conflict between the two countries (in 1962).[871] After approximately 14 years of severed diplomatic relations, ambassadors were exchanged between India and China in the mid-1970's. During the Indian Prime Minister's 1988 visit to China, an agreement was reached to establish a Joint Working Group of technical personnel to facilitate a settlement through peaceful and friendly consultation.

Regarding the boundary dispute between the two countries, no progress is made. In 1993, an agreement was signed to reduce military troop levels and respect the existing Line of Actual Control without prejudice to the rival claims. Prior to the 1998 Indian nuclear test, the Indian Defense Minister asserted that China, not Pakistan, posed the single greatest security threat to India.[872] Thus, the 1962 China-India conflict remains in the background of the present and future relations of the two countries.

Even though India and China have indicated desires to improve their bilateral relations, an atmosphere of rivalry exists between the two countries. In this equation, the state of bilateral relations of the United States with China and India are vital either in helping or hindering the improvement of China-India relations, which in turn influences South Asia. Because of past colonization and foreign domination, both communist China and non-communist India are, in their own ways, nationalistic.

At present, China's relations with Pakistan are more cordial than the relations India has with either Pakistan or China, and all three are the only nuclear powers in the region.

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[870] See, 36 *ILM*, 1997, p.519.
[871] *Political Handbook of the World*, 1999, p.437.
[872] Ibid.

Having its source in Tibet, the Arun is a tributary of the Kosi River, which is a tributary of the Ganges watercourse. Apart from environmental consequences, the implications of the Arun III project (which was eventually cancelled by the World Bank) would have been complicated, given China's interest in Tibet, and in water resource development in Nepal. A private Chinese firm had been contracted by Nepal to produce hydroelectricity, which had inflamed the hydro-politics of mutual suspicion in the region.

The 1996 Mahakali Treaty and the 1996 Ganges Treaty appear to be agreements that were concluded on the basis of a mutual suspicion among the Himalayan basin States. When the multilateral arrangement of the Ganges watercourse was an agenda item in the negotiations between the concerned States in the late 1980's, it was reported that India suspected Bangladesh and Nepal of creating an alliance against India.[873] Another rumored suspicion was that if a multilateral arrangement of the Ganges watercourse were to be established, Nepal might demand the navigational right to Bangladesh through the Ganges watercourse in India.[874] It is also known that Nepal maintains an officially positive attitude towards the multilateral management approach to the Ganges proposed by Bangladesh (a position they held throughout the 1980's), but has quietly blocked it.[875] India has adopted bilateral water resource development approach dealing separately with Bangladesh and Nepal. Bangladesh has rejected the Indian proposal for linking the Ganges-Brahmaputra rives, suspecting that politically, it would give the upper hand to India.[876] When a gas pipeline was proposed from eastern Bangladesh to India, many Bangladeshi people expressed the sentiment that "they would rather send blood than gas to India."[877]

No matter how the relationships are described on the official level, this is a symbolic expression of the people in Bangladesh against India. It is important to note that the governments of Bangladesh and Nepal generally advocate a regional approach for water sharing and management, but the reality is that they have to settle for concluding bilateral agreements with India.[878] The failure of the initiatives for multilateral negotiations of the

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[873] Crow, Lindquist and Wilson, 1995, pp.159-218.

[874] Uprety, 1993, p.143.

[875] Ohlsson, 1991, p.152.

[876] *Proposal for Augmenting the Dry Season Flow of the Ganges*, Ministry of Agriculture and Irrigation, Department of Irrigation, New Delhi, March, 1978.

[877] Jairam, *Times of India*, April 10, 2000, p.35.

[878] Bangladesh suggested 12 possible storage dams on the Karnali, Gandaki and Sapta Kosi, Arun and Tamu rivers. In addition to them, a canal constructed along the southern part of Nepal known as terai could supply waters from the Gabdaki River and Kosi to Mahananda, Korotoya and Atrai to meet the dry season. Nepal's attitude towards the proposal of Bangladesh was positive, see Water – The Key to Nepal's Development Ministry of Water Resources, Kathmandu, March 1981. However, India's reaction to the proposal of Bangladesh was based on the assumption that the construction of the proposed dams would

Ganages-Brahmaputra rivers in the 1980's, and the lack of an integrated management regime of the Himalayan rivers, is evidence of the level of distrust among Nepal, India and Bangladesh. As there exist mutual suspicion, the maintenance of territorial sovereignty and the control of resources therein appears to be is the primary goal of the foreign policies of all Himalayan basin States.

Situated between China and India, land-locked Bhutan and Nepal have advantageous positions, either playing the two powers against each other or remaining neutral in dealing with the powerful neighbors, as well as having the disadvantages being squeezed between the two big neighbors. Compared to upper riparian India, the weaker position of lower riparian Bangladesh is apparent, which additionally suffers from too much water during the monsoon season and too little water during the dry season. A majority of Bangladeshi and Nepali politicians view India as an imperialist, and in turn India views its counterpart politicians as paranoid, incapable of making sensible commercial deals.[879]

Given the politics among the Himalayan basin States, the existing bilateral arrangement of the Ganges watercourse appears to be an outcome of a tacit negotiation of the positions of the parties, which provides for measures of water use allocation only to the extent the normative national interests allows the parties to agree. The agreements are not necessarily based on the long-term sustainable needs and benefits of what the people of the region deserve. This also indicates the limitations of the Ganges watercourse States and the reason for the short-term piecemeal deals that are sought, despite the need for long-term sustainable management.

Bearing in mind this background, the following section focuses on the contentious issue of sovereignty, including the issues of equal and unequal positions of the parties to the treaties. We will examine the existing agreements concerning the Ganges watercourse and its tributaries, the nature of which suggests that the maintenance of sovereignty and the competition for the control of resources have been the foreign policy objectives of the Ganges watercourse States.

The territorial sovereignty of the South Asian riparian States has been a controversial issue. In the 1920's, Great Britain and Nepal concluded the Sarada Barrage Agreement concerning the Mahakali River. This included a land exchange between British India and Nepal, even though the agreement was meant for irrigation and a hydroelectricity project. According to the Agreement, about 4,000 acres of land was transferred from Nepal to India. In return, British India was to compensate Nepal by providing 4,000 acres to Nepal. However, in the absence of a record as to when, how and where the land was to be transferred to Nepal, a conflict

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lead issues which should be dealt with in a multilateral context. India therefore reacted negatively to the proposal see, Uprety, 1993, p.142.

[879] *The Economist*, January 25, 1997, p.59.

arose (and still exists) between Nepal and India regarding the exchange of letters, and over the location of the land.[880]

The Mahakali River is recognized as the border in its *main scratches* forming the border between Nepal and India according to the 1996 Mahakali Treaty.[881] However, in its minor scratches the position of the Mahakali River remains unclear. The term *main scratches* is not defined, nor is the term successive position addressed in the 1996 Mahakali Treaty. This is important not only in relation to the issue of territorial sovereignty, but also the riparian right to the use of the river and the obligation to protect its water, which are determined according to such positions. The Mahakali is contiguous river in its main part, but successive in minor parts.[882] After the conclusion of the 1996 Mahakali River Treaty, the minor scratches remained as an issue of conflict between the parties concerning territorial sovereignty.[883]

The controversial issue of territorial sovereignty was partly resolved in the 1960's. According to the Nepal and India Lease Agreement 1965-66, Nepal retained its sovereignty over its land area of the Kosi Project, but Nepal also recognized India's ownership of that land. Bangladesh and India also made a permanent lease arrangement (1992) regarding the transit between the two countries by which India provided transit facilities to Bangladesh. Despite this cooperation, public controversy still exists concerning the watercourse-related treaties, raising the question of sovereignty, equal and unequal positions of the parties to the treaties.[884]

One apparent problem in the Himalayan region is that the general public is not confident about the watercourse-related treaty making, and there is lack of consensus among the general public. In Nepal and Bangladesh, the political opposition parties usually criticize any deal between India and their respective ruling parties. Similar criticism exists in India among different opposition groups for different reasons. In Nepal and Bangladesh, water related agreements with India are either criticized

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[880] The Letter from Maharaja Chandra, the then Prime Minister of Nepal, to Colonel Kennion (August 23, 1920); Letter from the British Legation, Nepal, to Maharaja Chandra, Nepal (October 21, 1920) on file with the Nepal National Archives. It was confirmed in a letter dated October 12, 1920, No.2914 that Nepal was supposed to obtain 4,000 acres of land.

[881] Preamble of the Treaty.

[882] According to the 1818 Sugali Treaty between British India and Nepal, which recognizes the present border between Nepal and India, the Mahakali (Kali) is recognized as a border River. According to the Sugali Treaty, the Raja (King) of Nepal renounces its claim "beyond" the Kali River. The term "beyond the Kali River" in the Sugali Treaty may be a question of interpretation, whether the term meant Mahakali as a sole Nepal River and thus the border between British India and Nepal is beyond the said River, or whether it means the same thing as the said clause.

[883] The Purnagiri barrage is one of the sources of conflict regarding the 1996 Mahakali Treaty.

[884] Among others, the controversies of an unequal treaty are factors in domestic politics that can be responsible either for the rise or the fall of governments surrounding the Ganges watercourse.

as an unequal treaty or as the sell-out of their national interests to India. These kinds of criticisms are made, in spite of the fact that India is the primary donor of aid to Nepal. As well, India initially helped to establish the sovereignty of Bangladesh when, as East Pakistan, it struggled to break away from Pakistan.[885] It is against the perceptions, roles and international politics of the Himalayan basin States, that the management of shared watercourses runs its course.

In the following section, we will review and analyze the existing legal arrangements from the point of view of the regimes of navigational use, non-navigational uses and environmental protection of the Ganges and Brahmaputra watercourse in South Asia.

11.3.1. Navigational Use

The Ganges and Brahmaputra are navigable watercourses, providing waterways to and from the Bay of Bengal. Navigational facilities through these rivers are available across borders if the countries of the region agree for mutual cooperation.[886] India and Bangladesh rely on inland navigation for public and goods transportation through the Ganges River.

As land-locked States, Bhutan and Nepal are dependent for transit through India and Bangladesh in order to gain access to and from the sea. Both Nepal and Bhutan need to use the seaports of India and Bangladesh for trade and commerce. Navigational use of these rivers is important for all the regional States. A small strip of land separates both Nepal and Bhutan from Bangladesh, land that lies in India.

Recognizing their transportation needs, in 1997 India allowed Nepal access to its Fulwari border (to reach to Bangladesh) crossing the northwest border post district of Bangladesh. The Kakarvitta-Fulwari-Banglabandh route provides the shortest access (only 44 kilometers) to Bangladesh's border for Nepal's trade and commerce with and through Bangladesh and on to the port of Mongla. This is the shortest distance from both Kathmandu and Thimpu, the capitals of Nepal and Bhutan, respectively. As India has opened the Kakarvitta-Fulbari-Banglabandh transit route to Nepal to facilitate trade and business with Bangladesh and third countries, it is likely that Bangladesh would not deny this route to Bhutan. Apart from rail and road transport, the Ganges-Brahmaputra basin States could use inland river navigation. The Calcutta port situated on the banks of the Hooghly River is the outlet of the Ganges River, and Nepal and Bhutan are dependent on the Calcutta port for export and import overseas. The estuarine problems of the Calcutta Port have been studied for more than a century. Enquiries into the problems were started as early as the 1850's and were continued by a long series of experts and commissions.[887]

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[885] Bangladesh became independent from Pakistan in 1971 and in its war of independence received decisive support from India.

[886] Uprety, 1993, p.74.

[887] *Press Release, Permanent Mission of India to the UN*, November 16, 1976.

11.3.1.1. The Farakka Barrage

The legal and technical aspects involved with the Farakka Barrage illustrate perfectly the scenario where navigational use affects non-navigational uses, and vice versa. At the same time, the combined effect of the navigational and non-navigational uses of the river led to dire consequences for the regime of environmental protection. The Farakka Barrage is located within the territory of India. It has not only transboundary effects (in Bangladesh, the downstream State) but also has implications for the development of water resources within the national jurisdiction (of India). In other words, it relates one State's right to use an international watercourse and its corresponding duty vis-à-vis other States not to abuse this right.

India began planning the Farakka Barrage in the early 1960's, and construction was completed in the early 1970's. The Farakka Barrage is capable of diverting up to 40,000 cubic feet of water per second from the Ganges to the Hooghly River. With the lean season flow of the Ganges ranging between 50,000 to 55,000 cubic feet per second during mid-April to early May, this would leave 10,000 to 15,000 cubic feet per second for Bangladesh. According to India, the aims of the Farakka Barrage are:

1) to flush silt from the Bhagirathi-Hooghly channel and to help keep the Calcutta port open for ocean-going vessels,
2) to counteract a high concentration of salinity in the water, and
3) to provide Calcutta with water for irrigation and domestic use.

The aims of the Farakka Barrage clearly include navigational use, non-navigational uses and environmental protection. For example, flushing silt from water is important for navigational, non-navigational uses as well as for the improvement of environment. However, due to the lack of integrated management, the barrage is clearly causing adverse consequences to the environment of the area.[888]

India, initially, argued that matters related to the Farakka Barrage are technical and practical, not judicial, but Bangladesh insisted that the barrage is not only a technical but also a legal and environmental issue. The two countries, however, concluded an agreement in 1977, which was conflicted and updated in 1996.[889]

In the 1977 Ganges Agreement, India and Bangladesh agreed to a dry season flow allocation at the Farakka Barrage, which was updated under the 1996 Ganges Treaty. The Parties seem to view this as an equitable resolution of the problem. However, it does not address the vital issue of the protection of the watercourse. To address this situation, there is a need for an integration of the regimes of this international watercourse. In this

[888] Chowdhary, 1998, pp.137-168; Islam, 1987, pp.918-934.
[889] See, 36 *ILM*, 1997, p.519.

case, in the absence of any harmonization between uses and protection of the Himalayan basin, the frustrations rising from the lack of sustainable development are real. Commentator rightly observes:

> It is impossible to 'have both full-scale hydroelectricity development in Nepal (which is unsustainable in itself) and a sustainable agriculture in Bangladesh. The harbor of Calcutta cannot be flushed clear of silt if the agricultural demands on water in Bangladesh are to be satisfied. For the same reason, sustainable agriculture on the Indian Decca cannot be upheld on the level planned for by tapping the Ganges, if Bangladesh is not to suffer seriously'.[890]

Under the existing arrangement, navigation locks at the Farakka Barrage are under the supervision of the India-Bangladesh Joint Commission. Under Article IV of 1996 Ganges Treaty, the Joint Commission is responsible for observing and keeping daily records of water flow below the Farakka Barrage, the Feeder Canal and at the Navigation Locks as well as at the Hardinge Bridge.[891] In the subsequent section, there will be further discussion on the Farakka Barrage concerning the regime of non-navigational uses. Here, we will focus on the legal regime of navigational use of watercourse between Nepal and India.

Relating to the navigational use of the Himalayan rivers, the Kosi regime recognizes that "all navigation rights in the Kosi River in Nepal will rest with the Government of Nepal."[892] However, this does not as a whole include navigation on the Ganges watercourse.[893] Joint waterways are to be developed, managed and operated in accordance with the 1996 Mahakali Treaty. According to Article 2(3)(b), necessary waterways, as required, up to the Nepal-India border, are to be constructed to supply additional water to Nepal.[894] This legal provision is limited to a small portion of the Mahakali River. Interestingly, if a canal is excavated in Nepal to discharge water from the Gandak and Kosi rivers into the Mahananda in India and the Karatoa and Atrai in Bangladesh, a navigation route could be created, giving land-locked Nepal a navigable outlet to the Bay of Bengal via India and Bangladesh.[895] The environmental impact of such a project would of course have to be considered beforehand, in relation to the freedom of navigation on an international river. The freedom of navigation in inland waterways is important for the coastal States of the Bay of Bengal and land-locked Himalayan drainage States. As a land-locked State, for example, Nepal's trade with India has been regulated first by the 1923 Treaty with

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[890] Ohlsson, 1991, p.154.
[891] See, 36 *ILM*, 1997, p.519.
[892] *ST/LEG/SER.B/12* Legislative series and Treaty No.95.
[893] Ibid.
[894] See, 36 *ILM*, 1997, p.519.
[895] Islam, 1987, p.926; Thapa and Pradhan, 1995, pp.187-198.

British India and later by a series of treaties, successively (in 1950, 1960, 1971 and 1978). The 1978 Treaty expired in 1988 and was extended twice for six months each time, finally expiring in 1989. After a deadlock in negotiation over the treaties of trade and transit between Nepal and India in 1989-1990, the trade and transit issues between the two countries were settled in 1991 with a provision for extension every five years. This kind of ad-hoc approach to trade and transit also exists between Bhutan and Bangladesh, and India. The recognition of the freedom of navigation by India and Bangladesh for Nepal and Bhutan would certainly help to resolve the problems of the region.

Nepal and India might benefit by recognizing the regime of waterways of international concern, which is established by the 1921 Barcelona Convention and Statute.[896] Nepal is a party to the High Seas Convention (1958)[897] and the Convention on Transit Trade of Land-Locked States (1965).[898] India is a Party to the Law of the Sea Convention (1982),[899] providing the right of access of land-locked States to and from the sea. According to these conventions, land-locked States are granted a right of access to and from the sea. The modality of access is dependent on the mutual consent between the transit and the land-locked States. As long as the passage is innocent, the transit States are bound to guarantee the freedom of transit to the land-locked States. According to Article 125 of the Law of the Sea Convention (1982), Nepal and Bhutan have the right of access to and from the sea. They are entitled to enjoy freedom of transit through the territory of India and Bangladesh by all means of transport as provided for in Paragraph 1 of Article 125. The expression by all means of transport is related to paragraph 1(d) and 2 of Article 124 of the Informal Composite Negotiating Text elaborated in the Third UN Conference on the Law of the Sea (1982), which defines the multimode transport, which means "railway rolling stock, sea, lake and river craft and road vehicles."[900]

This provision defining the means of transport is identical in substance with Article 1(d) of the Convention on Transit and Trade of Land-Locked States (1965). It has been long contended that the freedom of navigation on international rivers or on the sea constitutes a natural right for land-locked States.[901] Freedom of navigation on international rivers is a necessity for land-locked riparian to use different means of access including land, water and air.[902] On the basis of the principle of servitude, necessity and

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[896] See, 7 *LNTS*,11.
[897] See, 450 *UNTS*,111.
[898] See, 597 *UNTS*, 42.
[899] UNDoc.A/CONF.62/122, 1982.
[900] Doc.A/CONF.62/WP.10, July 15, 1977, UNCLOS, Official Records, Vol.8.
[901] Caflisch, 1978, p.72.
[902] In the *River Oder Case*, the PCIJ recognized that all navigable ports, which provide for access to the sea, should be used for the freedom of navigation, implying the right of transit and access of the riparian States through international rivers. Similarly, in the *Oscar Chinn*

customary international law concerning access, in the *Right to Passage Case* the ICJ recognized the right of access through enclaves.[903] Because of the land-locked positions of Bhutan and Nepal, the navigational use of the Himalayan rivers is important for the promotion of commerce, trade and tourism, which also benefit the coastal States Bangladesh and India. All of this illustrates the need for an integrated legal arrangement of the regime of the Himalayan basin in South Asia. For Bhutan and Nepal, the right of access to and from the sea through the Himalayan rivers appears to be an important agenda item to be included for an integrated management of the Himalayan watercourses.

11.3.2. Non-Navigational Uses

The controversial issues for the Himalayan basin States in terms of non-navigational uses are paradoxical. On one hand, there is a need for full-scale hydroelectricity development and irrigation for agricultural development in the region, and on the other, the environmental protection of the region has to be taken into consideration. As mentioned before, the cleaning silt from the waters of the Calcutta port for navigational use during the dry season is important; at the same time the need for irrigation in Bangladesh cannot be overlooked. The overall paradox is that during the monsoons the region is flooded over, whereas during the off-season, there is a lack of water.

According to experts, the hydroelectric potential of the Ganges-Brahmaputra-Meghna rivers, if utilized, could change the economic condition in Bhutan, Nepal, India and Bangladesh. National Environmental Planning Commission of Bhutan has estimated that the country has a 20,000MW hydroelectric potential.[904] The hydroelectric potential in Nepal, as calculated by the United Nations Development Program and the World Bank, is 83,000MW, equal to the capacity of the United States, Canada and Mexico combined.[905] Nepal is believed to have the capability of becoming the Kuwait of South Asia, with hydroelectricity taking the place of oil.[906] This shows the importance of the non-navigational uses of the Himalayan watercourses.

According to statistics, the Ganges-Brahmaputra-Meghana rivers are estimated to have the capacity of 162,600MW, which could generate an estimated annual income for the countries of the region of up to $80 billion (US) per year. The total income that could be generated from the Himalayan water resources could be more than half of the value of all the

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Case the freedom of navigation was recognized along with the freedom of commerce and trade. See, Part VI.

[903] It is with respect to the Portuguese Administered enclaves in India where separated from Goa, see *ICJ Reports*, 1960, p.6.

[904] *Bhutan Towards Sustainable Development*, National Environmental Secretariat Planning Commission Bhutan, 1992, p.43.

[905] *Nepal: Policies for Improving Growth and Alleviating Poverty*, the World Bank, 1989, p.2.

[906] Ohlsson, 1991, pp.132-155.

oil exports from the Persian Gulf. In contrast to oil, the power generated from this source can be more cleanly extracted and distributed, secure, and inexhaustible.[907] However, experts have described the contrast between the possibilities of the benefits from watercourse uses and the existing poverty of the Himalayan region, in a global context saying "nowhere is the gap between what is possible and what exists more poignant."[908] Against this background, emphasis is on the mutual benefit in the existing treaties related to the Himalayan basin. Whether these treaties have provided the mutual benefits that they aimed for is a different consideration. The potential benefits that could be achieved are valuable both from the point of view of use and protection. A few examples of mutual benefits, which the existing arrangements strive for, can be described as follows.

One example, between Bhutan and India, is useful to look at, especially the mutual benefits under the 1996 India-Bhutan Agreement concerning the Wangchu River. This agreement provides for India to undertake the construction of the 1020MW hydroelectricity project on the Wangchu River.[909] Other provisions of this agreement include the sale of surplus power worth $400 million (US) to India, which will finance 60% of the cost, and the balance through loans to Bhutan from India. Two years after its completion, India will hand over the dam project to Bhutan.[910]

Another example concerns Bangladesh and India. The 1996 Ganges Treaty provides for the principle of equity and fairness at the Farakka Barrage, where the real issue to deal with is the problem of scarcity of water during the dry season and flooding over during the monsoon. This will be examined further (below) with relation to water use allocation and sharing.

Between Nepal and India, the 1996 Mahakali Treaty provides for the equal share principle, both during the times of shortage as well as surplus. Nepal's river systems contribute approximately 53% of the water flow in the dry season and 35% of the total annual flow of the Ganges, comprising 17% of the total waters of the Ganges basin.[911]

The Nepal-India Joint Commission is required under Article 9 of the 1996 Mahakali Treaty to function on the basis of the equality and no-harm principles. Not to prejudice the interests of each other appears to be the main basis of the principles which underpin the watercourse treaty regimes between Nepal and India.

In a basin wide context, the overall legal arrangement of Himalayan basin, as found in the bilateral treaties, can be summarized as follows. Regarding non-navigational uses, the existing provisions for the Parties'

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[907] Pandey, (Pandey, B, *Kathmandu Post*, February 5, 1997) 1997.
[908] Boyce, 1987, p.v.
[909] *International Waterpower and Dam Construction*, April, 1996.
[910] Ibid.
[911] Thapa and Pradhan, 1995, pp.187-198.

mutual benefit include: first, *pro rata* provision; second, natural flow maintenance; and third, water use allocation and sharing.

Regarding the mutual benefits spelled out in the agreements concerning all Nepal-India joint projects, it should be noted that India has always maintained that Nepal was given a reasonable consideration in light of the benefits Nepal received from India, primarily by India's assumption of costs of all of these projects. Nepal holds the view that these projects provided Nepal with negligible benefits. With respect to *pro rata* provisions, during the period of water shortages, Article 10 of the 1996 Mahakali Treaty provides that "whenever the supply of water available for irrigation falls short of the requirements of the total area under the project for which irrigation has to be provided, the shortage shall be shared on pro rata basis between the Government of India and His Majesty's Government [Nepal]."[912]

As to the natural flow maintenance, riparian rights of natural flow are generally recognized and emphasis is given to the right to water use, not protection. Article 3 of the 1996 Mahakali Treaty, recognizes an equal right on the basis of equal partnership. The Sarada Barrage construction on the Mahakali River at Banbasa in India, which includes a power station at Khatima, Utter Pradesh (northern India), consists of a main canal on the right bank (the Nepal side) of the Mahakali River, with a capacity of 396 m^3/s (14000 cusecs) providing water for irrigation in India. Another canal on the left bank (the India side) of the river, with a capacity of 28.3 m^3/s (1000 cusecs) provides water for irrigation in Nepal.

It is apparent that the development of projects in the Himalayan basin suffers from shortsighted environmental consideration. Because of its inappropriate location, i.e. the Chatra irrigation project of the Kosi River, in order to minimize the silt in water flow, the canal is closed approximately 22 days during the monsoon and over 80 days in heavy rain, which results in scarcity during the dry season and flooding during the monsoon on both sides of the border. A similar situation exists between Bangladesh and India at Farakka. This is a clear indication that adequate environmental impact assessments of the existing projects in the Himalayan region were not performed.

Under Article 7 of the 1996 Mahakali Treaty, each Party undertakes the obligation not to use, obstruct or divert the water of Mahakali River adversely or otherwise affect its natural flow and level, except by an agreement between the Parties. This does not preclude the use of Mahakali River waters by local communities living along both sides of the Mahakali River, not exceeding 5% of the average annual flow. The 1996 Mahakali Treaty integrates the Sarada Barrage, Tanakpur Barrage and Pancheshwar development projects, including mutual benefits and fixed water flow as follows.[913] According to the 1996 Mahakali Treaty, Nepal's right regarding

[912] See, 36 *ILM*, 1997, p.533.
[913] Ibid.

the Sarada Barrage is fixed with 28.35 m^3/s(1000 cusecs) of water in the wet season (from May15th to October15th) and 4.25 m^3/s(150 cusecs) in the dry season (from October 16th to May 14th). India is required to maintain a flow of not less than 10 m^3/s(350 cusecs) downstream of the Sarada Barrage on the Mahakali River in order to maintain and preserve the eco-system. In case the Sarada Barrage becomes non-functional, Nepal is to receive an amount of water from the Tanakpur Barrage equivalent to the amount lost due to the non-functioning of the Sarada Barrage. India is also obliged to maintain the river flow according to the same provisions.[914]

The 1991 Agreed Minutes, which appears to be the preparatory work for the 1996 Mahakali Treaty, provided for the construction of a left wall on the barrage in Nepali territory, consisting of 2.9 hectacres of land and including the installation of equipment regulating the flow at the Tanakpur Barrage. With a capacity of 1,000 cusecs, India is required to construct a canal to provide 150 cusecs of water and 10MW of electricity to Nepal. At the completion of construction of the Pancheshwar reservoir, India would provide additional waters to Nepal as compensation for the 2.9 hectacres of Nepal's land used by the project, with the capacity of producing a 120MW from its power station. Under Article 2 (a) of the 1996 Mahakali Treaty, the water supply from Nepal to India is fixed at 28.35m^3/s (100 cusecs) of water in the wet season (from May15th to October 15th) and 8.50m3/s (300 cusecs) in the dry season (from October 16th to May 14th) from the date of the entry into force of the treaty.[915] Nepal is entitled to an annual supply of 70 million KW hours. India agreed to construct a 132KV- transmission line through the India-Nepal border from the Tanakpur Power Station. Under Article 2(b) of the 1996 Mahakali Treaty, Nepal is entitled to receive a supply of 70 millions KW hours of energy on a continuous basis annually from the Tanakpur Project. India is to construct the Tanakpur Barrage on Nepali territory and a 132KV transmission line up to the Nepal-India border from the Tanakpur Power Station which has, at present, an installed capacity of 120,000KW generating 448.4 million KW hours of energy annually, during a water flow of at least 90%. A portion of Nepal's share of energy from the (proposed) Pancheshawar project is to be sold to India. The quantity as well as the price is subject to ongoing negotiation. One basis for future agreements over electricity prices is the 1997 Electric Power Trade Agreement between Nepal and India.[916] The cost of the project is to be borne by both of the Parties of the 1996 Mahakali Treaty, according to the proportion of benefit accruing to them. India is to supply 10m^3/s(350 cusecs) of waters for irrigation of areas in Nepali territory, i.e. the Doddhara Chandani area. Within the framework of the 1996 Mahakali

[914] Ibid, Article 1 of the 1996 Mahakali Treaty.
[915] Ibid, Article 2.
[916] This agreement allows private parties, in Nepal or India to conduct electric power trade. To date, however, the agreement is not ratified by the Nepal's parliament as required under article 126 of the constitution, see, *Kathmandu Post*, May 23, 2000.

Treaty, a Development Project Report is to be designed and implemented on the principles provided by the treaty, which are:

> 1) maximum total benefit for the both Parties in the forms of power, irrigation and flood control;
> 2) the equal sharing of energy;
> 3) the cost of the project borne in proportion to the benefit accruing;
> 4) a portion of Nepal's share of energy shall be sold to India.
> 5) The price of the energy is a matter of mutual agreement between the concerned Parties.[917]

One of the shortcomings of the 1996 Mahakali Treaty is that the quantity of the existing consumptive use is not mentioned. If the existing consumptive use of the Parties is not specified to be equal, the future adjustment measurement of the equal share principle, adopted by the Treaty will be complicated to adjust. Under the 1996 Mahakali Treaty, the Pancheshwar project is a multi-purpose project aimed at the construction of a 315 meter high dam at Pancheshwar with a capacity for generating 3,480MW of electricity. Progress of the implementation of the 1996 Mahakali Treaty has thus far been limited. In June 1999, India and Nepal agreed to establish a joint project office in Kathmandu to handle the projects agreed to under the 1996 Mahakali Treaty.[918] The situation has not yet moved forward because of such project details.

With respect to water use allocation and sharing, the existing provisions of the 1996 Ganges Treaty between Bangladesh and India, is a case in point. As to equitable use allocation of water, including allocation of surpluses during shortages, Article II of the 1996 Ganges Treaty provides: [919]

> (i) The sharing between India and Bangladesh of the Ganga/Ganges water at Farakka by ten day periods from the 1st January to the 31st May every year will be with reference to the formula at Annexure I and an indicative schedule giving the implication of sharing arrangement under Annexure I is at Annexe II.
> (ii) The indicative schedule at Annex II, as referred to in sub-para. (i) above, is based on 40 years (1949-1988) 10-day period average availability of water at Farakka. Every effort would be made by the upper riparian to protect flows or water at Farakka as in the 40-years average availability as mentioned above.
> (iii) In the event flow at Farakka falls below 50,000 cusecs in any 10-day period, the two governments will enter into immediate consultations to make adjustments on an emergency basis, in accordance with the principles of equity, fair play and no harm to either party.

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[917] Article 3 of the 1996 Mahakali Treaty.
[918] Rose, (Rose, L, "Nepal and Bhutan", *Asian Survey*, 1,) 2000, p.191.
[919] Annexure II "Schedule" to the 1996 Ganges Treaty.

According to Annexure I of the 1996 Ganges Treaty, the amount of available water at Farakka is 70,000 cusecs (or less) up to a maximum of 75,000 cusecs (or more), subject to sharing by India and Bangladesh by 50 % each of 40 cusecs, fixing the balance of flow for India and for Bangladesh at 35,000 cusecs each. While not explicitly written into the treaty, it should be noted that the treaty implies that the management of water sharing at Farakka encompasses navigational use, non-navigational use and environmental protection. The present schedule states that where the actual availability corresponds to average flows, the implications of the formula in Annexure I for the sharing by each side are to be provided according to the above schedule of Annexure II:

Period of total flow 1949-88 (Cusecs)	Average share (Cusecs)	India's share (Cusecs)	Bangladesh's share (Cusecs)
Jan			
1-10	107,516	40,000	67,516
11-20	97,637	40,000	57,673
21-31	90,154	40,000	50,154
Feb			
1-10	86,323	40,000	46,323
11-20	82,839	40,000	42,839
21-30	79,106	40,000	39106
March			
1-10	74,419	39,419	35,000
11-20	68,931	33,931	35,000*
21-31	64,688	35,000*	29,688
April			
1-10	63,180	28,180	35,000*
11-20	62,633	35,000*	27,633
21-30	60,992	25,992	35,000*
May			
1-10	67,251	35,000*	32,351
11-20	73,590	38,590	35,000
21-31	81,83	440,000	41,854

* Three ten-day periods during which 35,000 cusecs shall be provided.

According to the formula (second line of Annexure I), Bangladesh's share will be 35,000 cusecs, and the remaining balance goes to India. The previous schedule of water sharing, under Article II (i) of the 1977 Ganges Agreement, was determined at Farakka based on flows from 1st January to 31st May (assuming 75 % water availability) from the observed data for 25 years period (1948-1973).[920] The figures in the schedule of the 1977 Ganges

[920] Agreement on Sharing of the Ganges' Waters 1977, Government of Bangladesh Ministry of Foreign Affairs External Publicity Division Dhaka, No-14 (1) 76-EP.IV.

Agreement were based on the average total flow which are based on records over a period of 25 years, while the 1996 Treaty is based on records over a period of 40 years, assuming that there is a higher level of water available in the Ganges at Farakka during the dry season.

Bangladesh's share of water during the dry season is greater in the 1996 Ganges Treaty than it is in the 1977 Ganges Agreement. However, it should be recalled that when the 1977 Ganges Agreement was concluded, acrimony between Bangladesh and India was high. For example, in 1983 Bangladesh claimed it received only 70% of its scheduled waters, while India disputed the assertion. In 1985, the Bangladesh Foreign Ministry declared that India's unilateral diversion of Ganges was *contrary* to the recognized practices of international law. The Indian response was that the release of 11,000 to 16,000 ft.^{3}/sec of water in the lean season is insignificant compared to needs of 40,000 ft.^{3}/sec to flush the heavily silted Hooghly. Eventually, Bangladesh and India agreed that the dry season flow of the Ganges needed to be augmented, resulting in the 1996 Ganges Treaty.[921]

One year after the conclusion of the 1996 Ganges Treaty, the parties realized that the actual availability of water during the dry season was less than assumed by the Treaty. The end result was that the Parties got less than the water originally agreed upon during the dry season. Under Article II of the 1996 Ganges Treaty, both parties entered into immediate consultation to deal with the reality. The Joint River Commission meeting held in Dhaka in July 1997 issued a Joint Communiqué stating that the two sides appreciated the need to remove the bottlenecks of implementation of the Ganges Treaty with further negotiation. It was decided to undertake joint scientific studies in accordance with the terms of reference, which have been jointly finalized by the technical teams of the two countries.[922]

According to the 1996 Ganges Treaty, if the Ganges flow at Farakka is 70,000 ft^3/s or less, India and Bangladesh are to receive 50 % each, with a flow of between 70,000 and 75,000 cusecs, Bangladesh is to receive 35,000 cusecs and India the remaining. With a flow of more than 75,000 cusecs or more India receive 40,000 cusecs and Bangladesh receives the amounts stated in Article II (i) and Annexure I.[923] The 1996 Ganges Treaty covers 30 years and every five years, the sharing arrangement is to be reviewed. If no agreement can be reached on any adjustments, India is obliged to release water under Article II of the 1996 Ganges Treaty.

11.3.2.1. The Ganges Barrage

The Ganges Barrage is often referred to as a retaliatory measure by Bangladesh against the Farakka Barrage of India. The Ganges Barrage had been a source of contention between India and East Pakistan since the

[921] Crow, Lindquist, and Wilson, 1995, pp.159-218.
[922] *Joint Communiqué of the 32nd Meeting of the India-Bangladesh Joint River Commission*, Dhaka, July 18-20, 1997.
[923] Article III and Annex I of Article II.

1960's, and continued after East Pakistan became Bangladesh in the early 1970's. It was proposed that the Ganges Barrage would be built at Pangsha, about 90 miles west of Dhaka, which is completely within the territory of Bangladesh.[924]According to the Ganges Barrage plan, proposed by Bangladesh, the augmentation of flow of water is aimed to promote the uses as well as the environmental protection of the area.[925] The building of the Ganges Barrage was initiated in 1963, in order to store the wet season flow of the Ganges for use during the dry season. From the outset, India opposed the construction of the Ganges Barrage and claimed that large territory of India would be submerged as a result of water storage. The Farakka Barrage, which is situated within the Indian territory, also resulted in transboundary effects upon Bangladesh. The proposed construction of the Ganges Barrage remained a dispute between the two countries up until the late 1990's. India relented, and agreed to the long disputed construction of the Ganges Barrage in 1997, which will store the monsoon flow of the Ganges for use during the dry season. According to the feasibility study for the Ganges Barrage, the key aims are that:

1) The barrage would allow Bangladesh to make optimum use of the water that would be available under the Ganges Water Treaty.
2) The Ganges is the main potential source of surface water in the Southwest and South Central regions. With the construction of the Ganges barrage, the irrigated area will cover most of the South West and the South Central and North Western regions.
3) Water supplies through the Gorai River will reduce saline intrusion around Khulna, which will help solve the existing socio-economic and environmental impact in the areas.
4) Augmentation of the flows in all distributaries and other rivers in the South-West region so that natural environment can be restored with regards to fisheries, navigation, ground water forestry and human health through a supply of upland flow and reduction in salinity.
5) The Barrage is expected to irrigate an area of about 1.35 million hectares of land, and to protect another 1.44 million hectacres from floods.[926]

The Ganges Barrage is also expected to assist in reducing the salinity caused by the intrusion into the waters of the Bay of Bengal. In addition, the barrage will provide: (i) a dry season flow of the Ganges; (ii) control of the frequent floods that create havoc throughout the Ganges basin in

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[924] *Directorate of Planning, Government of the Peoples Republic of Bangladesh, Technical Assistance Project Program (TAPP) for feasibility Study and Detailed Engineering Design of the Ganges Barrage Project,* May 1997, Recast, June 1997, pp.6-7.
[925] *Joint Communiqué of the 32nd Meeting of the India-Bangladesh Joint River Commission*, Dhaka, July 18-20, 1997.
[926] *TAPP*, Recast, 1997, pp.6-7.

Bangladesh; and (iii) restoration of the environment by providing solutions of some problems that resulted from the diversion of the Ganges water through the Farakka Barrage.[927] These include problems of salinity and low groundwater tables, which has negative effects on forestry and fishery production.

11.3.2.2. Plans for further uses

As regards the further non-navigational uses of the Himalayan rivers, in the last four decades, there have been discussions and feasibility studies on Karnali River development, but no agreement has so far been reached concerning this. In 1983, India and Nepal agreed to execute the Karnali, Pancheshwar and West Rapti hydroelectricity projects, which include issues such as flood control and irrigation. However, there are serious differences between the two countries. India has expressed its preference for a lower dam at Chisapani that might yield around 7000MW of electricity, which could be constructed at a reduced cost for India.

From Nepal's point of view, upstream projects on the Karnali would be more beneficial, and would also yield more energy. India seems to be uneasy about investing huge amounts of money in projects within Nepal's territory. Differences between the two countries also include the question of security for these projects. A lower Karnali dam may seem to pose less of a seismic problem and to cause less displacement of people, but it may be less beneficial for Nepal. However, the 1991 Agreed Minutes as to the Karnali (Chisapani) Multipurpose Project notes that project parameters based on further study (as agreed in the Karnali Committee Meeting) shall be completed expeditiously. Proposals in this regard to organizations and other matters relating to the project are to be made available by India.[928] Concerning the non-navigational uses of the Himalayan rivers, India has made public its plans to construct an inter-basin water transfer system, which will include the Ganges and Brahmaputra rivers.

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[927] Ibid.

[928] The Agreed Minutes were published in Nepal Gazette, January 1992. In 1998, India completed construction of the Laxmanpur barrage on the Rapti River, which lies in between the Karnali, Gandak and Narayani Rivers basins of the Mahabharat drainage basin. This Laxmanpur barrage is constructed within Indian territory. The consequences of the barrage, as the Foreign Affairs Committee of Nepal's Parliament reports, is that in Nepal, 33 villages with a combined population of approximately 15,000 are affected during the monsoon season, the construction of the edifice being within 300 meters of the border. About 600 hectares of land in Nepal around the barrage has been submerged under water. At the Nepal-India Secretary Level meeting on water resources, the two sides agreed to construct an embankment in Nepal with Indian assistance, according to press release of Nepal's Ministry of Water Resources. However, differences in opinion remain between the two countries over a wide range of water related issues along the Indo-Nepal border including the Laxmanpur barrage. The Government of Nepal signed a contract with a private Chinese firm in 1999 to construct the 14MW Upper Modi Hydropower Project in Kaski District, in mid-western Nepal, the upper part of the Himalayan basin.

According to the Indian plan, the Ganges-Cauvery (Cauvery is a river flowing between Tamil Nadu and Kerala, two southern Indian States) link from North to South India, and it aims to pump water from the Ganges at Patna for 150 days during the high flow period. The water, according to the plan, will be lifted through stage pumping along the river zone until it is put into the Bargi reservoir on the Narmada River. From Bargi, the link will pass via Wainganga and Pranhita into the Inchampalli reservoir on the Godavari River, in Andra Pradesh. The water will then be pumped further to the Srisailam reservoir on the Krishna River and passed on to Pennar River, where a link will connect it to the Cauvery upstream. The proposal involves two pumping lifts, the first along the river zone up to the Bargi and the second from Inchampalli to Srisailam. The Ganga-Cauvery link envisages an enormous transfer of water from Ganga River to the South India. This may be the world's most ambitious plan linking rivers, creating technical as well as legal problems. [929]

Another Indian proposal would entail the construction of two canals, one along the foothills of the Himalayas and the other around central and peninsular India, and the two to be connected through pipelines. This canal, which would be known as the Himalayan Canal, would be about 2400 km long, aligned along the southern slopes of the Himalayas from the Ravi to the Brahmaputra rivers and would extend further, towards the south, another 1770km. The canal would receive water from the Himalayan rivers and store it in 90 lakes. The central/peninsular canal, or Garland Canal, would be about 9332 km long, to be integrated with 2000 lakes. The Himalayan and the Garland canals would be interconnected at two points, one near New Delhi and the other at Patna.[930] The proposed Ganges-Cauvery link has not been pursued, due in large part to the energy constraints. The Garland Canal proposal is considered technically and economically unfeasible, and remains on the drawing board. However, the watercourses that would be part of the proposed Himalayan Canal, as well as some peninsular rivers, are being included in the national plan of India:

> Himalayan Rivers development envisages construction of storage reservoirs on the main Ganges and the Brahmaputra and their principal tributaries along with interlining canals to transfer surplus flows from eastern tributaries of the Ganga to the west.[931]

The Indian plan, which aims to link the Brahmaputra and Ganges rivers, impacts directly upon Bangladesh. It proposes "building a link canal across Bangladesh connecting the Brahmaputra with the Ganges at a point above

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[929] *Fresh Water Resources: Protection, Development, Management and Use*, Agen*da 21: Chapter 18. Text and Current Status in India*, Indian National Committee on Irrigation and Drainage, the Ministry of Water Resource, Government of India, 1993, pp.68-70.
[930] Ibid.
[931] Ibid.

the Farakka barrage to make up for the shortage caused by the Farakka diversion. This proposed link would be approximately 165km long. One must note here that the linking of the Ganges and the Brahmaputra will have not only technical implications but also legal ones, including the rights and duties of the respective States, which are recognized by the 1997 UN Convention. The justification for India's plan is that "since Brahmaputra has a much larger flow than the Ganges, leaving the delta area of Bangladesh along the river's lower reaches waterlogged early in the monsoon, and since much of the Brahmaputra water is wasted during the Ganges lean period by flowing down into the sea, some of this flow could be diverted to the Ganges above the Farakka through the proposed link canal."[932]

Bangladesh opposed the Indian plan, arguing that the best means of augmenting the Ganges dry season flow is an inherent concern of the Ganges basin itself.[933] The monsoon flow in the Ganges is more than sufficient to meet the needs of the two countries since much of it runs to the sea. Bangladesh maintained that the monsoon flow of the Ganges could be stored by constructing reservoirs on the Nepal-India border. Bangladesh's rejection is based on the grounds that it is technically impracticable, economically expensive and ecologically unsound. Bangladesh maintains that if the Brahmaputra River is diverted to the Ganges, the Brahmaputra will dry out. Above all, Bangladesh maintains that politically, the presence of such a link canal would give India the upper hand in any negotiation.[934] Bangladesh's counterproposal identified 83 potential reservoir sites in the Ganges basin. The total estimate of such a reservoir suggests that a maximum 310,000 cusecs of additional flow would be made available during the dry season.

The Nepal-Bangladesh canal, as proposed in the Bangladesh plan, includes a connection between the Gandak and Kosi rivers in Nepal, the Mahananda in West Bengal and the Karatatoya in Bangladesh, which would increase the dry season flow and provide Nepal with navigational links to the sea.[935] Bangladesh's proposal also includes the construction of 31 reservoirs in Nepal, which may submerge vast areas of land under water. Nepal's position on this proposal is still an open question. According to India, the canal in Bangladesh's proposal has nothing to do with an augmentation of the flow of the Ganges.[936] In the context of these proposals, the India-Bangladesh Joint Committee of Experts held a meeting in 1986 with a team of Nepal's Foreign Ministry officials to discuss a trilateral arrangement of the watercourses in the region. However, no conclusive agreements were reached.

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[932] Ibid.
[933] Crow, Lindquist and Wilson, 1995, pp.185-217.
[934] Ibid.
[935] Bangladesh White Paper on the Ganges Water Dispute, Dhaka, September 1976, p.7.
[936] *Press Trust of India*, Delhi, 18-7-1978.

From the late 1980's onward, India has remained committed to bilateralism rather than a trilateral approach to regional water resource development. Bangladesh has made it clear that the Indian plan to construct a link canal to connect the Brahmaputra River with the Ganges is unacceptable. According to India, the augmentation of the Ganges flow during the dry season seems reasonable, from a water use perspective, by diverting water to the Ganges River from the Brahmaputra River. Bangladesh naturally rejected this on the basis of the environmental, social, political and economic consequences. Bangladesh appears to be concerned that the link canal may further exacerbate the flood situation in the country during the monsoon season. Bangladesh proposed building storage reservoirs at the upper reaches of the Ganges in both India and Nepal, to store water during the monsoon season. Later, these waters would be released during the dry season, which would be unacceptable to India. Bangladesh's proposal aimed at using the Ganges itself to solve the problems of the Ganges. These conflicting perceptions of the facts are rooted in the Parties' respective value judgments, which ultimately constrain the harmonized protection and use of the Himalayan basin.

Concluding the existing legal arrangements of the non-navigational uses of the Ganges watercourse, it should be noted that water allocation during times of shortages is fixed rather than flexible. From an integrated perspective, augmentation and regulation of the Ganges watercourse needs to be seen in light of the flooding during the monsoon, scarcity during the dry season, and taking into account the overall environmental degradation of the Himalayan drainage basin. So far, the legal arrangement of the Ganges watercourse remains one that is built on a bilateral and piecemeal basis, and the basin States appear to be guided by the short-term benefits at the cost of long-term sustainable use. In most cases, the short-term piecemeal benefit is considered as mutual benefit, concerning water resource development projects. The overall environmental and socio-economic issues are not taken into consideration. Allocation of the surplus water during the dry season is fixed (e.g. the 1996 Ganges Treaty, at the Farakka Barrage), but maintenance or improvement of the water quality is not provided for in any agreement. Minimum flow of watercourse is regulated (e.g. the 1996 Mahakali Treaty), but the basin-wide environmental measures are not taken into consideration by any existing agreements.

In many of the projects discussed above, it is apparent that the mutual benefit to the parties is defined in terms of irrigation and hydroelectricity. The public criticism reflects the needs and concerns of the people in the region, which demands that the respective States should make efforts to generate consensus about the treaties that affects respective parties, even up to point of renunciation of existing treaties. The 1996 Mahakali and the 1996 Ganges treaties have been described, by both sides, as sensible

deals.[937] However, the subsequent problems arising out of the treaties, and the remaining unresolved problems, are evidence of the lack of a sustainable approach.

As Members of the South Asian Association for Regional Cooperation (SAARC), the Ganges basin States, Nepal, India and Bangladesh, have recognized the principle of sustainable development, which is the important policy principle provided for by the 1992 UN Conference on Environment and Development. Still, the 1996 Mahakali and the 1996 Ganges treaties have come up short in terms of implementation of the sustainable development and integrated management of international watercourses. Even today, the Farakka Barrage and Ganges Barrage remain controversial between India and Bangladesh, just as are the Kosi, Gandak and Laxmanpur barrages between Nepal and India. The controversy surrounding the development projects on the Ganges basin is clearly based on environmental issues, the existing agreements lacking provisions and implementation mechanism for sustainable development. An environmental concern appeared in the 1990's, which eventually forced the World Bank to withdraw its support from the Arun III Project situated in the Himalayan region. "Despite efforts to make the Arun III a model project in order to solve Nepal's pressing energy needs with minimal negative environmental consequences, the project turned out to be as much of a problem as the solution."[938]

In the area of water resource management, the public criticisms in Nepal, India and Bangladesh appears to be focused on the development project itself, particularly the regional adverse effects of the water projects. At the same time, these water projects reflect the national identity/ego of the basin States, and are an integral aspect of their national and foreign policy. With respect to the above-mentioned projects, it is noteworthy that adverse impact may be the clear basis for the repudiation of an existing treaty. However, the Ganges basin States must be aware of the threat to the stability of international relations when repudiating a treaty. In some cases, even where States wish to repudiate agreements, they may not be able to do so because of the political reality of the Himalayan basin States. For the same reasons, some of the Himalayan basin States have agreed for piecemeal legal arrangement of a few rivers, but disagreement between the Himalayan basin States remains with respect to overall sharing and protection of the water resources of the region.

International watercourse treaties imposed by a powerful State upon weaker States, and the restriction of territorial sovereignty under any agreement may qualify such an agreement as an unequal treaty. However, a barrage situated in the territory of a riparian State owned by another riparian State of an international river is in practice. The Kosi Barrage is an example, where Nepal retains its sovereignty over its land area of the

[937] Salman and Uprety, 1999, pp.205-343.
[938] *Development Today*, IV, No.14, 1994, p.9.

barrage, and India is the owner of the barrage situated in Nepal. The presence of one country's military force in another country or establishment of a military base in a foreign State is still in current practice (e.g. the United States' military base in Japan and South Korea), which raises questions of equal and unequal treaties. However, from the legal point of view, the continuous consent by the host country is a necessity in any case.

Regarding the various water projects in the Ganges basin, there is clear mutual consent of the Parties to the agreements. At the same time, the water projects mentioned above are well known causes of flooding during monsoon and a lack of water supply during dry season.[939] These are the problems leading to public demands for abrogation or amendment of the existing accords. With respect to amendment or adjustment of existing treaties, it should be noted that the renewal of the 1977 Ganges Treaty was a long, difficult process,[940] only resolved through renegotiation and the eventual conclusion of the 1996 Ganges Treaty. Against this kind of backdrop, it should be pointed out that the unilateral repudiation of any treaty might be fatal to relations between the riparian States of the Ganges River, not only in regard to the water-related issues but also to their overall relationship. Nonetheless, the riparian State cannot refrain from taking actions to combat problems that are caused by the water project, developed within the existing treaties.

The watercourse States are not free to pollute watercourses by releasing toxic substances into waters or significantly harm the environment of the watercourses. If implementation of treaty result harm to human health and/or significantly damage environment, i.e. submerging villages into water and killing people of the area, it is prohibited by common sense. Given the recognition of the principle of equitable utilization and no-harm rule by the international community of States in the 1990's, it may be argued that environmentally (significant) harmful treaties in the Himalayan basin are clearly voidable, if not void. Therefore, the existing treaties concerning the Ganges basin clearly need to adjust with the modern principles of use allocation, integrated management and protection of international watercourses.

11.3.3. Environmental Protection

The Himalayan region is known as one of the most unstable physical environments of the world. In the face of already competing vested national interests, the Himalayan basin States are additionally facing environmental strain from pressures of economic development and population growth. The main problems may be summarized: 1) hydro-dams interrupting the river flow; 2) industrial development discharging

[939] Nepal's experience of the Kosi Barrage and Gandak Barrage projects, and Bangladesh's experience of the Farakka Barrage are the factors for criticism, see Subedi, 1999, p.954.
[940] Islam, 1987, pp.918-934.

pollution into waters; 3) agricultural activities increasing soil salinity; and 4) declining fisheries as a result of the eroding river banks and deltas. The most serious of all is the changing geography of the South Asian periphery, which is described thus:

> With the Himalayan ranges still rising by up to 6 cm a year, rocks slides, the larger ones often precipitated by earthquakes, contribute to a naturally high rate of erosion and denudation. In the wholly contrasted environment of the Maldivian atolls population growth is also pressing on the limited land area of the tiny islands, which barely break the surface of the sea and which some authorities suggests are threatened by even a slight rise in the sea level.[941]

Geographical features are one of the criteria that needs to be taken into consideration for establishing the equitable utilization and sustainable development of international watercourses, as provided for in Articles 5, 6 and 7 of the 1997 UN Convention. Thus, the changing geography of the Himalayan ranges needs to be taken into consideration whether the issue is dam building or use allocation of the Himalayan rivers. Since this part of the world is an earthquake-prone area, the safety of proposed dams or hydraulic structures in the area, should be designed to withstand earthquakes. Existing dams and structures should be methodically inspected and/or retrofitted. Needless to say, in case of earthquake, the dams might burst, resulting in flooding and severe damage to life and property.

Apart from the above-mentioned problems, the Himalayan basin is well known for droughts and flooding. According to the study of 21st International Geographical Congress, over a period of 77 years, on an average there have been nearly 38 years when the entire sub-continent was free from droughts, and approximately 23 years entirely free from floods.[942] It is obvious that there is a correlation between good rainfall and growth in crop production,[943] which affects the livelihood of the majority of the region's population engaged in agriculture.[944]

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[941] Bradnock, 1992,p.49. Bradnock notes that the Bangladesh delta rivers carry over 1 million tons of silt per day, and some argue that a rise in sea level will be accompanied by a corresponding increase in the rates of deposition, building up the delta accordingly. See, ibid, p.64.

[942] *Mountains and Rivers of India,* 1968, p.245.

[943] Ibid, pp.245-246.

[944] This means that the hydrology of the region is to be maintained by balancing between not too much and not too little rain.

Together with drought and flood,[945] soil erosion is threatening the environment of the Himalayan region. The natural rates of soil erosion in the foothill regions of the Himalayas are very high, which is responsible for soil degradation as well as for low crop productivity. The scale and impact of the soil erosion in the Himalayan basin is so high that a new island "Puspa" has been formed in the Bay of Bengal.[946] When soil loses productivity, the farmer increases the use of chemical fertilizers in order to boost crop production, which in its turn also degrades the soil. The primary ingredients in these chemical fertilizers used in the Himalayan basin States include nitrogen, phosphorus and potassium.[947] These chemical fertilizers reach the waters in the form of leaching and/or runoff, which could be controlled through regulation by the respective States.

Irrigation is necessary for grain production in order to meet the basic human needs of the increasing population of the region, but it is also a degrading factor for the quality of soil. In India alone, for example, there are 1,040 large or medium domestic irrigation projects, mostly in the Ganges region. Large-scale irrigation projects began over a century ago, and in the last 50 years alone there have been 500 such projects.[948] Irrigation is a necessity of the Himalayan region, given that the majority of the population is farming. However, the environmental consequences of irrigation (e.g. the decline of volume, speed and silt load of the river's flow) need to be taken into consideration. As there is no harmonized approach taken by the respective States, an overhaul of the land use practices, watershed management and soil conservation of the Himalayan basin is an urgent task for the long-term sustainable use of the Himalayan basin.

Crop production in the Himalayan region depends upon the monsoon season rainfall, which is linked with the (rain)forest, that in turn relates to air and water pollution, soil management and forest conservation. Even though firewood is the main source of energy, very little is available in the official statistics of the Himalayan basin Sates concerning preservation of forests, and even the available statistics reveal that the issue has as yet not been taken seriously on a regional level.[949] There are even conflicting conclusions stemming from research into the link between deforestation and flooding in the Ganges watercourse. For example, Bangladesh claims that massive deforestation upstream is contributing to the severity of floods

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[945] In 1988, the Ganges River flooded to its highest level in 100 years, a flood that lasted for more than two months. The floodwaters submerged three quarters of Bangladesh, including at least 860,000 hectares of agricultural lands, and more than half of Dhaka, affecting more than 40 million people. In the year 2000 and 2004, the people were affected by the severe flooding in Nepal, West Bengal & Bihar (India) and Bangladesh. In fact, these 3 countries experience such flooding almost every year.

[946] This has become a source of conflict between India and Bangladesh, see Zering and Kim, 1985, pp.336-339.

[947] Bradnock, 1992, p.30.

[948] Ibid.

[949] Ibid.

in the region. However, a study done by the United States Agency for International Development found no grounds for considering deforestation in the Himalayas as a significant cause of flooding in Bangladesh.[950] There is no doubt that the Himalayan basin is an eco-province constituting a hydrologic unit, and within the drainage basin there is a self-regulating symbiotic relationship between the environmental factors. In this context, mention should also be made of the air pollution as it relates to the water, soil and forests of the region. Not much has yet done about transboundary air pollution control and air quality improvement in the region.

Another particularly important issue to be addressed is the monsoon, which comes in the form of wet air and clouds, also known as atmospheric waters. Water quality improvement of the Himalayan basin is urgent, given the statistics that approximately 80% of all diseases and over one third of the deaths in the regions' countries are caused by consumption of contaminated water.[951] Even though the glaciers of the Himalayas provide enough capacity for self-purification, the Himalayan rivers have served as drainage for rural and urban waste disposal since the beginning of human habitation of the region. The Ganges is one of the most polluted rivers in the world,[952] which is absorbing over 1,340 million liters of sewage a day including toxic wastes.[953] Despite India's spending of 60 million Rupees (Indian) on the 1985 Ganga Cleanup Action Plan, it is reported that 80% of all Gangetic cities' sewage is dumped into the Ganges River untreated.[954] The Ganges is polluted in part from the 40,000 people cremated yearly at Banares, and also primarily by the distilleries, refineries, chemical factories and fertilizer complexes along the banks. In such conditions, "faithful Hindus go daily to bath in the River Ganges and drink its water, thus making themselves susceptible to various diseases, the two most common of which are gastrointestinal disorders and infectious hepatitis."[955]

Bearing in mind the above-mentioned environmental situation, the existing agreements of the Ganges River will be analyzed, in the following section, from the point of view of the protection of watercourses and its surrounding eco-system.

11.3.3.1. Protection of Eco-system

It should be recalled that the existing treaties concerning the Himalayan basin, including the 1990's treaties on the Ganges and the Mahakali rivers, are limited to the water use allocation, and provide no provision for eco-

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950 Rogers, Lydon and Seckler, 1989, p.5.
951 Gleick, 1993, pp.141-149.
952 *GPA*, 1988, pp.62-63.
953 See, *India Today*, January 15, 1997, pp.102 and 104.
954 Ibid, p.104.
955 In 1985, for example, campaigns of 250 million regarding the anti-pollution of the Ganga River befouled by chemical wastes, human excrement, cremated bodies, and cattle carcasses. See, *EWPHP*, 1986, p.7677.

system management. The issue at stake with Farakka is the lack of water during the dry season, which is affecting both India and Bangladesh, and the overflowing during the monsoon season, which also affects both India and Bangladesh.[956] But the existing arrangement does not provide a legal framework for the solution to this problem.

A few bilateral measures provided for the protection of the eco-system, which are as follows. Paragraph 2 of Article 1 of the 1996 Mahakali Treaty includes the term river eco-system, according to which India shall maintain a flow of not less than $10m^3/s$ (350 cusecs) downstream of the Sarada Barrage in the Mahakali River to maintain and preserve the *river eco-system.*[957] Though titled as integrated development, the focus of the 1996 Mahakali Treaty is on developmental rather than protection and improvement of the ecosystem. The Ganges watercourse system supports over 200 species of fresh water fish and 18 species of prawn.[958] The apparent problem is that "previously, fish could be seen through the transparent water of the Ganges River, but not any more."[959] As a result of the water quality degradation of the Himalayan rivers, the fishing, one of the main sources of food, is adversely affected, leading to malnutrition problems as well as the negative health effects from consumption of toxic fish stocks.

One noteworthy aspect found in Nepal-India bilateral regimes is that Nepal authorizes India to make surveys and investigations in connection with the Kosi project, before, during, and after the construction, as necessary from time to time. These surveys include ground, aerial, hydraulic, hydrometric, hydrological and geological surveys; investigations for communications and for the alignment of canals and materials required for the construction and maintenance of the Kosi project. These surveys and investigations are very important criteria for the sustainable development of the areas involved. However, as both the Kosi and Gandak regimes established by India and Nepal are development-oriented projects, the notions of ecology and environmental protection remain secondary in the two documents governing the projects.

11.3.3.2. Flood Control Measures

Since the 1970's, both India and Bangladesh have been presenting their plans to each other in order to address the problems of dry season water scarcity and flooding during monsoon season. However, the two States have failed to reach any agreement on planned measures of flood control.[960] Bangladesh seems inclined to include Nepal and develop an

[956] See, 36 *ILM*, 1997, p.519.
[957] Ibid, p.533.
[958] Rahman, 1984, p.273.
[959] See, *India Today*, January 15, 1997, p.104.
[960] According to the Dhaka University Research Center, the number of high floods occurring in Bangladesh was three times higher in the 1970s than in the 1950s, and again increased to

integrated management approach to the Ganges waters, whereas India has negotiated with Nepal and Bangladesh separately. A few measures on flood control provided for in the bilateral agreements are as follows.

According to Article 3(1) of the 1996 Mahakali Treaty, the Pancheshwar Multipurpose Project is to be designed and implemented so that all benefits accruing to both the Parties in forms of hydro-power, irrigation, and flood control. The Minutes of the Indo-Nepal Joint Commission (1991) mentions the establishment of the flood forecasting and a warning system of flood protection embankment. These were recommendations of the high level task force established by the Commission concerning the series of projects on the different rivers that run from Nepal to India, including the Karnali (Chisapani) Multipurpose Project, the Pancheshwar Multipurpose Project, the Kosi (Bhimnagar Barrage), the Saptkosi High Dam Multipurpose Project, the Bhudi Gandaki Project, and the Kamala and Bagmati schemes. To date, no concert action plan exists for the implementation of the Agreed Minutes. A study prepared by the Nepal-Bangladesh joint study team recommended the need for cooperation in mitigating flooding, including the establishment of a forecasting warning system in the region.[961]

In the Preamble of the 1996 Ganges Treaty, both India and Bangladesh express their desires to control flooding. However, no measures for flood control are adopted in the treaty. According to Article II (ii) of the 1996 Ganges Treaty, in the event that the flow of water at Farakka falls below 50,000 cusecs in any 10-day period, both countries are to enter into immediate consultation to make adjustments on an emergency basis. However, such emergency measures are not viewed as necessary in times of flooding or drought. Arguably, such an emergency may be implied with States' obligation. Still, in applying an integrated management of the Ganges watercourse, it would require not only a river embankment, but also may require the resettlement of major cities located on the bank of rivers, away from areas where people suffer from monsoon season flooding.

Flash floods and landslides perennially and routinely leave trails of destruction in the South Asian region. In May 2001, a consultative meeting jointly organized by the World Meteorological Organization (WMO) and the International Center for Integrated Mountain Development (ICIMOD) discussed the need for a framework of flood forecasting in the HKH region.[962] This was a consultative meeting of experts from Bangladesh, Bhutan, China, India, Nepal and Pakistan, which emphasized:

1) the need for an effective flood forecasting mechanism in the region;

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four times higher in the 1980s. The year 1998 was the worst in the history of flooding in the region. This has not been taken into consideration in the legal arrangement between the Ganges watercourse States.

[961] *Report 1992*, see also *Water Nepal*, No.2-3, 1993, pp.81-82.

[962] The meeting was held in Kathmandu, see *Kathmandu Post*, May 17, 2001.

2) the need to carry out extensive research for an enhanced data acquisition and management, analysis and plausible interpretations of hydro-meteorological data on the basis of flood forecasting; and
3) the need for timely flood warning systems to be in place on some of the major rivers in order to save lives and property and avoid disasters.[963]

Maintenance and sharing of watercourse related data is necessary in terms of weather forecasts, climate change and the entire drainage basin eco-system management. As to the flood control in the Himalayan basin, cooperation between the basin States is vital, with due regard to the interests and well beings of each other.[964] Equally vital is the sharing of information between basin States for an integrated management of watercourses.

11.3.3.3. Information Sharing

According to Article 31 of the 1997 UN Convention, watercourse States are obliged to share water-related data and information.[965] This does not oblige the watercourse States to share data and information, which are vital to national defense or security, a difficult distinction to apply.[966] This ambiguity needs to be taken into consideration when discussing the issues of sharing watercourse-related information among the Himalayan basin States. In contradiction to Article 33 of the 1997 UN Convention, the Kosi and Gandak Agreements contain unique provisions that grant India an overwhelming power to gather information.

Article 2 of the 1996 Mahakali Treaty recognizes the need for flood forecasting and warning system arrangements for a continuous effective manner to enable and monitor flood situations. According to Article 9(3)(a) of the 1996 Mahakali Treaty, one of the functions of the Mahakali River Commission is to seek information and, if necessary, inspect all structures included in the treaty. To date, this treaty is still not fully implemented. However, it must be realized that Nepal and India have developed partial mechanisms for sharing their watercourse related-data and information under the bilateral agreements, including those pertinent to the Kosi, Gandak and Mahakali rivers.

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[963] Ibid.
[964] Articles 31-36 in the Campione Consolidation of the ILA Rules on International Water Resources 1966-1999.
[965] Article 31: "Nothing in the present Convention obliges a watercourse State to provide data or information vital to its national defense or security. Never the less, the State shall cooperate in good faith with the other watercourse States with a view to providing as much information as possible under the circumstances."
[966] Egypt regards its data on the Nile River flow and its consumption as highly confidential matter of national security, see Goldenman, 1990, p.755.

With respect to watercourse-related information sharing between India and Bangladesh, it should be noted that the India-Bangladesh Joint Rivers Commission is responsible for carrying out investigations and studies of schemes relating to the augmentation of the dry season flows of the Ganges. The Joint Committee is responsible for the keeping of records of the daily flow of water at Farakka under Article VI of the 1996 Ganges Treaty. The Committee is also responsible to submit its data and yearly report to both governments. It should be noted that both India and Pakistan agreed to exchange data under the 1960 Indus Water Treaty, despite the uneasy relations between the two countries. Sharing of watercourse-related data between China and South Asian States would be a prerequisite for the ecologically friendly management of the Himalayan basin. However, in the HKH region, data, information and maps are classified and not even available to their own national researchers.[967] Regarding Ganges watercourse-related data sharing among Nepal, India and Bangladesh, one researcher has accurately described the situation:

> In most international discussions of consequence, there is pressure in these discussions for secrecy and the control of information. Data and documents are routinely classified and sometime suppressed. Press releases and statements are influenced by the tactical needs of one side at a particular moment. These tendencies favoring secrecy and the manipulation of information are redoubled when, as in this case, the issues under discussion come to reflect national goals and national identities. In a case of conflict, independent research is monitored and sometimes discouraged. For an account of what happened in the discussion one has to peer behind a veil of secrecy, misinformation and partisan perceptions.[968]

The above description makes clear that there is secrecy and control of information, and there is a lack of open diplomacy. In addition, transparency and sharing of data remains a problem. Above all, technical data is often clothed in political language, thereby creating confusion in watercourses-related issues of national interests. A looming question is what would happen in South Asia if a hydraulic mining operation in mineral-rich Tibet discharged poisonous substances into the source a South Asian River? There is no mechanism to handle such a situation. More than a possible scenario, the reality is that research reveals the effects of climate warming in the Himalayas. Therefore it must be realized that constructive

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[967] *Proceedings of the Regional Workshops on Local Water Harvesting for Mountain Households in the Hindu-Kush-Himalayas*, March 14-16, 1999. See, Chalise, 1999, pp.4-10.
[968] Crow, Lindquist and Wilson, 1995, p.11.

cooperation in sharing data and information between the Himalayan basin States is required more than ever.[969]

In the Ganges basin case, the tendencies of the basin States shape their watercourse policies based on political goals, needs to be replaced by fact-based approaches to these issues.[970] The development projects of the Ganges basin may have consistently employed methods which seemed acceptable in their time, but the utility of the projects ultimately are inconsistent with the environment, and the consequences are devastating. There is a tendency on the part of the project planners to overestimate the projected need for electric energy, while environmental impact studies and projections performed by consulting firms appear to underestimate the effects.

One of the striking problems in the Ganges case is that even the professionals seem to treat the Ganges conflicts as data conflicts, to be dealt with in the technical areas of expertise. Although most water conflicts are more likely to relate to values, interests and relationship issues, there are always some data conflicts involved in each case.[971] The Ganges watercourse is a prime example involving the conflict of both facts and value judgment of the watercourse States.[972] None of the existing agreements on the Ganges watercourse include provisions for sharing data on a regional level. The Ganges watercourse case suggests that the existing arrangement needs amendment or adjustment, or even a new, basin-wide framework.

11.4. Implementation Mechanisms

There are various bilateral institutions established by India and Nepal, and Bangladesh and India, within their respective bilateral agreements which are responsible for the implementation of the treaties. The India-Bangladesh Joint River Commission was established in 1972 for the common use on a cooperative basis. However, this is not an autonomous body with decision-making power. After the governments failed to negotiate after the expiration of the 1977 Ganges Agreement, the India-Bangladesh Joint River Commission became dormant after its 31st meeting (1990). From 1988 to 1996, Bangladesh and India were in a situation that can be described the cold-water war. Both countries were unable to agree on the utilization of the Ganges for eight years. The updated version of the earlier agreements is contained in Articles IV-VII of the 1996 Ganges

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[969] The past 50 years, especially the last two decades, have been the warmest in 1,000 years, making a new analysis of centuries old ice possible. Ice cores drilled through a glacier more than four miles down in the Himalayan Mountains have yielded a highly detailed record of the last 1,000 years of the earth's climate on the high Tibetan Plateau. See,
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[970] Paragraph 4 of Article 33 of the 1997 UN Convention.

[971] Prescoli, 1993, pp.43-58.

[972] For an example of factual data clothed in political language regarding the Ganges water sharing, see Crow, 1995, p.22.

Treaty, which has replaced the panel of experts with the Joint Committee consisting of representatives nominated by the two governments in equal numbers. The Committee is responsible to collect data and submit yearly reports to the governments. This Committee is also responsible for implementing the arrangements contained in the treaty. The Committee is primarily responsible for observing and recording water flow at the Farakka Barrage. If and when the Committee fails to resolve the differences between the parties, the matter is to be referred to the India-Bangladesh Joint River Commission.

Apart from the Mahakali River Commission established under Article 9 of the 1996 Mahakali Treaty, there exists the Nepal-India Joint Commission between Nepal and India, which was established in 1988 in order to strengthen understanding and to promote cooperation between the two countries. The scope of the Nepal-India Joint Commission is wide, including the area of economics, trade, transit, industrial fields and the multiple uses of water resources. This Commission is responsible for preparing agenda items of discussion regarding the matters mentioned above, as well as to recommend necessary actions on matters already agreed upon between the two Parties. However, the Commission is not empowered to make decisions or settle disputes between the two countries.

Bilateral matters between Nepal and India can be discussed by the Nepal-India Joint Commission, and recommended to the governments for necessary actions including the conclusion of treaties and agreements. Practically, however, there have always been difficulties in renewing the trade and transit treaties between the two countries. For example, following the expiry of Nepal's trade and transit treaties with India in 1989, negotiations between the two countries collapsed. After a change in government in India, and establishment of democratic political system in Nepal (1990-91), negotiations between the two countries resulted in the signing of a communiqué, which restored the *status quo ante*. Two separate treaties on trade and transit were subsequently concluded between Nepal and India, which are subject to renewal every five years through negotiation. The Mahakali River Commission is primarily responsible for collecting information, inspection of all issues relevant to the treaty, making recommendations to the governments concerning conservation and utilization of the river, and evaluating the projects, as well as coordinating between the parties.

An important question in examining the existing treaties, from the regional cooperation organizations' perspective, is whether there are or will be negotiations based on the actual needs of the parties, rather than negotiations based on the political positions of the parties. Because of the bilateral negotiations based on political positions, the Ganges watercourse management model remains within bilateral institutions, which is less effective. Interestingly, however, bilateral matters of the Member States are

kept outside the purview of the multilateral institutions, such as SAARC.[973] Given the geographical and hydrological reality for multilateral cooperation, sooner or later the Himalayan basin States will need to adopt an integrated multilateral management in order to realize mutual benefits. This will require the negotiation of their needs. The list of needs and mutual benefits through the integrated management of the Himalayan basin States, as suggested by several studies, includes:

1) a supply of hydropower from Bhutan and Nepal to India, Bangladesh and possibly to Tibet;
2) a supply of water for drinking purposes as well as irrigation from Nepal to India;
3) the granting of river navigation, transit and communication in India and Bangladesh to Bhutan and Nepal;
4) a Bangladesh-India, inter-basin water transfer; and
5) regional flood control and overall environmental protection of the Himalayan region.[974]

The Himalayan basin States can realize the potential of mutual benefits from these above-mentioned points either by amending or adjusting the existing treaties or concluding a new, regional agreements and thereby translating the agreed measures into reality. This depends solely on the mutual consent of the basin States. Both the protection and use of the Himalayan drainage basin and its watercourses would require the perspective of a basin-wide approach, including the determination of the respective rights of each basin State and the sharing of benefits. For example, the Indian plan to link the Ganges-Brahmaputra rivers cannot afford to exclude China, if a basin-wide approach to development is to be adopted.

The parameters of the India-Bangladesh Joint River Commission are limited to the two countries. The Nepal-India Joint Commission does not include Bangladesh. Both China and Bhutan, the upper riparians of the Ganges and Brahmaputra rivers, are not taken into consideration in these bilateral commissions. Bhutan deserves its rightful shares in the plan linking the Ganges and Brahmaputra rivers. In any event, the relationship between China and India is of vital importance, a necessary prerequisite to any meaningful basin-wide approach. Nepal's inclusion in the India-

[973] SAARC Charter does not include resolution of the bilateral issues of its Member States within its sphere of functioning.
[974] Crow, Lindquests and Wilson, 1995, p.222. Agenda 21, Chapter 18 recognizes the need for an integrated management of the world's fresh water. There is no disagreement among basin States on these issues of mutual benefits through integrated managements rather the model of management has been the issue of disagreement among the States sharing the rivers of the Himalayan basin.

Bangladesh scheme for tapping the Ganges waters on the India-Nepal border is important from a legal and practical point of view.

In order to resolve the frustration of sustainable use at the Farakka Barrage, the building of water reservoirs in sites on the India-Nepal border would need acceptance by both countries. Even if the two countries reached an agreement to do so, both India and Bangladesh would need to insure Nepal's freedom of navigation, its need for hydroelectricity development and the environmental concern resulting from the dams. At the same time, both Nepal and Bangladesh would need to assure India that they would not use the inclusion of China against India in the basin-wide approach.

The Sub-SAARC, which consists of Nepal, India and Bangladesh, will find it difficult to achieve success in developing basin-wide water use and protection, if Bhutan and Tibet/China are not involved. It would require that India takes into account the recommendations of experts, specifically, to establish the Eastern Himalayan River Commission.[975] An adoption of such procedures may follow those set up for the Mekong, Zambezi and the Amazon basin, suggesting a variety of options for the Himalayan basin States to follow. The Himalayan basin States may reach the win-win situation by redefining the current normative security paradigm, which is based on mutual distrust and confrontation, and by shifting their focus to mutual cooperation leading to the sustainable use of watercourses.

The regional institutions of the entire HKH region, namely ICIMOD, could play an instrumental role in the sustainable development of the regional water resources, promoting poverty alleviation and environmental conservation in the HKH Mountain region.[976] The mandate for environment and development, reflected in Article 1 of the ICIMOD's Statutes (1991), includes Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. The ICIMOD is the only international organization in the region with a clearly defined eco-regional focus, and the ecological boundaries of the mountain ecosystem of the HKH determine its area, focusing on sustainable development of the region as a whole. Therefore, it seems important to establish a link between SAARC and ICIMOD and all the joint river commissions in the region. In this context, the following measures appear necessary to achieve a comprehensive legal framework for the sustainable use and integrated management of South Asian watercourses:

- Environmental protection and improvement of the Himalayan drainage basin and its watercourses as a whole;

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[975] Kautilya, *India Today*, April 10, 2000, p.35. This article states that in order to overcome the big brother syndrome, India might consider the participation of Indian States - Utter Paradesh, Bihar, West Bengal and Asam - rather than the Union Republic of India with the local provinces of the States sharing the Himalayan basin.

[976] International Center for Integrated Mountain Development-Statutes June 28, 1991.

- Flood control during the monsoon season in the region in general and in India and Bangladesh in particular;
- Water resource management in order to meet the drinking water needs of the rapidly expanding populations of northern India and West Bengal, as well as irrigation for food production in India, Bangladesh and Nepal;
- Hydroelectricity development in Nepal and Bhutan, which according to some estimates has the capacity to meet the needs of electricity for the entire South Asian region;
- Access to and from the sea for land-locked Nepal and Bhutan, including river navigation;
- Cooperation between China and other South Asian States regarding the management of the Himalayan region, at least in sharing hydrological data between States of the HKH region.
- Adoption by the HKH States of the 1992 ECE Helsinki Convention as a model for the protection and use of the Himalayan rivers.

Given the background of conflicting perceptions among the Himalayan basin States concerning the 1997 UN Convention, it is obvious that compromise on what are perceived to be vital national interests by the concerned States would be required, in order to adopt the principle of equitable utilization, sustainable development and integrated management of the watercourses of the region. These are the major thrusts of the modern law of international watercourses concerning the regimes of uses and protection.

11.5. Dispute Settlement

Apart from institutional mechanisms and data exchange among watercourse States, international watercourse management capabilities can be analyzed as well in terms of dispute settlement principles and institutional mechanisms. The existing legal regime of the Himalayan basin will be reviewed in the following, focusing on the provisions of water dispute settlement together with provisions of amendment or adjustment.

It needs to be noted from the outset what the Himalayan basin States' approach towards Article 33 of the 1997 UN Convention is, in that it provides a framework for international water dispute settlement. As mentioned before, Bangladesh and Nepal have adopted Article 33 of the 1997 UN Convention. Bhutan, China and India opposed Article 33. Both China and India have a common view regarding Article 33, but for different reasons. This Article states that in absence of a treaty between watercourse States, the provisions available in Article 33 will be the applicable law for international watercourse dispute settlement. However, China and India vehemently opposed the Fact-finding Commission mentioned in paragraph 4 of Article 33 as a compulsory provision.

The framer of paragraph 4 of Article 33 seems to realize that in absence of the Fact-finding Commission, the conflict of facts will be difficult to resolve. Both China and India seem to agree with a voluntary fact-finding approach, including dispute settlement, rather than compulsory settlement.

The exiting mechanism of dispute settlement of the Ganges regime can be explored bearing in mind the views of the Himalayan basin States concerning Article 33 of the 1997 UN Convention. Bangladesh made a complaint concerning the sharing of the Ganges water flows, in 1976, against India in the United Nations General Assembly, but did not submit the case to the International Court of Justice. However, the Farakka Barrage controversy was partly resolved with the signing of the 1977 Ganges Agreement, which was valid until 1988 through the renewal of the 1985 Memorandum of Understanding between the two countries. After various rounds of negotiations (1992-1995), both governments agreed in 1995 to reactivate the India-Bangladesh Joint River Commission.[977] Negotiations resulted into signing of the 1996 Treaty on Sharing of the Ganges Water at Farakka by the prime ministers of both countries. The 1996 Ganges Treaty is to remain in force for a period of 30 years, and is renewable on the basis of mutual consent. The Farakka Barrage case and the 1996 Ganges Treaty between India and Bangladesh suggests that negotiation, not adjudication or arbitration, is the best solution to water dispute settlement, and to the amendment and adjustment of the treaties.

The bilateral regime between Nepal and India has detailed provisions of arbitration, which recognizes it as the ultimate venue of dispute settlement. However, the two countries have not yet used arbitration. Article 9 of the 1996 Mahakali Treaty establishes the Mahakali River Commission, which is supposed to be composed of equal numbers of representatives from the Parties, to resolve differences relating to the implementations of the Treaty. If the Commission fails to resolve the differences arising between the

[977] After the expiration of the tenure of the 1977 Ganges Agreement and its update by the 1985 MOU, which expired in May 1988, Bangladesh urged India 1989 to settle the problem on a permanent basis, separating it from the issue of augmentation. The secretaries of the Ministries of Water Resources of the two countries held five rounds of discussions between June 1990 and October 1991, and the foreign ministers of the two countries also discussed the issue. In 1992, both the prime ministers of Bangladesh and India directed their ministers to make renewed efforts for attaining a settlement for equitable, long term and comprehensive sharing of the flows of the Ganges and other major rivers. The Prime Minister of India subsequently assured his Bangladeshi counterpart as to the equitable sharing of water at Farakka. In 1992, the prime ministers meeting was followed by ministerial and secretarial level meetings without result. In 1993, both the prime ministers of India and Bangladesh again discussed the issue of water sharing in Dhaka, but this discussion produced nothing. In 1995 the Bangladeshi Prime Minister again discussed the issue in New Delhi with his counterpart, which was followed by two rounds of meetings between the foreign secretaries of the two countries. Bangladesh once again urged a long term sharing at a meeting of the foreign secretaries in June 1995, again without result. In early 1996, the governments in both India and Bangladesh changed as a result of general elections. Several rounds of meetings from July to December 1996 were held between at various levels, which resulted the 1996 Ganges Treaty.

Parties within three months of the reference of a difference, according to Article 11 of the 1996 Mahakali Treaty, the dispute is to be submitted to arbitration, which is to be final and binding. Based on the above discussion, it can be concluded that the Ganges watercourse States have used negotiation as an exclusive method for settlement of disputes and to renew treaties, and adjusting or concluding new treaties.

11.6. Appraisal

The legal arrangements covering the Himalayan basin in South Asia are use oriented, exist on a piecemeal basis, and lack measures for protection as well as an integrated management structure. The agreements as they are at present, are based on normative security paradigms and focused on national interests founded on mutual suspicion, rather than being based on a collaborative eco-system management of the watercourse. The objectives of the legal arrangements, at the time the agreements were made, may have provided a balance between the competitive uses, but they have not provided for long-term sustainable development, protection and improvement of the watercourse and its surrounding environment. Most of the disputes involving water projects between Nepal-India and Bangladesh-India appear to be the consequence of a lack of integrated perspectives among the three salient regimes of international watercourses.

Within the legal arrangements, the Ganges watercourse States seem concerned only with non-navigational uses, particularly hydroelectricity production and irrigation. Despite the need and potential for navigational use of the Ganges waterways, particularly for land-locked States (Nepal and Bhutan), there exists no plan regarding river navigation. The Kosi regime recognizes navigation rights, but it is a mere declaration of the right, rather than detailing any practical application of freedom of navigation on the entire watercourse.

The measures for use allocation in times of water shortages provide for proportional sharing in the Nepal-India and India-Bangladesh bilateral treaties. However, in actual practice, water use allocation has resulted in adverse environmental consequences, e.g. at the Farakka Barrage, flooding during the monsoon remains a problem, and demand for water supply during the dry season has not been met, because of a lack of integrated management, thereby leading to friction between the parties to the agreements.

The riparian rights recognized by the existing legal arrangements of the Ganges watercourse differ from case to case. In the 1996 Ganges Treaty, the recognized general principles of water use are equity and fair sharing. Meanwhile the 1996 Mahakali Treaty includes the principles of equal share and equal investment. On the whole, the regime of environmental protection is almost non-existent, with the focus of the existing regime being on riparian rights rather than the obligation of the protection of the watercourse.

Regional flood control measures are lacking in the legal arrangements. The 1991 Agreed Minutes of Nepal-India Joint Commission recognizes the need for flood forecasting and a warning system arrangement for a continuous effective system enabling and monitoring the flood situation on a continuing basis. This does not apply to all States sharing the Himalayan basin. The 1996 Ganges Treaty has adopted a formula of water sharing at Farakka, but there is neither an eco-system-based protection mechanism nor a system of comprehensive flood control measures.

The duration of the bilateral treaties varies (ranging from 30 to 199 years). These treaties need to be amended as well as adjusted to incorporate provisions for environmental protection. The bilateral joint river commissions, one of them constituted by representatives of Nepal and India and the other Bangladesh and India, may be used in this regard. However, the scope of the jurisdiction of the river commissions is limited to diplomatic, rather than legal measures, concerning the amendments to or adjustments of the existing treaties. But at the same time, it must be noted that diplomatic negotiations among the Ganges watercourse States have not always led to the resolution of differences, especially where unilateral measures are carried out within one State's territory, causing adverse impacts in another State's territory, e.g. Farakka Barrage.

The past record of adjustment of treaties between the Ganges basin States demonstrates the difficulties of water sharing as well as making changes or entering into new agreements. Adjustment through negotiation is usually affected by the constraints of national interest. Negotiations between the governments appear to be a solution for dispute settlement, amendment and adjustment of the treaties, which in turn depends upon the issues and negotiating skills of statesmen. However, the nature of the existing agreements in the HKH area indicates that there is often negotiation based on the political posturing of negotiating parties, rather than their actual needs. In this regard one glaring example is that none of these agreements address the important issue of the maintenance of water quality, the end result being that the people of the basin States suffer from the unprotected, contaminated waters.

Hydrologically, the HKH region is intricately interlinked, with the snows in the Himalayas and the monsoon from the Bay of Bengal serving as the main sources of regional eco-system balance. Combating drought in Afghanistan and flooding in Burma or Bangladesh needs an integrated perspective. The climate related change in the Himalayan drainage basin depends upon the hydrological cycle, including the balance in the estuarine zones of the Bay of Bengal, balancing the hot and the cold water currents of the sea, which in turn balance the regional climate. Any changes in the monsoon precipitation levels changes the amount of snow or rainfall, ultimately effecting river flows. Equally important is the need for protection of the snow and ice covered areas of the Himalayas. Cooperation between the HKH States in general and between China and South Asian

States in particular is vital for hydrological data sharing and ecological management of the region. Rational understanding between States is the key for sustainable utilization, and political posturing among States will not help to balance the Himalayan eco-system. Even where there are measures in the existing arrangements to adjust to changing circumstances, hard political bargaining is evident and tends to dominate negotiations. The political decision-makers of the HKH region and elsewhere, which are responsible for the cooperation and integrated management of international watercourses on behalf of the people of their respective States, must realize that the prevailing use orientation of the agreements is simultaneously the reason and consequence of mistrust among States. Result-oriented sustainable use, which necessitates emphasis on the larger needs of people rather than the politically motivated positions of the parties to the agreement, may be the key not only for the protection of the environment of the region but also to foster mutual trust and an enhancement of cooperation between the Himalayan basin States.

As people realize the benefits of sustainable use, their articulated interests would focus on aggregate human needs, which may in turn lead to pressure on States to rethink their narrow national interests. The local community needs to be involved in the decision making process concerning international watercourses, in order to reach a consensus about uses and protection.

CHAPTER 12: SOUTHERN AFRICAN WATER BASINS

12.1. Introduction

The Member States of the SADC signed the Protocol on Shared Watercourses in 1995 (hereinafter referred to as the "1995 SADC Protocol").[978] The major international drainage basins of the SADC region (Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe) include the rivers Zambezi, Okavango, Orange, Pungue, Cunene and Save. There are several interbasin water transfer projects under construction in order to meet the water scarcity problem in the SADC region. The largest inter-basin water transfer plan calls for the diversion of water from the Okavango River to Namibia, and the diversion of water from the rivers Zambezi-Chobe to Botswana, with these diversions ultimately transfering to South Africa.

The 1995 SADC Protocol, which governs the use and protection of the Southern African basins, will be examined in the following in order to explain this agreement's integrated perspective of the regimes. The Preamble of the 1995 SADC Protocol considers the water in the region as a scarce resource with 70% of the regional surface waters shared between two or more member States, prone to devastating droughts, drastically affecting human and livestock populations alike. This makes clear that water scarcity is a determining factor in establishing the legal regime governing shared waters of the region under the 1995 SADC Protocol. It further states that "in the next 20 to 30 years, three or four SADC States will be facing serious water shortages if nothing is done now."

Having recognized the problem of water scarcity in the region and as a coordinated approach to utilization and preservation of water, the 1995 SADC Protocol was signed as a legally binding document, aiming "to ensure equitable sharing of water and also ensure efficient conservation of the scarce resource." The 1995 SADC Protocol entered into force on September 29, 1998, and was revised on August 7, 2000, (hereinafter referred to as the "2000 Revised Protocol").[979] At the time of the adoption of the 1995 Protocol, there were no global conventions regulating common utilization and management of shared community watercourse resources. The 2000 Revised Protocol, which takes into account the principles of the 1997 UN Convention, aims to "foster closer cooperation for judicious, sustainable and coordinated management, protection and utilization of shared watercourses and advance the SADC agenda of regional integration and poverty alleviation."[980]

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[978] See<http://www.internationalwaterlaw.org/>(visitd Nov.11, 2004).
[979] Ibid.
[980] Preamble of the 2000 Revised Protocol.

12.2. Concepts and Approaches

The 1995 SADC Protocol and its revised version (2000) establishes the concept of shared water and recognizes such waters as a system. According to Article 1, paragraph 1:

> The utilization of shared watercourse systems within the SADC region shall be open to each riparian or basin Sate, in respect to the watercourse systems within its territory and without prejudice to its sovereign rights, in accordance with the principle contained in this Protocol.[981]

The 1995 SADC Protocol's recognition of "shared" watercourse, as a "system" is a major step forward for the sustainable use and integrated management of the relevant international watercourses. Regarding the term "shared resource", it should be recalled here that in 1984, the ILC excluded the concept of "international shared water" from its agenda of codification, realizing that the term "shared" would focus on the issues of State sovereignty over shared resources.[982] While some experts believe that the recognition of the "shared resource concept" may enhance cooperation between States,[983] Special Rapporteur McCaffrey argued that the shared resource concept was excluded by the ILC from codification in order to give a greater certainty to the legal articles relating to the idea that States are entitled to a reasonable and equitable share of the uses of the waters of international watercourses.[984] Despite the exclusion of the shared water concept from the 1997 UN Convention, it is relevant to note here that the International Court of Justice has enhanced SADC's shared water resource concept by recognizing the Danube as a shared river in the *Danube Gabcikovo-Nagymaros Case* .[985]

Regarding the use of the term "system", it should also be recalled that in 1980 the ILC accepted the following 'provisional working hypothesis' for the term international watercourse system:

> A watercourse system is formed of hydrological components such as rivers, lakes, canals, glaciers and groundwater constituting by virtue of their physical relationship a unitary whole; thus any use affecting waters in one part of the system may affect water in another part. To the extent that the uses of the waters of the system have an effect on one another, to the extent the system is international, but only to that extent;

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[981] Ibid.

[982] Goldenman, 1990, p.775.

[983] Benvenisti, 1996, pp.411-414.

[984] In 1984, the ILC replaced the 'shared natural resource concept' "with the idea that the waters of an international watercourse shall be developed, used and shared…in a reasonable manner… on the basis of good faith and good neighborly relations,' which according to many experts is a vague principle, see Goldenman, 1990, p.775.

[985] For a detailed analysis, see in *YIEL*, 1997, Vol.8, pp.6-50.

accordingly, there is no absolute, but a relative, international character of the watercourse.[986]

The word "system" evokes a broader hydrological concept that many States, it appears, are not willing to accept. The ILC initially intended to include the term "international watercourse" in its definition of "system". Because of the controversies arising out of the term "system" and "shared" in its draft, the ILC agreed only on international watercourses, bracketing the term "system" to read "international watercourse [system]". Those who wish to retain the term "system" point out that in its absence, it is difficult to express the relative concept of an international watercourse, which can be governed by different regimes depending on the ways the watercourses are used.[987] Within the "system" of the 1995 SADC Protocol, sustainable utilization is not recognized as a factor to be taken into account for equitable utilization. There is no simultaneous application of the principle of equitable utilization with sustainable development, as it is provided for in the 1992 ECE Helsinki Convention. However, like the 1995 Mekong Agreement, the 1995 SADC Protocol recognizes sustainable development as a national goal rather than an international obligation.[988]

12.3. Substantive Principles

The 1995 SADC Protocol provides for the principles of utilization and preservation of water in the SADC region.[989] There are 13 main points in Article 1, listed as segments of the governing general principle. The list of principles provided for in Article 1 can be described as follows. The Protocol recognizes the sovereign right of the riparian States,[990] which is the classic rule of international law. This sovereign right of States had been claimed and counterclaimed in the past by the riparian States, until the 1990's, when recognition of the principle of equitable utilization concerning the regimes of uses and protection became more universal. In recognition of the principle of equitable utilization, the 1995 SADC Protocol recognizes internationally shared watercourses of the region as a "system" of water, in cases where the watercourse is situated in a territory bordered by two or more States. Most of the watercourse treaties had, up until this point, generally avoided including the term "system", despite the fact that international watercourses are defined as being situated in two or more States, and by hydrological implication, constitute international watercourse systems. Since there was so much hesitancy to use the term "system" in international treaties, the inclusion of the term "international

[986] *Second Report on the Law of the Non-Navigational Uses of International Watercourses*, UNDocA/CN.4/339, 1986.
[987] Goldenman, 1990, pp.714-797.
[988] Article 2 of the 1995 SADC Protocol and Article 1of the 1992 ECE Helsinki Convention and Articles 3, 4, 5, 7 of the 1995 Mekong Agreement.
[989] Article 1 of the 1995 SADC Protocol.
[990] Article 1, para 1.

watercourse system" in the 1995 SADC Protocol can be considered as a progressive development of the law of international watercourses.

Article 1 of the Protocol contains provisions regarding both navigational uses and non-navigational uses (i.e. agricultural, domestic and industrial use). This list of uses, along with the principles of protection, indicate not only an awareness on the part of the drafters in harmonizing the regimes of uses and protection, but also the need and willingness of the States to share international watercourses. This also demonstrates the trend of international watercourse treaties of the 1990's, establishing the interrelationships between the uses of shared waters.

SADC Member States are required by the 1995 SADC Protocol "to respect and apply the existing rules of general or customary international law relating to the utilization and management of the resources of shared watercourse systems."[991] It should be noted here that the Protocol does not identify all of the principles of general or customary international law relating to the utilization and management of the resources of shared watercourse systems. However, it makes clear the obligation "in particular, to respect and abide by the principles of community of interests in the equitable utilization of those systems and related resources."[992] It clearly recognizes the principle of community of interests in the equitable utilization of those systems and related resources. In doing so, it takes into account the existing rules of general or customary international law relating to shared international waters.[993] It is important here to note that the 1995 SADC Protocol recognizes the interests of the riparian States as it relates to both navigational and non-navigational uses.[994]

As to the regime of protection and preservation of shared waters, SADC Member States sharing the basin of a common watercourse system are required "to maintain a proper balance between resource development for higher standard of living for their peoples and conservation and enhancement of the environment to promote sustainable development".[995] Thus, it is clear that the 1995 SADC Protocol recognizes the principles of community of interests in the equitable utilization of regimes of uses, on the one hand, and the conservation and enhancement of the environment by promoting the concept of sustainable development, on the other. Obviously, the aim is to maintain a balance between environmental concerns and resource development for a higher standard of living for the people in the SADC region.

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[991] Article 1, para 2, see also Article 3 in the 2000 Revised Protocol.

[992] For more discussion about the principle of equitable utilization, which is provided for in Articles 5,6 and 7 of the 1997 UN Convention, see Part IV.

[993] Article 1, para 2.

[994] The PCIJ in the *River Oder Case* recognized the *community interest of the riparian States* as to navigational use, see Part VI.

[995] Article 1, para 3 of the 1995 SADC Protocol.

SADC Member States are required to pursue and establish close cooperation with each other, reaffirming the riparian State's duty to cooperate, including "the study and execution of all projects likely to have an effect on the watercourse system."[996] The Member States are also required to share data and information concerning the hydrological, hydrogeological, water quality, meteorological and ecological condition of such watercourse systems. Duty to share data and information, which is a procedural rule of international watercourse law under the 1997 UN Convention,[997] is included under the substantive part of the principle under Article 1 of the 1995 SADC Protocol.[998]

Above all, the aim of the 1995 SADC Protocol is that the use of the shared watercourse is subject to equitable utilization,[999] "attaining optimum utilization thereof and obtaining benefits therefrom consistent with adequate protection of the watercourse system."[1000]

12.3.1. Criteria

In establishing the legal regime of equitable utilization, relevant factors and circumstances required to be taken into account of the 1995 SADC Protocol are:

a) Geographical, hydrographical, hydrological, climatical and other factors of a natural character;
b) The social and economic needs of the member States concerned;
c) The effects of the use of a shared watercourse system in one watercourse State on another watercourse State;
d) Existing and potential uses of the shared watercourse system; and
e) Guidelines and agreed standards to be adopted.[1001]

From the point of view of the principle of equitable utilization, it is clear that each of these factors are of equal value, but the 1995 SADC Protocol makes it clear that relevant factors may be judged case by case according to particular circumstance, in particular water scarcity and flooding. Since the guidelines and agreed standards are a matter for further agreement on the basis of the 1995 SADC Protocol, depending upon circumstances, this provision in effect becomes a framework for shared watercourses in the Southern African Development Community. It is noteworthy that the 1995 SADC Protocol requires a permit system for use and waste discharge.[1002] Any person intending to use the waters of a shared watercourse system within their respective territories of the SADC Member States for purposes

[996] Article 1, para 4, of the 1995 SADC Protocol..
[997] For more discussion about the 1997 UN Convention, see Part V.
[998] Article 1, para 5, of the 1995 SADC Protocol.
[999] Ibid, para 6.
[1000] Ibid.
[1001] Ibid, para 7.
[1002] Ibid, para 8.

other than domestic use are required to obtain a permit from the relevant authority within the State concerned. This also applies to persons intending to discharge wastes into waters. Each of the SADC Member States has to determine that "intended discharge will not have a detrimental effect on the regime of the watercourse system."[1003]

Just as with the duty to share data and information, the duty to notify each other is considered obligatory according to the 1995 SADC Protocol.[1004] The Member States are required to notify without delay as to any emergency originating within their respective territories to other potentially affected States and competent international organizations. In order to save life or to protect public health and safety or other equally important interests as a result of an emergency situation, the Member States need to make a formal declaration of the urgency of the measures.[1005]

As to the protection of the ecosystem,[1006] SADC Member States are required to take all measures necessary to prevent the introduction of alien aquatic species into a shared watercourse system that would have detrimental effects on the ecosystem. Apart from the protection of ecosystem, it is the duty of the Member States to maintain and protect shared watercourse systems and related installations, facilities and other works in order to prevent pollution or environmental degradation.[1007] An important, and unique character of the 1995 SADC Protocol is that it takes an approach of water use for peace. This approach obliges the Member States to insure that shared watercourse systems and related installations, facilities and other works are to be used exclusively for peaceful purposes consistent with the principles enshrined in the SADC Treaty and in the UN Charter.[1008] This provision is especially relevant, given the background of an impending international water crisis, and the likelihood of conflicts over water in the region and elsewhere.

12.4. Implementation Mechanisms

In order to ensure an effective implementation of the 1995 SADC Protocol, the Member States have agreed to establish River Basin Management Institutions for Shared Watercourse Systems in the SADC region.[1009] These institutions are:

a) A monitoring unit based at the SADC Environment and Land Management Sector (ELMS);
b) River Basin Commissions composed of Basin States; and
c) River Authorities or Boards overseeing each drainage basin.[1010]

[1003] Ibid.
[1004] Ibid, para 9.
[1005] Ibid, para 10.
[1006] Ibid, para 11.
[1007] Ibid, para 12.
[1008] Ibid, para 13.
[1009] Article 2 of the 1995 SADC Protocol.
[1010] Ibid.

A financial and regulatory framework for the River Basin Management Institutions referred to in Article 2 is provided for as an annexed part of the Protocol, and further detailed by the 2000 Revised Protocol. According to the revised Article 2, the States recognize: 1) the unity and coherence of each shared watercourse; and 2) that utilization of shared watercourses shall be open to each watercourse State on an equitable and reasonable basis. The objectives of the River Basin Management Institutions are provided for in Article 3 of the 1995 SADC Protocol. These obligations are:

a) to develop a monitoring policy for shared watercourse systems;
b) to promote the equitable utilization of shared watercourse systems;
c) to formulate strategies for the development of shared watercourse systems; and
d) to monitor the execution of integrated water resource development plans in shared watercourse systems.

According to the revised Article 3, the States agreed to respect existing rules of "customary or general" international law relating to shared watercourse utilization and management. Particularly, the States shall individually or jointly protect and preserve shared watercourse ecosystems.[1011] The functions of the River Basin Management Institutions are provided for in Article 4 of the 1995 SADC Protocol. To achieve the objectives set out in Article 3, the River Basin Management Institutions, in consultation with the Member States, are obliged to perform the functions with regard to the following specific tasks. With respect to national water resources policies and legislation, the Institutions are required to take steps to harmonize national policies and monitor compliance with water resource legislation and, where necessary, recommend amendments thereto and introduce new legislation.

According to Article 4, the watercourse States are required to enter into consultations to establish a joint watercourse management mechanism. In utilizing a watercourse, the States are required to take all appropriate measures to prevent causing significant harm to other watercourse States. The State proposing the use likely to cause harm shall take all appropriate measures to eliminate or mitigate the harm and where appropriate, discuss the question of compensation. In the absence of an agreement between the concerned States, the project-proposing State shall not discriminate on the basis of nationality, residence or place of injury in granting (under its own legal system) access to judicial or other procedures or a right to claim compensation or other relief in cases pertaining to the significant harm resulting as a consequence.[1012]

[1011] Article 3(3).
[1012] The provisions are further revised adding the duty to notify and negotiate.

According to Article 4, as revised in 2000, the Member States are required to *notify* the watercourse States as to which planned measures may have a "significant adverse effect," and negotiate if necessary as to the possible effects of planned measures on the condition of a shared watercourse.

In the event of any emergency situation occurring within its borders, a State shall notify without delay: 1) other Potentially Affected States; 2) the Community Water Sector Coordinating Unit; and 3) competent International Organizations.

The Parties are required to supply information to these affected Parties with a "view to cooperate" in the prevention, mitigation and elimination of the emergency's harmful effects. Another task of the institutions is research, information and data handling relevant to the integrated development of water resources.[1013] The institutions shall collect, analyze, exchange and disseminate, assessing the Member States concerning their achievements toward the above-mentioned relevant tasks.

A further task includes the review of the provisions of their National Development Plans (NDP) relating to watercourse systems. The 1995 SADC Protocol makes it clear that in designing and conducting studies, research and surveys relating to environmentally sound development and management plans, the institutions are responsible for stimulating public awareness and participating in sound management and development of the environment, including "human resources development."[1014] In promoting NDP, the institutions shall formulate integrated master plans for shared watercourse systems. With respect to utilization including control of shared watercourse systems, the institutions are required to make regulations in regard to the flow in the basin and promote measures of flood and drought mitigation.[1015]

In integrating these tasks, further measures required by the 1995 SADC Protocol oblige Member States to take measures to control desertification, soil erosion and sedimentation. This requires a highly integrated approach to shared water management, including monitoring the utilization of water and agriculture, domestic, industrial and navigational purposes, and the establishment of hydroelectric power installations and the generation of hydroelectric power.

The task of the institutions with regard to environmental protection is to promote measures for environmental protection and the prevention of all forms of degradation arising from the utilization of the resources of the shared watercourse systems, as well as assist Member States in the establishment of a list of substances whose introduction into the waters of a shared watercourse system is to be banned or controlled. The institutions

[1013] These provisions are similar to those in Article 5 of the 1992 ECE Helsinki Convention.

[1014] This is a noteworthy aspect of the 1995 SADC Protocol, in that it includes human resource development.

[1015] It takes an integrated perspective concerning flood and drought mitigation.

are obliged to make environmental impact assessments as to development projects within the shared watercourse systems and monitor the effects on the environment and on water quality arising from navigational activities.[1016]

Finally, it is the task of the institutions to monitor the hydro meteorological program, promoting monitoring of such a program in consultation with other SADC sectors. The 2000 Revised Protocol establishes several organs responsible for implementation of the Protocol, including: 1) A Committee of Water Ministers; and 2) A Water Sector Coordinating Unit. Article 5, paragraph 1, of the Protocol also permits watercourse States to enter into agreements applying the Protocol's provisions, therefore the 1995 SADC Protocol is regarded as a framework in reaching subsidiary agreements.

12.5. Dispute Settlements

The overall objective of the 1995 SADC Protocol and the 2000 Revised Protocol, is to foster closer cooperation for judicious, sustainable and coordinated management in the protection and utilization of shared watercourses of the region. Just as with the ZACPLAN, the 1995 SADC Protocol aims at dispute avoidance rather than dispute resolution. However, the States that are party to the 1995 SADC Protocol have agreed to undertake obligations to respect existing rules of customary or general international law relating to shared watercourse utilization and management. This means that dispute settlement can be done by and through one or the other means of peaceful settlement that are available under Article 33 of the UN Charter and the Statute of the ICJ, or arbitration. It should be, however, noted that no rules of international law obliges the parties to accept third party settlement.

A noteworthy provision of the 2000 Revised Protocol is that in the absence of a contrary agreement between the concerned States, a watercourse State causing harm shall not discriminate against judicial remedies to the victims on the basis of nationality, residence or place of injury, under its legal system. This provision includes access to judicial or other procedures or a right to claim compensation or other relief in respect to significant harm. This means that national courts can be used for the settlement of disputes in Southern Africa. This is similar to the 1971 Finnish-Swedish Frontier River Agreement concerning dispute settlement.

12.6. Appraisal

Summarizing the evolution of the legal regime of international watercourses and their interrelationships through the 1995 SADC Protocol and revision (2000), there are two important points to be noted. This

[1016] This is an another noteworthy aspect of the 1995 SADC Protocol recognizing the environment and water quality problems arising from navigational use as well as non-navigational uses.

Protocol is one of the few treaties recognizing an international watercourse as a "system", taking into account the hydrological unity of the basin as a single unit. It also recognizes such a system of international watercourses as a "shared resource" of the respective basin States. On the whole, the 1995 SADC Protocol recognizes the principle of equitable utilization and sustainable development as a governing principle of the regimes of uses and protection of international watercourses. These are the key principles harmonizing the regimes of international watercourses. By recognizing the principle of equitable utilization, the 1995 SADC Protocol and its revision (2000) has not only been made consistent with the 1997 UN Convention, but it has also enhanced the modern principle of equitable utilization embodied in that convention.

The importance of all this is the recognition of sustainable development, irrespective of the kinds of uses of a given international watercourse. Even though there may be an obvious difference in practical implementation case by case, the 1995 Mekong Agreement and the 1995 SADC Protocol are the two international watercourse treaties indicating that the developing riparian States of Asia and Africa recognize the principle of equitable utilization and sustainable development. This is a similar approach to the one taken by the Parties to the 1992 ECE Helsinki Convention. By including the main elements, the SADC Countries have adopted an integrated approach.

CHAPTER 13: AMAZON WATER BASIN

13.1. Introduction

The Amazon River basin includes the riparian States Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela. The legal regime of the Amazon River initially came into existence in the 1940's, and progressed further in the 1970's, i.e. the 1978 Amazon Treaty,[1017] which was previously discussed.[1018] An additional development and enhancement of this regime was made in the 1990's via the 1998 Peru-Ecuador Treaty, which is the focus of this section.

Since the 1990's, the awareness of environmental concerns has increased worldwide, and the piecemeal natural resource use-oriented approach of the riparian States began to change, moving towards a holistic harmonized and integrated legal approach. The harmonization of the legal regimes of navigational use and non-navigational uses emerged in the riparian State treaty practices as well as the legal doctrine, leading to integration between the regimes of uses and protection of international watercourses.

By the late 1990's, the riparian States treaty regime evolved much further, integrating the regimes of international watercourses. This involved not only the legal issues of trade with freedom of navigation on inland waterways and overland transit, ensuring the freedom of commerce, but also the issues of the use of waterways for tourism and issues concerning human health.

For the purposes of the present study, we will examine a case related to trade, navigation and tourism, a case study from one of the South American international rivers, which will serve to demonstrate the interrelationships between the regimes. This also highlights the legal arrangements between States utilizing international rivers as waterways in order to exercise the access to and from the sea.

13.2. Concepts and Approaches

Peru and Ecuador signed the Treaty of Trade and Navigation in October 26, 1998 (hereinafter referred as to the "1998 Treaty").[1019] Article VI of the 1942 Rio Protocol recognized the right of the riparian States for navigation on the Amazon Rivers. The over all Amazon regime is governed by the 1978 Amazon treaty. Therefore, the 1998 Treaty is based on the concept and approaches adopted by the 1978 Amazon Treaty. However, the 1998 Treaty widens the scope of the earlier treaty, extending it to navigation, trade and tourism as well as establishing the concept of multimode transport, i.e. land, water and air. One has to keep in mind that the 1978 Amazon Treaty has adopted the basin concept, which needs to be taken into consideration

[1017] See< http://www.internationalwaterlaw.org/<(visited Nov. 12, 2004).
[1018] See, Part III, Chapter 7.
[1019] LS No.0190352 JF/AM, Spanish and for English translation see 38 *ILM*, 1999, p.266.

in the application of the concepts of trade with freedom of navigation on inland waterways and overland transit and ensuring the freedom of commerce.

13.3. Substantive Principles

The 1998 Treaty does not contain any new substantive principles, rather it reiterates the freedom of navigation. One must not forget that the substantive principle of equitable distribution of benefit adopted by the 1978 Amazon treaty remains applicable as to the whole basin. Article 1 of the 1998 Trade and Navigation Treaty provides for the rights of Ecuador for purposes of trade and peaceful navigation on the Amazon and its northern tributaries. The freedom of navigation on international rivers and its tributaries was recognized in the *River Oder Case*.[1020] Article 2 of the 1998 Treaty deals with the trade between Peru and Ecuador, facilitating navigation in inland waterways in the borders of Peru and Ecuador, establishing a regime of border crossing. The 1998 Trade and Navigation Treaty recognizes not only the right of navigation through inland waterways but also overland transit, as stated in its Article 2:

> Ecuador shall enjoy the right of overland transit via the corresponding public access route, either those currently in existence or those to be built in the future, that connect Ecuadorian territory to river points authorized for the loading and unloading of goods on the rivers to which this Treaty refers.[1021]

The entitlement of use of inland waterways, and overland transit for Ecuador is based on non-discrimination, free of charge in perpetuity. Article 3 reaffirms the validity of the 1978 Amazon Treaty. This clearly implies that the 1998 Trade and Navigation Treaty is intimately intertwined to the 1978 Treaty, including the regimes of international watercourses in an integrated perspective. In regard to coastal navigation, both military and non-military, the 1998 Treaty recognizes national laws and customary international practices as the governing rules.[1022] Recognizing the flag of vessels, the appropriate Ecuadorian authority shall notify the appropriate Peruvian authority of the lists of Ecuadorian-flag vessels, operating under the 1998 Treaty.[1023] Vessels of both countries, availing themselves of the right to free navigation, are supposed to receive equal treatment,[1024] including cargo originating from and to a third country, regardless of

[1020] See, Part VI.
[1021] See, 38 *ILM*, 1999, p.266.
[1022] Article 4.
[1023] Article 5.
[1024] Article 6.

whether it is being transported overland, by inland waterway, or air, and regardless of nationality of the vehicles, vessels, or aircraft being used.[1025]

Small crafts navigation, used extensively by the inhabitants of the border areas between Peru and Equator, are also authorized for the purposes of trading, in effect recognizing local practices and customs.[1026] The Parties, according to the 1998 Treaty, can charter vessels of a third country for inland water transportation, and these vessels will be considered to have equal status to the flag vessels of the chartering Party. They shall enjoy the same facilities as flag vessels, provided that the charter contract is registered with the authorities of the respective Parties.[1027] The vessels of Peru and Ecuador are free to transport passengers, cargo, and mail, i.e. from Ecuador, through Peru, to third countries, and to Ecuador, through Peru from third countries. Such transshipment may be carried out at any authorized inland waterway port, thereby exercising the right of commercial navigation.[1028] The cargo shipment is not subject to any reservation rules and Ecuadorian-flag vessels are not required to join any liner conferences.[1029] Flag vessels of both countries are subject to immigration, health and cargo documentation rules.[1030]

With regard to multimode transport, special consideration is given to air transport in the 1998 Treaty.[1031] An important feature of the 1998 Treaty is that it recognizes the 1965 Convention on Facilitation of International Maritime Traffic (FAL) of the International Maritime Organization (IMO). This is the applicable convention regarding the appropriate authorities with which Peru and Ecuador should coordinate, for the simplification and standardization of documents and procedures relating to reception and clearance of the vessels, passengers, cargo and crew.[1032] The vessels of the both countries are supposed to enjoy the same treatment in terms of supply of fuel, port and health services, communications facilities, navigational aids, and other services such as port entry and departure.[1033] The goods in transit are not subject to the payment of customs duties and inspection, provided Peruvian authorities have cleared them.[1034] None of the provisions of the 1998 Treaty give rise to any exception of charges of fees or payments for services.[1035] Ecuadorian vessels on Peruvian rivers may be

[1025] Article 7.
[1026] Article 8.
[1027] Article 9.
[1028] Article 10.
[1029] Articles 11 and 12 respectively.
[1030] Article 21.
[1031] Article 20.
[1032] Article 13.
[1033] Article 14.
[1034] Articles 23 and 30.
[1035] Article 32.

required to use a local pilot for entering and leaving a port in Peru.[1036] For the non-discretionary treatment the 1998 Treaty provides that:

> Bearing causes that cannot be attributed to port operations and on a non-discrimitory basis, waiting times form the start of loading, unloading, and for the completion of administrative formalities in Peruvian port facilities may not exceed three calendar days for permissible or easily damaged goods or seven calendar days for ordinary cargos.[1037]

As to the security of navigation on the rivers, the Parties of the 1998 Treaty shall inform each other about the navigable sections of the rivers mentioned in the treaty.[1038] The authorities in Peru and Ecuador shall help and provide rescue assistance to each other's flag vessels in inland waters, in accordance with the international practice applying to sea-going vessels.[1039] According to Article 19 of the 1998 Treaty, both Peru and Ecuador, in their respective territories, are obliged to apply rules with respect to security, protection of the inland waterway environment, and pollution by vessels and collisions, without any discrimination. They are also obliged to inform each other about the existing rules on these matters.[1040]

13.4. Implementation Mechanisms

The 1998 Treaty establishes two Centers of Trade and Navigations for 50 years as a private firm registered in Ecuador, intended for the storage, processing and marketing of goods in transit from or to Ecuadorian territory. The Centers are the subject to renewal by the Parties. The government of Peru shall assign to their Ecuadorian counterpart, for administrative purposes, providing them with appropriate licensed contracts.[1041] The Centers of Trade and Navigations are governed under Peruvian law, according to the 1998 Treaty. For each Center, Ecuador shall accredit its Agent to the Ministry of Foreign Affairs of Peru, having facilities and diplomatic immunities.[1042] Article 31 of the 1998 Treaty provides that:

> In the application of this Treaty, provisions and measures relating to law enforcement and inspection, health, environment protection, migration, and in general, crime prevention and suppression, established under Peruvian law shall apply to the nationals and goods of both countries

[1036] Article 15.
[1037] Article 16.
[1038] Article 17.
[1039] Article 18.
[1040] Article 19.
[1041] Articles 22, 25, 26, 27 and 28.
[1042] Article 29.

without discriminations, provided that freedom of navigation and transit is no way impaired.[1043]

This is an important provision harmonizing the protection of environment and freedom of navigation on the one hand, and harmonizing the applicable laws, which recognize Peruvian laws applicable to Ecuadorian nationals and goods on the other hand. In case of emergency, the Parties may take measures of a general nature for temporary suspensions of the exercise of navigation and overland transit on the basis of nondiscrimination.[1044] An interpretation of the 1998 Treaty should not result in its non-application,[1045] recognizing the most favored nation clause, reciprocity with respect to inland water transport.[1046]

13.5. Dispute Settlement

A Peru-Ecuador Commission on Trade and Navigation established under the 1998 Treaty is responsible for the settlement of disputes that may arise with regard to the treaty.[1047] According to the 1978 Treaty, the Amazonian Cooperation Council is responsible for the overall cooperation between the basin States, which is focused more on the prevention of dispute through cooperation rather than post-dispute settlement. This means that Amazon cooperation is based on the foundation that equitable and mutual benefit can be achieved by suitable bilateral or multilateral agreements, including trade and tourism.

13.6. Appraisal

The case study of the Amazon water basin shows that the regimes of uses and protection of the basin established in the 1970's progressed further by the 1998 Treaty between Peru and Ecuador. Along with other selected case studies of the treaties concluded in the 1990's, the 1998 Treaty between Peru and Ecuador vindicates the objectives of the study positively, in the sense that navigational use and non-navigational uses are interrelated in terms of economic importance; in this case the economic importance of navigation and tourism are considered as equal. This treaty applies to security interests of the host riparian State, the protection of environment of inland waterways, including pollution caused by vessels. Since the late 1990's, a similar legal arrangement linking navigation with trade and tourism has been a negotiation point for the parties to the Mekong regime, which may lead to the Peru-Ecuador model being applied to the Mekong regime.

[1043] Article 31.
[1044] Article 33.
[1045] Article 34.
[1046] Articles 35 and 36.
[1047] Articles 37 and 38.

Summarizing the legal regimes of trade and navigational use of international river established by the 1998 Treaty, the following points should be taken into consideration. As an integral part of the 1978 Treaty of Amazonian Cooperation, the 1998 Treaty recognizes the freedom of navigation for the purpose of trade and peaceful navigation, recognized warships to be governed by the national laws and by customary international law. The treaty recognizes not only right of navigation through inland waterways but also overland transit, including multimode transport, adopting the principle of non-discrimination. The small craft navigation used by border area inhabitants of Peru and Ecuador are authorized to navigate for purposes of trade. This arrangement respect local practices and customs in exercising the freedom of navigation and trade.

The treaty also recognizes the applicable international conventions for simplification and standardization of documents of shipping. It establishes two Centers of Trade and Navigations as a private firm located in Peru, and furthermore, the 1998 Treaty recognizes the national law of Peru as applicable law. Article 19 of the 1998 Treaty requires Peru and Ecuador to apply rules with respect to security, protection of the inland waterway environment, pollution by vessels and collisions, on a non-discriminatory basis. Apart from this, Article 31 of the 1998 Treaty is of particular relevance to an integrated legal regime, including a wide range of provisions and measures relating to law enforcement, inspection, health, environment protection, migration, and crime prevention and suppression.

Despite the fact that the 1998 Treaty is about trade and navigation, the above-mentioned issues take an integrated legal perspective with regard to navigation and environment. It should be reemphasized that in its recognition of Peruvian law as the applicable law (in cases related to the nationals and goods of both countries on international rivers), the 1998 Treaty provides that in applying these laws, freedom of navigation and transit should not impaired. In addition, the two Centers regulating trade and navigation, the 1998 Treaty establishes a Peru-Ecuador Commission, which is responsible for the settlement of disputes between the Parties.

Exploring the legal regimes through the riparian State treaties of different continents, we have found out that some treaties deal with the regime of navigational use, while others deal with the regime of non-navigational uses. Still, others deal with the regimes of uses and protection in a simultaneous manner.

Up until the late 1990's there was a lack of an international framework convention dealing with the regimes of uses and protection in an integrated manner. The 1815 Final Act of the Congress of Vienna sparked the initial development of the legal regime of navigational use of international rivers,[1048] and the Statute annexed to the 1921 Barcelona Convention on the Regime of Navigable Waterways of International Concern further refined it.[1049] The first worldwide treaty regularizing the non-navigational uses of international rivers was the 1923 Geneva Convention Relating to the Development of Hydraulic Power Affecting More than One State,[1050] but it failed to achieve its objective because it never entered into force, due to lack of necessary ratifications.

Recognizing the need for a global convention, the international community began in the 1950's to take initiatives for the development and codification of the law of international watercourses. The works of the ILA and the ILC in this respect has been discussed in detail in previous chapters. On the basis of a draft prepared by the ILC, the General Assembly adopted in 1997 the UN Convention on the Law of the Non-Navigational Uses of International Watercourses (hereinafter referred to as the "1997 UN Convention").[1051]

This is a framework convention, providing rules for the use allocation, protection and improvement of international watercourses. The 1997 UN Convention is the first global convention of its kind, marking the modern

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[1048] The Final Act of the Congress of Vienna 9 June 1815, see *MNRGT*, 2, 427; Oakes and Mowat, (*GETNC*) 1918, p.37.

[1049] The First General Conference on Freedom of Communication and Transit was held in Barcelona in 1921, which among others, adopted the rules for the organization of General Conference on Communication and Transit, and formed the Advisory and Technical Committee, see League of Nations, General Conference on Freedom of Communications and Transit, Official Instruments approved by the Conference, C.15.M.10.1021.VIII.

[1050] League of Nations, General Conference on Freedom of Communications and Transit, Record and Text, 1924, C.30.M.16.1924.VIII, Annex, 1, p.80.

[1051] Pursuant to paragraph 2 of the UN General Assembly Resolution 51/206 of December 17, 1996, the Working Group of the Whole of the Sixth Committee was convened under GA Resolution 49/52 of December 9, 1994, held its second session from March 24 to April 4, 1997, to elaborate the Convention on the Law of the Non-navigational Uses of International Watercourses. The General Assembly adopted the draft resolution on a Convention on the Law on Non-Navigational Uses of International Watercourses, Document A/51/L.72, by a recorded vote of 103 in favor to 3 against, with 27 abstentions. UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*, 1997, p.700.

evolution of the various legal regimes, and establishing interrelationships between these regimes. Though its title implies a narrower scope (non-navigational uses), the 1997 UN Convention is a global legal instrument directly relevant to the legal regimes of navigational use, non-navigational uses and environmental protection.

CHAPTER 14: UN CONVENTION ON THE LAW OF THE NON-NAVIGATIONAL USES OF INTERNATIONAL WATERCOURSES

14.1. Introduction

In order to explore the legal regimes of the 1997 UN Convention, this chapter first focuses on the title and scope of the Convention, taking into account the legal regimes of navigational use and non-navigational uses. This will be followed by a short account on the concepts and approaches adopted in the 1997 UN Convention. The following discussion will be on the framework character of the Convention, in relation to situations where there is an absence of treaties, as well as in cases where there are pre-existing riparian State treaties. Subsequently, the provisions of the regime of multiple uses that have been established by the Convention as well as a discussion of the substantive principles and its criteria for establishing multiple regimes will be then addressed. The study also touches upon the assorted provisions of the 1997 UN Convention which integrate the equitable utilization and no-harm rule, on one hand, and protection and improvement of international watercourses, on the other. Finally, the legal regimes established by the 1997 UN Convention in terms of the concept of sustainable development integrating the legal regimes of uses and protection will be examined.

14.1.1. Title and Scope

At the outset it should be noted that the title of the 1997 UN Convention is important for the exploration of the legal regimes of navigational use, non-navigational uses and environmental protection of international watercourses. The scope of the 1997 UN Convention is established in Article 1, which covers all uses but navigational use is excluded. Still, under the 1997 UN Convention the navigational use is connected with the non-navigational uses, insofar as one regime affects the other.

If the Convention were entitled, for instance, the Convention on the Multiple Uses and Protection of International Watercourses, navigation would of course fall within the purview of multiple uses. If instead the title were the Convention on Consumptive Uses of International Watercourses, navigational use would also fall within the parameters of such a convention. Navigational use is often not seen as a consumptive use, but in reality, as a certain quantity of water is necessary for navigational use, diversion of water for other uses has direct impacts on navigation. Navigational use clearly consumes water, even though it isn't a tangible consumptive use. An example of this is the Farakka Barrage case.

Apart from its title, the scope of the 1997 UN Convention, as proscribed in Article 1, covers the interrelationships between navigational use and non-navigational uses including relationships between multiple uses, protection and improvement of international watercourses. Article 1 states:

(1) The present Convention applies to uses of international watercourses and of their waters for the purposes other than navigation and to measures of protection, preservation and management related to the uses of those watercourses and their waters.
(2) The uses of international watercourses for navigation is not within the scope of the present Convention except insofar as other uses affect navigation or are affected by navigation.[1052]

Despite the clearly stated intention, in Paragraph 1, to separate navigational use from the non-navigational uses, Paragraph 2 clearly allows for inclusion of navigational use of international watercourses within the scope of the Convention. Overall though, the 1997 UN Convention concerns itself with the non-navigational uses of international watercourses. The recognition in Paragraph 2 of the relationship between navigational and non-navigational uses, is established through the phrase "insofar as other uses affect navigation or are affected by navigation."

Apart from tacitly interlinking the regime of navigational use and non-navigational uses, Paragraph 1 elicits the regime of protection, preservation and management of watercourses, in other words, the environmental protection of international watercourses. Evidently, Article 1 of the 1997 UN Convention elicits the three salient regimes of international watercourses, navigational, non-navigational and protection.

It appears, from the ILC reports, that from its conception to its inception, in discussions regarding Article 1 of the 1997 UN Convention, navigational use and non-navigational uses were treated as intertwined issues. The 1959 UN General Assembly Resolution 1401(XIV), which can be seen as the point of departure for the codification of the modern law of international watercourses, requested the International Law Commission "to initiate preliminary study on the legal problems relating to the utilization and use of international rivers with a view to determine whether the subject is appropriate for codification."[1053]

Resolution 1401(XIV) also referred to the need for the study of the issues relating to the utilization of international rivers. However, the report envisaged in the operative part of Resolution 1401(XIV) has excluded reference relating to navigation,[1054] limiting the study to the regime of non-navigational uses. Particularly, Paragraph 1 of the 1970 General Assembly Resolution 2669 (XXV), recommending to the International Law

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[1052] The 1997 UN Convention,UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*, 1997, p.700.
[1053] *YILC*, 1974, Vol.II,Part Two. Resolution 2669 (XXV) requested to continue study initiated in accordance with General Assembly resolution 1401(XIV) to prepare a supplementary report "taking into account the recent application in State practice and international adjudication of the law of international watercourses and also intergovernmental and non-governmental studies of this matter."
[1054] *YILC*, 1974, Vol.II, Part Two, p.50.

Commission to take up the study of the non-navigational uses of international watercourses, clearly distinguished navigational use from non-navigational uses. It was suggested that:

> The International Law Commission should, as a first step, take up the study of the law of the non-navigational uses of international watercourses with a view to its progressive development and codification and, in the light of its scheduled program of work, should consider the practicability of taking the necessary actions as soon as the Commission deems it appropriate.[1055]

The ILC does not seem to have taken "a position whether a particular article or paragraph of one of its articles is a codification of international law or an effort to progressively develop that law."[1056] However, from the above-mentioned reference, it is clear that the navigational use was explicitly excluded in the above-mentioned resolution. Both the ILC Draft and Article 1 of the 1997 UN Convention recognize the relationships between the regimes, providing an interface between the regimes of navigational and non-navigational uses as well as between uses and protection of international watercourse. The reasons for such a recognition, as well as consequences of such an interface between the three regimes can be seen in the relevant preparatory works of the ILC.

After nearly three decades of work, the ILC adopted in 1994 the Draft Articles on the Law of the Non-Navigational Uses of International Watercourses, including a commentary to each of the Draft Articles.[1057] In its 1994 Report, the ILC's commentary to Article 1 reads:[1058]

> (1) The term 'uses' as employed in article 1 derives from the title of the topic. It is intended to be interpreted in its broad sense, to cover all but navigational uses of an international watercourse, as indicated by the phrase 'for the purposes other than navigation.'[1059]

It is clear from this statement that Article 1 is broad, focusing on the regime of non-navigational uses of international watercourses, and specifically excluding navigation. However, Paragraph 4 of the commentary (see below) recognizes the relationships between the regimes of navigational and non-navigational uses.

[1055] *YILC*, 1971, Vol.II, Part One, p.350, para 119.
[1056] McCaffrey, "The Contribution of the UN Convention", 2001, pp.250-263.
[1057] The 1994 Draft of the ILC formed the basis for elaboration and adoption of the 1997 UN Convention.
[1058] *Report of the ILC on the work of its forty-second session* UNGAOR, 49th Session, Supp.No.10, at 197, UNDoc.A/49/10.
[1059] *EPL*, 24/6, 1994, pp.335-368.

Paragraph 1 of the commentary adds "questions have been raised from time to time as to whether the expression 'international watercourse' refers only to the channel itself or includes also the waters contained in that channel." According to this commentary:

> (2) In order to remove any doubt, the phrase 'their waters' is added to the expression 'international watercourses' in paragraph 1. The phrase 'international watercourses and of their waters' is used in paragraph 1 to indicate that the article apply both to uses of the watercourse itself and to uses of its waters, to the extent that there may be any difference between the two. References in subsequent articles to an international watercourse should be read as including the waters thereof. Finally, the present articles would apply to uses not only of waters actually contained in the watercourses, but also of those diverted therefrom.[1060]

The ILC's commentary underlines that Article 1 applies both to uses of the watercourse itself and to uses of its waters to the extent that there may be any difference between the two. In addition, as to the protection and management of international watercourses, the ILC's commentary provides that:

> (3) The reference to "measures of convention and management, related to the uses of" international watercourses is meant to embrace not only measures taken to deal with degradation of water quality, notably uses resulting in pollution, but also those aimed at solving other watercourse problems, such as those relating to living resources, flood control, erosion, sedimentation and saltwater intrusion.[1061]

Article 1 of the 1997 UN Convention is reminiscent of the ILC's questionnaire (see below) addressing to the UN Member States. On this particular topic, the questionnaire inquired as to whether the problem of water quality should be considered. The replies from the Member States expressed that, on the whole, they should be, specifically regarding the problems of pollution protection of living resources, flood control, erosion, sedimentation and saltwater intrusion. The commentary further suggests that:

> The expression 'measures of conservation and management' are the various forms of cooperation, whether or not institutionalized, concerning the utilization, development, conservation and management of international watercourses, and promotion of the optimal utilization thereof.[1062]

[1060] Ibid.
[1061] Ibid.
[1062] Ibid.

As mentioned earlier, Paragraph 4 of the ILC's commentary relating to Article 1 of the 1997 UN Convention is relevant to show the intertwined evolution of the regimes of international watercourses. In particular, it states:

> (4) Paragraph 2 of article 1 recognizes that the exclusion of navigational uses from the scope of the present articles cannot be complete. As both the replies of States to the Commission's questionnaire and the facts of the uses of water indicate, the impact of navigation on other uses of water and that of other uses on navigation must be addressed in the present articles. Navigation requirements affect the quantity and quality of water available for other uses. Navigation may and often does pollute watercourses and requires that certain levels of water be maintained; it further requires passages through and around barriers in the watercourse.[1063]

This commentary recognizes that a complete separation between the two regimes does meet the aims of Article 1 of the 1997 UN Convention. Thus, in the following part of the commentary, which examines Paragraph 4, it is further recognized that:

> The interrelationships between navigational and non-navigational uses of watercourses are so numerous that, on any watercourse where navigation takes place or is to be instituted, navigational requirements and effects and the requirements and effects of other water projects cannot be separated by the engineers and administrators charged with development of the watercourse. Paragraph 2 of Article 1 has been drafted accordingly. It has been negatively case, however, to emphasize that navigational uses are not within the scope of the present articles except in so far as other uses of waters affect navigation or are affected by navigation.[1064]

Paragraph 5 of the ILC's commentary related to Article 1 of the 1997 UN Convention notes the suggestion of one of the members of the Commission that:

> (5) in the absence of a homogeneous criterion for identification, the uses of an international watercourses for non-navigational purposes could be identifiable in terms of three criteria: their nature (industrial, economic or private), the technical character of the works or the means utilized

[1063] Ibid.
[1064] Ibid.

and the linkage of initiating such undertakings to the jurisdiction or control of a watercourse State.[1065]

The above mentioned ILC commentary justifies the notion found in Article 1 that navigational use of international watercourses is excluded from the scope of the 1997 UN Convention. At the same time, Article 1(2) provides an interface between the navigational use and non-navigational uses. This kind of tactical recognition, or recognition by negation, of the regime of navigational use with the regimes of non-navigational uses in the 1997 UN Convention, raises interesting questions. The answers to these questions may be found in the 1974 questionnaire of the ILC, which laid the groundwork for the drafting of Article 1. At one point in the text of the ILC questionnaire relevant to Article 1, the Member States were asked:

G. Should the Commission take into account in its study the interaction between uses for navigation and other uses?
H. Are you in favor of the Commission taking up the problems of pollution of international watercourses as the initial stage in its study?[1066]

[1065] Ibid.

[1066] By a circular dated January 21, 1975, the UN Secretary General invited the Member States to communicate to him, if possible by July 1, 1975, the comment on the ILC's questionnaire referred to in the General Assembly Resolution 3315(XXIX), Document A/CN.4/294 and Add.1. See also para 6 of *YILC*, 1976, Vol.II, Part One, p.150. The text of the questionnaire is as follows:
A. What would be the appropriate scope of the definition of an international watercourse, in a study of the legal aspects of fresh water uses on the one hand and of fresh water pollution on the other hand?
B. Is the geographical concept of an international drainage basin the appropriate basis for a study of the legal aspects of non-navigational uses of international watercourses?
C. Is the geographical concept of an international drainage basin the appropriate basis for a study of the legal aspects of the pollution of international watercourses?
D. Should the Commission adopt the following outline for fresh water uses as the basis of the study:
(a) Agricultural uses:
(1) Irrigation;
(2) Drainage;
(3) Waste disposal;
(4) Aquatic food production;
(b) Economic and commercial uses:
(1) Energy production (hydroelectric, nuclear and mechanical);
(2) Manufacturing;
(3) Construction;
(4) Transportation other than navigation;
(5) Timber floating;
(6) Waste disposal;
(7) Extractive (mining, oil production, etc.)
(c) Domestic and social uses:
(1) Consumptive (drinking, cooking, washing, laundry, etc.);
(2) Waste disposal;

According to the ILC Report, response to the questionnaire was *scanty* - they received responses from only 21 States.[1067] The Special Rapporteur, Richard D Kearney notes that some Member States had expressed their view to include problems of pollution of international watercourse at the initial stage of the study and the others wanted to deal with it at a later stage. Nonetheless, there appeared to be a consensus to include the problem of pollution of international watercourses in the ILC's study as well as in the Convention on International Watercourses. With regard to the response of the Member States, regarding question G, the Report the Special Rapporteur notes that there was "a consensus among responding States that the ILC had to provide the interface between navigation and other uses of fresh water."[1068] In response to question G, some States pointed out the practical legal difficulties regarding the interaction between navigational use and non-navigational uses of international watercourses, though no theoretical objection seems to have been raised. For example, some States held the view that:

> 1) The examples given do not represent clearly the relationship between the use of water for shipping and for other purposes. Shipping takes priority over the other uses of water, even the production of energy as it is regulated in Article 8 of the Convention Relating to the Development of Hydraulic Power Affecting More than One States signed on 9 December 1923. It should also be taken into consideration that "Each riparian States is bound to refrain from all measures likely to prejudice the navigability of the waterways, or to reduce the facilities for navigation"- as is stipulated in Article 10, Paragraph 1, of the Statute annexed to the Barcelona Convention of 20 April 1921 on the regime of navigable waterways of international concern.[1069]

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(3) Recreational (swimming, sport, fishing, boating etc.);
E. Are there any other uses that should be included?
F. Should the Commission include flood control and erosion problems in its study?
G. Should the Commission take into account in its study the interaction between uses for navigation and other uses?
H. Are you in favor of the Commission taking up the problems of pollution of international watercourses as the initial stage in its study?
I. Should special arrangement be made for ensuring that the Commission is provided with the technical, scientific and economic advice which will be required, through such means as the establishment of a Committee of Experts?"

[1067] The States that replied to the questionnaire were: Argentina, Austria, Brazil, Canada, Colombia, Ecuador, Finland, France, Federal Republic of Germany, Hungary, Indonesia, Netherlands, Nicaragua, Pakistan, Philippines, Poland, Spain, Sweden, United States of America and Venezuela. Replies of the Governments to the Commission's questionnaire see Document A/CN.4/294, and Add.1. *YILC*, 1976, Vol.II, Part One, pp.149-183.

[1068] *First Report on the Law of the Non-navigational Uses of International Watercourses* by Richard D Kearney, Special Rapporteur, Document A/CN.4/295, see *YILC*, 1976, Vol.II, Part One, p.191.

[1069] Ibid, Hungary's response to Question G, p.177.

The argument presented in the above example has some strength from the positivist point of view of jurisprudence. Since the 1921 Barcelona Convention and the 1923 Geneva Convention had already recognized the priority of navigational use against non-navigational uses, the Parties to the Convention are bound to recognize the existing law, which means that,

> Although the International Law Commission has been entrusted with the study of the law of the non-navigational uses of international watercourses, it should be understood that the Commission must respect the existing rules regarding international river navigation and that it will consequently have to take account, in its study, of those rules and the interaction between navigational and other uses, to avoid any conflict between rules, in other words, to ensure that freedom of navigation on navigable international watercourses is not jeopardized.[1070]

Quite opposite to the above mentioned view, some States held that in any future codification, non-navigational uses should be prioritized against navigational use on the grounds that "for technical or geopolitical reasons, a non-navigational priority should be given to an international watercourse, the State involved could enter into new agreements or conventions."[1071] The justification for integration of navigational use and other uses was highlighted in the terms of reference used by the Commission. As mentioned before, navigation was excluded from the terms of reference; but this did not, however, mean that all aspects concerning it were considered outside the scope of the work of the International Law Commission. Noteworthy was the view of the Government of Finland, which expressed that the exclusion of navigational use from non-navigational use concerns only the freedom of navigation and rights and obligations of flag States, as well as vessels.[1072] Nevertheless, the other aspects of the navigational use (e.g. its impact on the environment) influencing the other uses or environmental protection are still interrelated. Juxtaposing the priority of one kind of use against the others, States also responded to the Commission's questionnaire (question G) with the following:

> (1) In building dams, bridges, etc., account should be taken of the necessity of free passage for vessels and their dimensions i.e. bridge span and height, seize of dam locks etc.;

[1070] Ibid, Ecuador's response to Question G appears to be similar to Hungarian response, p.176.
[1071] Ibid, Venezuela held a view contrary to Hungary and Ecuador, p.177.
[1072] Ibid, Finland's response to question G, p.176.

(2) Water pollution or contamination should be prohibited in rivers usually used for drinking and irrigation; and
(3) Dams and hydroelectric power installations should not impede the navigable course of the river (course, depth, and width).[1073]

The State response also indicated the land-locked States' position in interrelating navigational use with the non-navigational uses.[1074] For the land-locked States in particular, the freedom of navigation on international rivers recognized by the 1815 Final Act of the Congress of Vienna, and the right of access to and from the sea provided in the 1982 Law of the Sea Convention, appears to be as important as the non-navigational uses of international watercourses. In this context, comments were made from the point of view of a land-locked State, which occupied the area above and below two international river catchments basins in Europe.[1075]

Irrespective of the coastal or land-locked position of the State, the choice of concepts is important in defining the scope of law and determining the relationships of riparian States. The opening questions in the ILC's questionnaire included the following choice of concepts:

A. What would be the appropriate scope of the definition of an international watercourse, in a study of the legal aspects of fresh water uses on the one hand and of fresh water pollution on the other hand?
B. Is the geographical concept of an international drainage basin the appropriate basis for a study of the legal aspects of non-navigational uses of international watercourses?
C. Is the geographical concept of an international drainage basin the appropriate basis for a study of the legal aspects of the pollution of international watercourses?[1076]

Questions A, B and C offered the choice of concepts, between the international river, drainage basin and international watercourse. The determination of the concepts is important in determining the use and protection, and integrating the regimes of international watercourses. In the following, we focus on the responses of the Member States to the ILC's questionnaire, relating to the respondent's view on the integrated perspective regarding key concepts. In their reply to the ILC's questionnaire, some States supported the definition of an international

[1073] *YILC*, 1978, Vol.II, Part One, Sudan's reply, p.260.
[1074] Ibid, Switzerland, p.260.
[1075] Austria's comment, see *YILC*, 1976, Vol.II, Part One, p.150. Austria's attitude toward these problems largely corresponds to the views expressed in paragraph 161, 162 (second sentence), 166 (last sentence), 167 (last sentence) 168 (from third sentence onward), 169 (last sentence), 170, 172 and 175 of the report of the Sixth Committee to the General Assembly at its twenty-ninth session, see *Official Records of the General/Assembly, Twenty-ninth Session*, Annex, agenda item 87, Document A/9897, Chap. III, sect. E.
[1076] *YILC*, 1976, Vol.II, Part One, p.150, para 6.

river,[1077] as provided for in the 1815 Final Act of the Congress of Vienna, and considered that the river concept would include the legal regimes of international watercourses. The other States supported the drainage basin concept for all purposes and uses, which expresses the unity of a watercourse system.[1078] Other States, meanwhile, supported the drainage basin approach only in relation to transboundary pollution, as distinct from pollution confined to some point in the river basin.[1079] In his First Report, the Rapporteur Mr. Stephen Schwebel, in summing up the opinion of the members of the ILC, noted as follows:

> As to the interaction between the use of an international watercourse for navigation and its non-navigational uses, most members who spoke on the matter thought that the use of water for navigation might well affect other uses of water, and vice versa. Navigational uses might result in the pollution of international watercourses. The requirements of navigation affected the quantity and quality of water available for other uses.[1080]

This summary of the opinion of the members of the ILC recognized not only the effects of navigational use upon non-navigational uses, and vice versa, but also environmental effects from multiple uses. In this regard, the Rapporteur went further and gave an example as follows.

> Navigation required that certain levels of water be maintained and that there be passages through or around barriers in the watercourse. Thus the view was held that any draft articles prepared on topic could exclude the navigational uses of international watercourses because of their impact on non-navigational uses. Yet it was maintained that many, if not most, international watercourses were not navigable and that it was mainly to such watercourses that the draft articles prepared on the topic should apply, since the major international rivers were already covered by agreements concluded between the riparian States.[1081]

Regarding navigational use and its effects on non-navigational uses and the environment, Mr. Stephen Schwebel noted that:

[1077] *First Report on the Law of the Non-navigational Uses of International Watercourses* by Mr Richard D Kearney, Special Rapporteur, Document A/CN.4/295, see *YILC*, 1976, Vol.II, Part One, ibid, Brazil, pp.152-153, ibid, Colombia, p.154, Spain, p.160.

[1078] *YILC,* 1976, Vol.II, Part One, See Sweden, p.177, ibid, Argentina, p.185, ibid, the United States, p.160, ibid, Finland, p.155, ibid, the Netherlands, p.158.

[1079] Ibid, Nicaragua, p.158, ibid, the Federal Republic of Germany, p.176, ibid, France, p. 177.

[1080] *YILC*, 1979, Vol.II, Part Two,p.165. A distinction should be made, as one member suggested, between international rivers, which were navigable watercourses and could be used by all States, and multinational rivers, which were not navigable watercourses, and were used only by riparian States.

[1081] Ibid.

> Navigation requirements affect the quantity and quality of water available for the uses. Navigation may and often does pollute watercourses and requires that certain levels of water be maintained: it further requires passages through and around barriers in the watercourse.[1082]

Against this background, Article 1 of the ILC First Draft defines the relationships between the regimes of international watercourses:

> Article 1. Scope of the present articles
> The present articles apply to the uses of the water of international watercourses, and to associated problems such as flood control, erosion, sedimentation and salt water intrusion. The use of the water of international watercourses for navigation is embraced by these articles in as far as provisions of the articles respecting other uses of water affect navigation or are affected by navigation.[1083]

In the above mentioned draft, navigational use of international watercourses is positioned positively with non-navigational uses as indicated by the draft article 1(2) phrase "navigation is embraced by these articles". At its thirty-second session in 1980, the ILC adopted Articles 1 to 6, and it provisionally adopted a draft version of Article 1 as follows:

> 1. The present articles apply to the uses of the water of international watercourse systems and to the problem associated with international watercourse systems, such as flood control, erosion, sedimentation and salt water intrusion.
> 2. The use of water of international watercourses for navigation is within the scope of these articles in so far as provisions of the articles respecting other uses of water affect navigation or are affected by navigation.[1084]

The term "navigation" is embraced as indicated in the proposed draft by the Special Rapporteur. At this stage, it appears that the ILC intended to include the navigational use with non-navigational uses. Pointing out incompatibilities between inclusion and the title of the draft convention, at the 1980 meeting, one member of the ILC argued that, "Draft Article 1, paragraph 2, which referred to the use of water of international watercourses, might be considered incompatible with the title of the topic."[1085] However, the Chairman of the Drafting Committee argued that:

[1082] *YILC*, 1979, Vol.II, Part One, pp.158-159, para 61, Documents A/CN.4/320.
[1083] *YILC*, 1979, Vol.II, Part Two, p.164.
[1084] *YILC*, 1980, Vol.I, p.122, A/CN.4/332 and Add. I.
[1085] Francis, at the 1609th Meeting of the ILC see, *YILC*, 1980, Vol.I, p.137.

> In paragraph 1 of Article 1, the Draft Committee preferred the text 'uses for purposes other than navigation' to the term 'non-navigational uses'. The expression 'measures of conservation related to the uses' was to be understood as referring also to pollution.[1086]

Regarding Paragraph 2 of Article 1, the Chairman of the Drafting Committee further suggested that:

> Paragraph 2 of the original article had recognized that navigational uses affected or were affected by non-navigational uses and should not, therefore, be excluded from the scope of the articles. The new text was drafted so as to bring out clearly the general rule that navigational uses were excluded from the scope of the articles to the extent indicated.[1087]

However, one member of the ILC recognized no contradiction between the two paragraphs, as both were essential for protection of the waterway system referred to:[1088]

> As far as paragraph 2 was concerned, navigation might, for example, be affected by the excessive use of water for irrigation. Conversely, navigation might lead to excessive pollution. There could be no protection in either case unless the provisions of paragraph 2 were applied.[1089]

Another member of the ILC noted the contradiction between paragraphs 1 and 2 regarding watercourse systems and water use for purposes other than navigation and articles applying to navigation in certain circumstances.[1090] Presenting a hypothetical example yet another member of the ILC sought an explanation from the Chairman of the Drafting Committee and from the Special Rapporteur:

> small vessels intended not for navigation in the conventional sense of the transport of goods or persons, but for hydrological research or irrigation, would [they] be governed by the present articles or would [they] be outside their scope?[1091]

[1086] Verosta, see *YILC*, 1980, Vol.I, p.278.
[1087] Ibid, p.278.
[1088] Ibid, Barboza, pp.278-279.
[1089] Ibid, p.279.
[1090] Ushakov, ibid, p.278, Francis said that in the light of the comment made by Barboza and the special Rapporteur, Article 1 appeared to deal with the questions of state responsibility. Francis made a reservation on paragraph 2, for the reasons advanced by Mr. Ushakov.
[1091] Ibid, Yankov, p.279. In view of Yankov, the expression 'non-navigational uses' was similar and possibly more appropriate, than a reference to 'purposes'.

The Special Rapporteur states that the case cited: "would undoubtedly come within the scope of the articles, because such a vessel would be navigating, and if its navigational activities affected other uses, or vice versa, it would come under paragraph 2, while if it was used for such purposes as irrigation, it would come under paragraph 1."[1092]

As the interrelating issues of navigational use with non-navigational uses aroused controversies in the ILC, in 1983, there was a reversal of the ILC's 1980 Draft (Article 2 was provisionally adopted as Article 1 in 1983), and casting navigational use negatively against non-navigational uses, as follows:

> Article 2 Scope of the present Convention.
> 1. The present Convention applies to uses of international watercourse systems and of their waters for purposes other than navigation and to measures of administration, management and conservation related to the uses of those watercourse systems and their waters.
> 2. The use of the waters in international watercourse systems for navigation is not within the scope of the present Convention except in so far as other uses of waters affect navigation or are affected by navigation.[1093]

According to the 1980 provisional draft of the ILC, the regimes of navigational use and non-navigational uses are intertwined. However, in the 1983 drafts navigational use was excluded from the scope of non-navigational uses. An exception was nonetheless recognized for the interrelationship of the effect that one kind of use may have upon the other, that is to say the environmental effect. The ILC's commentary to Draft Article 2 in 1983 states as: "Article 2 corresponds verbatim to article 1 as provisionally adopted by the Commission at its thirty-second session, in 1980, except for minor addition in paragraph 1: the reference to 'measures of conservation' has been expanded as follows: 'measures of administration, management and conservation."[1094]

At its thirty-ninth session in 1987, the ILC provisionally adopted draft Articles 2 to 7, which in 1980 had been adapted as Articles 1 to 6. The important change appears in the 1987 draft, which includes the bracketing the word [system]. An "international watercourse system" became "international watercourse [system]."[1095] Whether an international watercourse is recognized as a system in terms of an international drainage basin is another controversy with respect to Article 1 of the 1997 UN Convention. However, it needs to be noted that the 1991 Draft Articles,

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[1092] Ibid.
[1093] *YILC*, 1983, Vol.II, Part One, p.168.
[1094] *YILC*, 1987, Vol.II, Part One, p.168, para 76. A brief commentary to this article can be found in Document A/CN.4/348.
[1095] *YILC*, 1987, Vol.II, Part Two, p.25.

which were provisionally adopted by the ILC at its forty-third session, omitted not only the bracket but also the term "system."[1096]

At its forty-sixth session in 1994, the ILC adopted the text of Draft Articles 1 to 33, their commentaries and a resolution on the Law of Non-Navigational Uses of International Watercourses. Draft Article 1 reads:

> 1. The present articles apply to uses of international watercourses and of their waters for purpose other than navigation and to measures of conservation and management related to the uses of those watercourses and their waters.
> 2. The use of international watercourses for navigation is not within the scope of the present articles except in so far as other uses affect navigation or affected by navigation.[1097]

During the elaboration of the ILC's Draft Convention in 1997, the Working Group took note of the following statements of understanding pertaining to the text of Article 1 of the Draft Convention: As regards Article 1 the concept of "preservation" referred in this article and the Convention includes also the concept of "conservation." The present Convention does not apply to the uses of living resources that occur in international watercourses, except to the extent provided in part IV and except insofar as other uses affect such resources.[1098] This clarifies that the 1997 UN Convention is not applicable to the use of living resources that occur in international watercourses. By this clarification, the right of fishing and the protection of fishstocks in international watercourses falls outside the purview of the Convention. However, in case of adverse effects upon living resources, including fish and its effects on fishing, which may be a result of navigational or non-navigational uses, the Convention may apply.

The interrelationship between the regimes of uses and regime of protection of international watercourses provided in the ILC's Draft Articles up to the year 1983 was based on the international river basin concept, wherein international watercourses were recognized as shared resources. In its 1984 Drafts, the ILC adopted the international watercourse concept and omitted the shared resource concept. The interrelationships between the regimes of uses are thereby defined negatively, and the relationships between the regimes of uses and protection were defined in an integrated manner.

Article 1 of the 1997 UN Convention has been cast in shrewd terms, emphasizing that navigational use is not within the scope of the Convention, except in terms of the environment, where the other uses affect navigational use and vice versa. Had the relationship between

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[1096] *Report of the ILC on the work of its Forty-Second Session*, 1994, UNGAOR, 49th Session, Supp.No.10 at 197, UN Doc.A/49/10, 1994. See also *EPL,21*, 1991, p.147.
[1097] Ibid.
[1098] *EPL*, 27,1997, p.197.

navigational and non-navigational use been cast in the final draft of the Convention as it had been proposed in the ILC's 1980 Draft Article 1, both the regimes would have been completely integrated. Had the 1980 Draft been incorporated into the final draft Article 1, there would have been a contradiction between the title and the Convention itself, if the title had remained the 1997 UN Convention on the Law of Non-navigational Uses of International Watercourses.

From the environmental regime point of view, the regimes of navigational use, non-navigational uses and environmental protection are indirectly integrated within the provisions of Article 1 of the Convention, and therefore should be treated in an integrated perspective. The extent of the exclusion of navigational use from non-navigational uses in Article 1(2) may concern only navigation itself, i.e. the freedom of navigation, rights and obligations of flag States. As regards the relationship between the uses and environmental protection of international watercourse, the Convention establishes harmony between the regimes.

14.2. Concepts and Approaches

Bearing in mind the notion of Article 1, which defines the 1997 UN Convention's approach to the law of international watercourses, it is relevant to focus here on Article 2 of the Convention. This defines the concept of international watercourses, and further determines the scope of the multiple legal regimes.

Article 2(a) recognizes "watercourse" as a "system" of surface and groundwaters, constituting by virtue of their physical relationships a unitary whole normally flowing into a "common terminus"; Article 2(b) defines "international watercourse" as a watercourse "parts of which are situated in different States"; and Watercourse State in Article 2(c) is defined as "a State Party to the present Convention in whose territory part of an international watercourse is situated, or a Party that is a regional economic integration organization, in the territory of one or more of whose member States part of an international watercourse is situated."[1099]

It should be noted that instead of using the term "international watercourse", paragraph (a) of Article 2 uses only the term "watercourse". However, paragraph (b) recognizes an international watercourse as having parts situated in different States, thereby defining "watercourse States" territory, constituting the parts of an international watercourse.

In the complex context of territorial sovereignty of riparian States, this legal language clearly strives to avoid the recognition of an international watercourse system as such, which in turn was an attempt to avoid the term international drainage basin in the Convention. Whether this language succeeds in fulfilling its objectives or not remains to be seen. The expression "international watercourse" in Article 2 may be synonymous

[1099] UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*, 1997, p.700.

with the concept of international river, which was further elaborated upon and evolved into the international drainage basin concept. However, Article 2 takes a broader approach, in that it includes surface and groundwaters in its definition of a system (except for saturated groundwaters), affecting each other both in terms of pollution, or withdrawal by means of pumping, leaching or seepage.

According to Paragraph 4 of the ILC's commentary to its 1994 Draft Articles concerning Article 2 of the 1997 UN Convention, the term "groundwater" refers to the "hydrological system composed of a number of different components through which water flows, both on and under the surface of the land." These components include rivers, lakes aquifers, glaciers, reservoirs, and canals. So long as these components are interrelated with one another, according to this ILC commentary, they form part of the watercourse. Confined or saturated groundwater is not included within the watercourse concept established in the 1997 UN Convention. It is covered by the Resolution on Confined Groundwaters which is annexed to the ILC's 1994 Draft Articles. As the groundwaters connected to international watercourses are subject to Article 2 of the 1997 UN Convention, national or international status of groundwater or an aquifer could be characterized as such, depending upon the intersection of international boundaries between two or more States as well as by transboundary hydraulic interdependence.

The definition of groundwaters, as found in Article 2 concerning international watercourses, refers to the term *common terminus*. This terminology in particular was a source of contention, and in a few cases was the basis for opposition to the Convention. It is clear where the Convention stands in regard to, say, groundwater that is situated between two or more States. However, in a situation where, for instance, an aquifer located within the territory of only one State, but which has hydrological connections or is dependent and/or affecting surface water in another State, Article 2 of the Convention is vague. Even though the Convention makes distinctions between isolated groundwater and groundwater which is interrelated with the surface water,[1100] it should be noted that some groundwaters are self-renewing, i.e. isolated, and other groundwaters are not self-renewing, i.e. they are dependent on surface water. In either case, the yields are uncertain and the level of groundwater availability is known to be unpredictable. This leaves the question open as to whether the same legal approach could be applied in both cases. In order to make a comprehensive legal definition that includes groundwaters, the ILC incorporated the phrase "international watercourse as a system" in the first draft, proposing that an international watercourse includes rivers, lakes and aquifer crossings or intersections forming a boundary as well as those elements of any system of surface and underground water located in more

[1100] Because of the inclusion of the groundwaters in the 1997 UN Convention, Pakistan and Rwanda abstained from the voting of the Convention, see McCaffrey and Sinjela, 1998, p. 97.

than one State.[1101] In fact, in 1980 the ILC accepted the following 'provisional working hypothesis' for the term international watercourse system:

> A watercourse system is formed of hydrological components such as rivers, lakes, canals, glaciers and groundwater constituting by virtue of their physical relationship a unitary whole; thus any use affecting waters in one part of the system may affect waters in another part.
> An "international watercourse system" is a watercourse system components of which are situated in two or more States.
> To the extent that the parts of waters in one State are not affected by or do not affect uses of waters in another State, they shall not be treated as being included in the international watercourse system. Thus, to the extent that the uses of the waters of the system have an effect on one another, to the extent the system is international, but only to that extent; accordingly, there is no absolute, but a relative, international character of the watercourse.[1102]

The word "system" evokes broader hydrological concepts than many nations are willing to accept. During their earlier work, the ILC seemed to be inclined towards using the term "international watercourse" as constituting a system. In the end, the 1994 ILC Draft Article 2 took the following approach, which reads:

> For the purposes of the present Convention:
> (a) 'Watercourse' means a system of surface waters and groundwater constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus.
> (b) 'International watercourse' means watercourse parts of which are situated in different States."[1103]

For some the term "international watercourse" is still a very sensitive issue, and controversy persists over whether the term "international watercourse" includes the notion of "system", in the sense of the international drainage basin concept. Others strongly argue that if international watercourses were recognized in the language of the Convention as a "system", only then would the international watercourse concept be equivalent to the drainage basin concept. In the absence of the term "system" from the Convention in relation to international

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[1101] McCaffey, 1992, pp.66-67.
[1102] *Second Report of the Law of the Non-Navigational Uses of International Watercourses*, UNDocA/CN.4/339, 1986.
[1103] *The Draft Articles on the Law of the Non-Navigational Uses of International Water Courses, Report of ILC on the work of its forty-third session*, 46, UNGAORSupp.No.10, UNDoc.A/46/10, 1991, also see *EPL,* 21, 1991, p.247.

watercourses, the concept of international watercourse can not be understood as signifying the implied wider meaning, i.e. viewing an international watercourse as a "system" or as a whole hydrological unit.

Geographical features of international watercourses constitute trans-frontier characters, depending upon cause and effects that manifest themselves from place to place. In the absence of the term "system", the link between different factors seems to be missing, and the term watercourse alone does not include those factors, which are included when viewed from the perspective of the drainage basin concept.[1104]

According to McCaffrey, the international watercourse concept laid out in Article 2 of the 1997 UN Convention "not only accords with hydrological reality, but also calls the attention of States to the interrelationships among all parts of the system of surface and underground waters that makes up an international watercourse. They also recognize that an effect on one part of the system will generally be transmitted to the other parts."[1105] Still, those who wish to include the term "system", point out that without the term, it is difficult to express the relative concept that an international watercourse can have different regimes of uses at the same time, depending on the various ways the watercourses are used.[1106] From the point of view of advocates of the concept of the international watercourse as a system, this is an important approach not only for defining the relations between watercourse States, but also in determining the scope of the law itself, which will lead to a further evolution of the legal regimes.

Prior to the adoption of the 1997 UN Convention, some States proposed the inclusion of a definition of international watercourse on the basis of the geographical aspect of an international drainage basin.[1107] Whether the watercourse concept adopted in the 1997 UN Convention is regarded as strictly geographical or not, is debatable. However, some of the States supporting the "drainage basin concept" voted in favor of the adoption of the "watercourse concept" of the 1997 UN Convention.[1108] At the same time, they have adopted the "river concept" in bilateral agreements.[1109] The following pattern can be seen in a few representative examples of riparian State treaty practice regarding these concepts, grouped by continents.

Apart from the classic treaties containing the river concept, the modern European watercourse treaties, which are concluded within the framework of the 1992 ECE Helsinki Convention, recognize the drainage basin concept regarding transboundary watercourses and international lakes. The term "transboundary watercourses" used in the 1992 ECE Helsinki Convention

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[1104] Bruhacs, 1986, pp.69-84.

[1105] McCaffrey and Sinjela, 1998, p.97.

[1106] Goldenman, 1990, pp.714-797.

[1107] Bangladesh suggested the drainage basin concept see Document A/CN.4/352 and Add.1; *YILC*, 1982, Vol.II, Part One, p.193.

[1108] Bangladesh, see UNDoc.A/51/PV.99.

[1109] The 1996 Treaty on Sharing the Ganges Waters at Farakka, Bangladesh and India, see Preamble of the Treaty, 36 *ILM*, 1997,p.519.

and the term "international watercourses" of the 1997 UN Convention emphasize different issues.[1110] While the former focuses on the watercourses crossing State boundaries, the latter simply defines them as international, parts of which are situated in different States. The 1992 ECE Helsinki Convention appears to have recognized the traditional river concept, also implying the basin concept. But the 1997 UN Convention seems to evade the issue of the basin concept, at the same time it is aiming to signify some features of the basin concept, e.g. the recognition of a watercourse as a system constituted by virtue of its physical relationships.

The older treaties of Asia reflect the river concept just as it is with the classic treaties of Europe. The modern Asian treaties such as the 1995 Mekong Agreement,[1111] adopts the river basin concept[1112] and includes the drainage basin concept as established by the 1966 ILA Helsinki Rules.[1113] Some features of the concept used in the 1997 UN Convention[1114] are also apparent in the 1995 Mekong Agreement. However, the 1990's treaties in South Asia, the 1996 Ganges and the 1996 Mahakali treaties, have adopted the river concept as found in the 1815 Final Act of the Congress of Vienna.[1115]

The 19th century African watercourse treaties, which were concluded by the colonial powers and based on the river concept, but the modern African treaties recognize the drainage basin concept. For example, the 1963 Senegal River Agreement, the 1963-1964 Niger River Agreement,[1116] the 1964 Chad River Agreement,[1117] the 1987 ZACPLAN[1118] and the 1995 SADC Protocol (revised in 2000),[1119] have adopted the basin concept. In particular, the 1995 SADC Protocol considers an international watercourse as a "system."

As in other continents the classic treaties of the Americas adopted the river concept, but the modern ones shifted to the basin concept. For example, in South America, the 1969 Treaty on the River Plate Basin,[1120]

[1110] Article 1(1) of the 1992 ECE Helsinki Convention and Article 2 of the 1997 UN Convention.

[1111] The agreement includes the Mekong River Basin; 34 *ILM*, 1995, p.864.

[1112] *First Report on the Law of the Non-navigational Uses of International Watercourses*, by Richard D Kearney, Special Rapporteur, Document A/CN.4/295, see para 49 *YILC*, 1976, Vol.II, Part One, p.191.

[1113] Article II of the 1966 Helsinki Rules, see *Report of the ILA Fifty-Second Conference*, Helsinki, 1966, p.485.

[1114] Article 2 of the 1997 UN Convention, UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*, 1997, p.700.

[1115] Article 108 of the Final Act of the Congress of Vienna, for the text of the Final Act, see Oakes and Mowat, 1918, p.37.

[1116] *UNTS*, 587, p.9.

[1117] *Journal officiel de la Republique federale du Cameroun*, Yaoude, September 15, 1964, No.18, p.1003.

[1118] See, 27 *ILM*, 1988,p.1112.

[1119] http://www.africanwater.org/sadcptcl.htm

[1120] Treaty on the River Plate Basin 1969, see *UNTS*, 875, p.11.

and in North America, the 1961 Colombia River Treaty[1121] and the 1978 Agreement on Great Lakes.[1122] Still, it should be reminded that in North Africa and South Asia, the international river concept is in use, e.g. the 1959 Nile River Agreement[1123] and the 1996 Ganges and Mahakali treaties.[1124]

Bearing in mind the above mentioned treaty practices, adopting different concepts in different continents, one might be skeptical about the importance of the concept of international watercourses adapted by the 1997 UN Convention. It takes the watercourse as a framework concept applicable to all watercourses of the world, unless and otherwise agreed by the concerned watercourse States. The riparian States' nonetheless choose to adopt different concepts based on their own interests. The foregoing description shows that multiple concepts and approaches are applied in the law of international watercourses. This practice, in effect, may evolve to harmonize and ultimately integrate the legal regimes of international watercourses.

The international drainage basin concept was put to a vote in the Sixth Committee of the General Assembly and lost by a vote of 41 to 25, with 32 abstentions.[1125] This raises an interesting question as to how scientific issues like hydrology and a geographical issue like drainage basins, can be a matter to be voted upon by the ILC, in their attempt to set comprehensive rules of international watercourses. In other words, both the question of hydrology and that of geography are equally important, and one cannot be given preference over the other. Based on the above analysis of the concepts and approaches, a multiple approach can be suggested regarding the use of the concept of water law, in recognition of the fact that each of these concepts are useful for different purposes.

The classical concept of ″international river″ lacks a basin-wide ecosystem approach, but it is a valid concept used by riparian States with regard to navigation and boundary demarcation between States and delineating State sovereignty. The concept of ″international river basin system″ is a wider concept than the "international river" since it includes the tributaries of the river, i.e. the main sources of the river. This concept is therefore applicable for the purpose of water allocation. The concept of "international drainage basin" is even wider than the concept of "international river basin system", since it includes the entire drainage basin and recognizes the basin as a single hydrological unit. From an environmental perspective this concept includes all elements of eco-system management. Therefore, it could be suggested that this concept is appropriate for application in the context of environmental protection.

[1121] *UNTS*, 542, p.244.
[1122] *UNTS*, 1153, p.187.
[1123] *UNTS*, 453, p.51.
[1124] See 36 *ILM*,1997,p.519.
[1125] McCaffrey, 1991, p.160.

The "international watercourse" concept regarding non-navigational uses appears to be a narrower concept than the "international drainage basin" concept. In that way, it resembles the concept of the "international river basin system." Therefore, it may be argued that its applicability is limited to the quantitative use of international waters, such as water allocation.

Even though the concept of "international drainage basin" is replaced by the concept of "international watercourse," international water law must adhere to the concept of "drainage basin" in regard to water regulations related to protection and improvement of the natural environment. The international shared water resource concept, which has recently been recognized by the decision of the ICJ , enhances the States' duty to cooperate with fellow riparians. On the whole, the concept of hydrological cycle of water is the root governing concept of all concepts, though this remains to be explicitly recognized by treaty practice.

The rationale behind the concepts of transboundary watercourses and international lakes, adopted by the 1992 ECE Helsinki Convention, has been discussed earlier in the study. Given the above discussion of the rationale behind the concepts behind the 1997 UN Convention, the question arises as to why these two framework conventions of the 1990's have adopted two different sets of concepts.

Both conventions reflect differing regional and global perceptions of States based on their geopolitical situations. The 1992 ECE Helsinki Convention reflects the European State perceptions, whereby the concept of transboundary watercourses and international lakes has been defined by combining the traditional international river approach along with the ecological view. The 1997 UN Convention aims to embrace the global approach of international watercourses, which is the outcome of a series of compromises by States from all continents. However, the concepts of these two conventions appear to be complementary, because essentially transboundary watercourses are also international watercourses and vice versa. The former concept emphasizes the transbounding characteristics of the watercourse and the latter concept defines watercourses as bodies of water which are situated in different States. In some ways, both concepts seems to be moving towards the hydrological approach.

The importance of the concept of international watercourses in relation to the other concepts mentioned above, can be highlighted further in the following, where we look at the framework character of the 1997 UN Convention.

14.2.1. Framework Character

As mentioned before, the ILC did not consider its Draft Articles on the Law of Non-Navigational Uses of International Watercourses as either a codification or progressive development of international law. Nonetheless, the riparian State practice was considered as the basis for embodying the

general principles corresponding to the customary norm, providing the framework of the use allocation and protection of international watercourses. Thus, by respecting, not superseding, the existing riparian State agreements adopted prior to the 1997 UN Convention, the framework character of the Convention is that its Parties may "apply" and "adjust" its general principles to the special characteristics and uses of particular international watercourses through specific agreements. This applies to the agreements adopted prior to the 1997 UN Convention. Apart from the reorganization of pre-existing agreements, the framework character of the Convention provides for the rules in cases where there is no agreement as well as the conclusion of prospective agreements.

Here, we will first discuss the framework character of the 1997 UN Convention, as provided in Article 3, and then examine the relevance of Article 3 in relation to selected regimes of international watercourses. Article 3 of the 1997 UN Convention reads as follows:

> 1) In the absence of an agreement to the contrary, nothing in the present Convention shall affect the rights or obligations of a watercourse State arising from agreements in force for it on the date on which it became a party to the present Convention.[1126]

The phrase "in the absence of an agreement" in this article was for some States the reason for opposing the adoption of the 1997 UN Convention. This, in spite of the Convention's aim to encourage States that share international watercourses to enter into agreement, applying or adjusting the provisions of the Convention to a particular watercourse. While some have argued that this is consistent with the framework character of the Convention, there are those who believe that this expression "in the absence of an agreement" supercedes the sovereign rights of riparian States. These States believe that the framework convention should guide, not bind, the future negotiation of treaties. Therefore they assert that the Convention strays too far from the framework character.[1127]

Paragraph 2 of Article 3 provides that notwithstanding the provisions of Paragraph 1, Parties to agreements referred to in Paragraph 1 may, where necessary, consider harmonizing such agreements with the basic principles of the Convention. According to Paragraph 3, watercourse States may enter into one or more agreements, which apply and adjust the provisions of the Convention to the characteristics and uses of a particular international watercourse or part thereof. Paragraph 4 addresses the tricky issues

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[1126] UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*,1997, p.700.

[1127] For example, India vehemently opposed the phrase "in absence of an agreement" of Article 3 considering the Convention going too far from its framework character, but the ILC's Rapporteur McCaffrey seems to adopt the view that the Convention assumes a framework character.

relevant to cases where the piecemeal agreements have been concluded with regard to the same international watercourses. It provides that:

> Where a watercourse agreement is concluded between two or more watercourse States, it shall define the waters to which it applies. Such an agreement may be entered into with respect to an entire international watercourse or any part thereof or a particular project, program or use except insofar as the agreement adversely affects, to a significant extent, the use by one or more other watercourse States of the waters of the watercourse, without their express consent.[1128]

As to the Parties intending to apply and adjust the general principles of the 1997 UN Convention to special characteristics and uses of particular international watercourses through specific agreements, the provision in Paragraph 5 specifies that:

> Where a watercourse State considers that adjustment and application of the provisions of the present Convention is required because of the characteristics and uses of a particular international watercourse, watercourse States shall consult with a view to negotiating in good faith for the purpose of concluding a watercourse agreement or agreements.[1129]

Paragraph 6 recognizes the consent rules of international law, indicating that where less than all of the States sharing a watercourse enter into an agreement about that watercourse, the agreement may not adversely affect the rights of other States on the watercourse without their consent. This provision reads:

> Where some but not all watercourse States to a particular international watercourse are parties to an agreement, nothing in such agreement shall affect the rights or obligations under the present Convention of watercourse States that are not parties to such an agreement.[1130]

The 1997 UN Convention does not affect the rights or obligations of its Parties under pre-existing agreements.[1131] Rather, it aims to encourage States to become Parties to specific agreements and harmonize existing agreements with the basic principles laid down by the Convention.[1132] By entering into specific agreements concerning a part of an international

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[1128] UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*, 1997, p.700.
[1129] Ibid.
[1130] Ibid.
[1131] Article 3, para 1.
[1132] Ibid, para 2.

watercourse,[1133] Parties may not adversely affect the uses of other States on that watercourse without the express consent of those States.[1134] This also means that the rights and obligations of the Parties and non-Parties are protected alike. The concerned watercourse States are required to enter into consultation with a view to negotiating in good faith for the purpose of concluding watercourse agreements where one of the riparian States believes that the Convention should be applied and adjusted to the characteristics of the watercourse in question.[1135]

Articles 3 and 4 of the 1997 UN Convention, insofar as it deals with the rights of watercourse States to participate in specific agreements, applying to an entire watercourse or to a part of an entire watercourse, also covers particular projects or uses. All riparian States of an international watercourse are entitled to participate, negotiate and be party to such agreements. A riparian's use of a watercourse should not be affected by the implementation of a prospective agreement. Article 4 recognizes the concept of *good faith* when it comes to negotiating watercourse agreements, with a view that a State remaining outside an agreement could become a party to the prospective agreement. While the framework convention provides general principles, nevertheless, according to the ILC discussion on Articles 3, 5, 32, and 33 of the 1997 UN Convention, critics have suggested that these framework principles may be considered as binding rather than guiding.[1136]

Summarizing Articles 3 and 4 of the 1997 UN Convention, the following conclusions can be made relating to the selected legal regimes. Article 3 makes it clear that the 1997 UN Convention aims to serve as a set of model rules for the conclusion of specific watercourse agreements; it would not affect the pre-existing agreements, it would apply to the States that are not parties to specific agreements, offering substantive rules. The framework

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[1133] Ibid, para 3.

[1134] Ibid, para 4.

[1135] Article 33(3) of the 1997 UN Convention provides that subject to the operation of Paragraph 10, if after six months from the time of the request for negotiations referred to in Paragraph 2, the Parties concerned have not been able to settle their dispute through negotiation or any other means referred to in paragraph 2, the dispute shall be submitted, at the request of any of the Parties to the dispute, to impartial fact-finding in accordance with Paragraphs 4 to 9, unless the Parties otherwise agree.

[1136] The voting pattern of the adoption of the 1997 UN Convention shows that States who supported the notion of the said Articles voted in favor and States who voted against or abstained from the adoption of the Convention, did so because of the inclusion of those very Articles. Some States asserted that the Convention did not adequately reflect a State's autonomy to conclude agreements without being fettered by the Convention. They also criticized Article 3 of the Convention. Article 5 of the Convention superimposed the principle of "sustainable utilization" over the principle of utilization without appropriately defining the term "sustainable". Article 32 presupposed regional integration and hence did not merit inclusion. Article 33, on dispute settlement, contained an element of compulsion. Any procedure for peaceful settlement of disputes should leave the procedure to the Parties. India had abstained in the voting on draft articles 5, 6 and 7 in the working group. China voted against on the same grounds.

character of the 1997 UN Convention (as it relates to the legal regimes focused on in this study) is that it may serve as a model set of rules for the navigational use despite the fact that the Convention's aim is only to cover the non-navigational uses. It is clear that Article 3 respects any existing agreements concerning all kinds of uses, whether navigational or non-navigational uses, and protection of international watercourses. In cases where there is a use contrary to equitable utilization - the substantive principle provided for in Article 5, 6 and 7 of the 1997 UN Convention (discussed below) - the Parties of any existing agreement may adjust such agreements with the Convention or apply the Convention; the Parties concluding new agreements may use the Convention as a model for integrating the use and protection of watercourses. In the absence of an agreement, Article 3 as well as Article 7(2), makes it clear that the Convention would apply to its Parties to the extent that it offers substantive principles meaning the principle of equitable utilization, including sustainable development, and no-harm rules. The framework character of the 1997 UN Convention is further explained in Article 10 of the Convention, which establishes no-priority of the uses.

14.3. Substantive Principles

Based on the riparian States' treaty practice, the general principles embodied in Part II of the 1997 UN Convention are substantive, corresponding to customary norms, providing the basis of the riparian States' right to use an international watercourse, with an obligation not to cause significant harm to other States, and notify planned measures to potentially affected States. As the 1997 UN Convention is not clearly considered either as codification or progressive development of international watercourse law, an important achievement of the Convention is that the legal regimes (of use allocation and sustainable utilization, and protection and improvement of an international watercourse) are governed by the well-established principle of equitable and reasonable utilization, embodied in Article 5 of the Convention. Article 5 of the 1997 UN Convention, which refers to the principle of equitable utilization, reads:

> 1) Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits there from, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse.
> 2) Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the rights to utilize

the watercourse and the duty to co-operate in the protection and development thereof, as provided in the present Convention.[1137]

This is a general, but substantial principle of the entitlement to the uses of international watercourses, which is constitutive, not interpretative. It includes the principle of equitable and reasonable utilization and participation. The criteria of equitable utilization and the no harm rule are provided for in Article 6 and 7, respectively. Article 5 appears to be based on the assumption that all watercourse States have conflicting interests in the use of their watercourses. Instead of prescribing the collective use of the watercourses, the substantive principle is designed for equitable utilization. Participation by the watercourse States in equitable and sustainable utilization is required under Article 5 of the Convention.

Before proceeding further, here the guiding principles adopted in Article 2 of the 1992 ECE Helsinki Convention need to be viewed in light of the principle of equitable utilization, which is defined by Articles 5, 6 and 7 of the 1997 UN Convention. Particularly, Article 2(b) of the 1992 ECE Helsinki Convention, which requires States to ensure ecologically sound management along with Article 2(c) which requires States to ensure reasonable and equitable use of transboundary watercourses, can be seen in connection with Articles 5, 6 and 7 of the 1997 UN Convention. Article 2(b) and 2(c) of the 1992 ECE Helsinki Convention are intimately related to the principles of equitable utilization, no-harm rules and sustainable utilization mentioned in Articles 5, 6 and 7 of the 1997 UN Convention.

To ensure the reasonable and equitable management of international watercourses the impetus for the principle of equitable utilization defined in Article 5 of the 1997 UN Convention, which also requires watercourse States to take into account the criteria enumerated in its Article 6.

The no-harm rule of Article 7 of the 1997 UN Convention is the foundation for the precautionary principle, polluter pays principle and intergenerational equity mentioned in Articles 2.5(a, b and c) of the 1992 ECE Helsinki Convention. Article 7 of the 1997 UN Convention implies the precautionary principle by suggesting the due diligence standard while applying the no-harm rule. Since the polluter pays principles is more a principle of economic policy, the 1997 UN Convention does not explicitly refer to it. However within the broader interpretation of the no-harm rule, it could be interpreted as a subunit of it. Nonetheless, States' obligations for payment of equity compensation for harm, both material and other harms, is recognized in Article 7, particularly in cases where appreciable harm is incurred from watercourse development projects. By proscribing *significant harm* in Article 7 and requiring States to practice sustainable utilization in Article 5, the 1997 UN Convention recognizes the principle of intergenerational equity, which is the bedrock of sustainable development.

[1137] UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*, 1997, p.700.

The guiding principles of the 1992 ECE Helsinki Convention and the substantive principles of the 1997 UN Convention appear thus to be complementary rather than contradictory. By balancing among the various uses as well as protection and uses, the principle of equitable utilization may even be interpreted as guaranteeing downstream benefits for the upper riparians and upstream benefits for the downstream States.

One genuine criticism of the principle of equitable utilization to be mentioned here is that the principle aims to attain the optimum benefit from watercourses, which cannot always be compatible with sustainable development. It must also be realized that the principle of equitable utilization is criticized by both upper and lower riparian States on the basis of their particular geopolitical perceptions, rather than challenging the principle on the basis of its inherent legitimacy. None of the States opposing the principle of equitable utilization have suggested an alternative approach such as collective use of shared watercourses. These States argue that they are free to decide the use of international watercourses by negotiation among riparian States, regardless of any principles expressed by any conventions. However, no riparian State can argue that it can do with its waters whatever it wants without taking into account the interests of others. This would amount to *unjust enrichment*, which is the enrichment of one State at the price of another without legal justification.[1138] Thus, there seems to be no alternative to the principle of equitable utilization that encompasses all elements of the competing needs involved in water resource management. This is especially true in situations where there is a limited amount of water, needs are unlimited, and the balance between uses and protection is vital.

Altogether, 103 States voted in favor of the adoption of the 1997 UN Convention, supporting the notions contained in Articles 5, 6 and 7 dealing with the principle of equitable utilization and the no-harm rule. The three States who voted against the adoption, Burundi, China and Turkey, made it clear that they did so because of their opposition to Part II of the Convention, including Articles 5, 6 and 7, as a whole. Among the 27 States who abstained, some strongly opposed Articles 5, 6 and 7 of the Convention.[1139] The Working Group made no statement of understanding at the adoption of the 1997 UN Convention regarding Article 5. However, according to the ILC's 1994 commentary (1) of Draft Article 5, the purpose of the article was to set out the rights and duties of the States with regard to the utilization of international watercourses for purposes other than navigation.[1140] The ILC's commentary further notes that Paragraph 1 of Article 5 is the basis of the principle of equitable utilization, a complement to Paragraph 2. Article 5, providing the principle of equitable utilization of

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[1138] *ILR*, 1966, p.630 (Newman RA, *The Principles of Equity As a Source of World Law*, 1966).

[1139] GA/9248/ Press Release May 22, 1997.

[1140] The ILC's commentary to its 1994 Draft Article 5 includes 1 to 24 comments, see *EPL*, 22/6, 1994, pp.335-368.

international watercourses, contains the general principles providing a correlative entitlement between the right of utilization and the obligation not to exceed it. The ILC's commentary 1994 reads as follows:

> (2) Paragraph 1 states the basic rules of equitable utilization. Although cast in terms of obligation, the rule also expresses the correlative entitlement, namely that Watercourse State has the right, within its territory, to a reasonable and equitable share, or portion, of the uses and benefits of an international watercourse. Thus a watercourse State has both the right to utilize an international watercourse in an equitable and reasonable manner and the obligation not to exceed its right to equitable utilization or, in somewhat different terms, not to deprive other watercourse States of their right to equitable utilization.[1141]

This commentary suggests the watercourse State's right to utilize an international watercourse in an equitable and reasonable manner and the obligation not to exceed its right. The principle of equitable utilization is not a right and obligation itself, rather it is a basis of the right and obligation in the use and environmental protection of international watercourses. In the elaboration concerning the principle of equitable utilization and its objective as spelled out in the second sentence of Paragraph 1 of Draft Article 5, the ILC's commentary explains that:

> (3) The second sentence of paragraph 1 elaborates upon the concept of equitable utilization, providing that watercourse States shall if they choose to use and develop an international watercourse do so with a view to attaining optimal utilization thereof and benefit there from consistent with adequate protection of the watercourse. The expression "with a view to" indicates that the attainment of optimal utilization and benefits is the objective to be sought by watercourse States in utilizing an international watercourse.[1142]

This suggests that watercourse States may utilize an international watercourse for their optimum use and maximum benefit, but it needs to be consistent with adequate protection as well. In cases where watercourse States choose to develop an international watercourse with a view of attaining optimal use, Paragraph 3 of Article 5 explains the important terminology related to the equitable and sustainable utilization. It reads as follows:

> Attaining optimal utilization does not mean achieving 'maximum' use, the most technologically efficient use, or the most normally valuable use much less short-term gain at the cost of long-term loss. Nor does it

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[1141] *EPL,* 24/6, 1994, pp. 335-368.
[1142] Ibid.

> imply that the State capable of making the most efficient use of a watercourse - whether economically, in terms of avoiding waste, or in any other sense - should have superior claim to the use thereof. Rather, it implies attaining maximum possible benefits for all watercourse States and achieving the greatest possible satisfaction of all their needs, while minimizing the detriment to, or unmet needs of each.[1143]

This is an important commentary defining sustainable utilization mentioned in Paragraph 1 of Article 5 of the 1997 UN Convention as an objective of equitable utilization. Furthermore, commentary of the ILC mentions that:

> In line with the principle of sustainability 'water resource development and management should be planned in an integrated manner, taking into account long-term planning and those with narrower horizons'. Such management and development 'should incorporate in particular, the environmental economical and social considerations'. It should 'include the requirements of all users as well as those relating to prevention and mitigation of water-related hazards and constitute an integral part of the social economic development planning process'.[1144]

The efforts to attain optimal utilization and benefits of international watercourses must be "consistent with adequate protection." Adequate protection, according to the ILC's commentary Paragraph 4 , means:

> not only measures such as those relating to conservation, security and water-related diseases, but also measures of 'control' in the technical, hydrological sense of the term, such as those taken to regulate flow, to control floods, pollution and erosion, to mitigate drought and control saline intrusion. In view of the fact that any of these measures or works may limit to some degree the uses that otherwise might be made of the waters by one or more of the watercourse States, the second sentence speaks of attaining optimal utilization and benefits 'consistent with' adequate protection. It should be added that, while primarily referring to measures undertaken by individual States, the expression 'adequate protection' does not exclude co-operative measures, works or activities undertaken by States jointly.[1145]

This commentary takes a broader approach with respect to the different legal regimes, listing measures relating to conservation, security and water-related diseases, regulation of water flow, controlling floods, pollution and erosion, and mitigating drought and control of saline intrusion. Paragraph

[1143] Ibid.
[1144] Ibid.
[1145] Ibid.

2 of Article 5 of the 1997 UN Convention embodies the concept of equitable participation and in this regard, commentary (5) of the ILC states that:

> The core of this concept is co-operation between watercourse States through participation, on an equitable and reasonable basis, in measures, works and activities aimed at attaining optimal utilization of an international watercourse, consistent with adequate protection thereof. But the obligation and correlative rights provided for in paragraph 2 are not dependent on a specific agreement for their implementation.[1146]

Paragraph 6 of the commentary of the ILC related to Article 5 emphasizes the affirmative nature of equitable participation by providing that it includes not only the right to utilize the watercourse but also the duty to co-operate actively with other watercourse States 'in the protection and development' of the watercourse.[1147] The duty to co-operate as a general obligation and an implicit right to the co-operation is explained in the ILC commentary in its Paragraph 7 related to Article 5 of the Convention as:

> The duty to cooperate is linked to article 8 on the general obligation to cooperate in relation to the use, development and protection of international watercourse. While not stated expressively in paragraph 2, the right to utilize an international watercourse referred in the second sentence carries with it an implicit right to the co-operation of other watercourse States in maintaining an equitable allocation of the uses and benefits of the watercourse.[1148]

Indicating the riparian States' entitlement to the use of international watercourses, Paragraph 8 of the ILC's commentary related to Article 5 further clarifies the scope of the rights and duties of watercourse States by stating that:

> There is no doubt that the watercourse State is entitled to make use of the waters of an international watercourse within its territory. This right is an attribute of sovereignty and is enjoyed by every State whose territory is traversed or bordered by an international watercourse. Indeed, the principle of sovereign equality of States results in every watercourse State having rights to the use of the watercourse that are qualitatively equal to, and correlative with, those of other watercourse States.[1149]

[1146] Ibid.
[1147] Ibid, the second sentence of paragraph 2.
[1148] Ibid.
[1149] Ibid.

As there has been a conflict of views among riparian States about the exclusive or relative sovereign right over international watercourses, which furthered the evolution of the theories of water rights, Paragraph 8 of the ILC's commentary related to Article 5 of the 1997 UN Convention also makes it clear that:

> Fundamental principle of 'equality of right' does not, however, mean that each watercourse State is entitled to an equal share of the use and benefits of the watercourse. Nor does it mean that the water itself is divided into identical portion. Rather, each watercourse State is entitled to use and benefit from the watercourse in an equitable manner. The scope of a State's right of equitable utilization depends on the facts and circumstances of each individual case, and specially on a weighing of all relevant factors, as provided in article 6.[1150]

This basically recognizes the sovereign equality of right of watercourse States, clarifying that equitable utilization is not the utilization of watercourses in terms of equal sharing of resources, rather those resources are utilized in an equitable manner.

As regards the relevance of Article 5 of the 1997 UN Convention, containing the substantive principle of equitable utilization and Article 3, which denotes the framework character of the Convention, it needs to be recalled that the Convention provides substantive principles in the absence of agreement, particularly among the Parties of the Convention. Article 3 calls on the Parties of existing agreements, who are also the Parties to the 1997 UN Convention, to adjust the provisions of the existing agreements in line with the principle of equitable utilization. Watercourse States are entitled to make use of the waters of an international watercourse within their its territories according to Article 5, in accordance with the principle of the sovereign equality of States. This right, according to Article 5, does not mean that the water of an international watercourse itself is to be divided into identical portions. Rather, it means the entitlement of the use and benefit from the watercourse is to be applied in an equitable manner. The scope of utilization depends on the facts and circumstances of each individual case, and specially on a weighing of all relevant factors, including the navigability and non-navigability of watercourses, as provided for in Articles 1, 3, 6 and 10 of the 1997 UN Convention. Above all, the rationale behind any kind of utilization of international watercourses is *participation* by the riparian States, and this participation in effect leads to an integration of the different legal regimes.

The principle of equitable utilization is now a well established principle of law, as evidenced by the world's State practice, and was thereby adopted by the 1997 UN Convention. This principle underpins all the above

[1150] Ibid.

mentioned classic theories of water rights, which determines the legitimacy of watercourse use and obliges watercourse States to balance all relevant factors (Articles 5, 6 and 7 of the 1997 UN Convention) in establishing the equitable sharing of watercourses. This means the negotiation over sharing of watercourses based on the needs of the riparian States, rather than their position in terms of power.

Article 6 of the 1997 UN Convention has listed the criteria of equitable utilization, which indicates the way for the riparian State to identify their needs.

14.3.1. Criteria

While riparian States are free to negotiate any solution that they consider equitable, nonetheless, in order to reach settlement of disputes relating to the equitable utilization and the balancing of the multiple regimes of international watercourses, certain guidelines of criteria need to be taken into consideration. A noteworthy list of criteria relevant to equitable utilization was first prepared by the ILA, as found in the 1966 Helsinki Rules,[1151] which were further examined by the ILC's study on the Law of Non-Navigational Uses of International Watercourses, and finally incorporated into Article 6 of the 1997 UN Convention. According to the ILA, the criteria provides explicit, but flexible, guidelines essential to insuring the protection of the "equal right" of all basin States to share the waters. Under the ILA rules set forth, "all the relevant factors" must be

[1151] Article IV, *Report of the ILA Fifty-Second Conference*, Helsinki, 1966. The list of relevant factors prepared by the ILA states:
(1) What is a reasonable and equitable share within the meaning of Article IV is to be determined in the light of all the relevant factors in each particular case.
(2) Relevant factors, which are to be considered, include, but are not limited to:
(a) the geography of the basin, including in particular the extent of the drainage area in the territory of each basin State;
(b) the hydrology of the basin, including in particular the contribution of water by each basin State;
(c) the climate affecting the basin;
(d) the past utilization of the waters of the basin, particular existing utilization; including in the economic and social needs of each basin State;
(e) the population dependent on the waters of the basin in each basin State;
(f) the economic and social needs of each basin State;
(g) the comparative costs of alternative means of satisfying the economic and social needs of each basin State;
(h) the availability of other resources;
(i) the avoidance of unnecessary waste in the utilization of waters of the basin;
(j) the practicability of compensation to one or more of the co-basin States as a means of adjusting conflicts among uses; and
(k) the degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State.
(3) The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable share, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

considered on a case-by-case basis, in determining a reasonable and equitable share. The factor-analysis approach of the ILA seeks primarily to determine whether:

> (i) the various uses are compatible;
> (ii) any of the uses is essential to human life;
> (iii) the uses are socially and economically valuable;
> (iv) other resources are available;
> (v) any of the uses is "existing" within the meaning of Article VIII;
> (vi) it is feasible to modify competing uses in order to accommodate all to some degree;
> (vii) financial contributions by one or more of the interested basin States for the construction of works could result in the accommodation of competing uses;
> (viii) the burden could be adjusted by the payment of compensation to one or more of the co-basin States; and
> (ix) overall efficiency of water utilization could be improved in order to increase the amount of available water.[1152]

No factor listed here has a fixed weight nor will all of the factors be relevant in all cases. Each factor is given such weight as it merits, relative to the other factors. No factor occupies a position of pre-eminence per se with respect to any other factor. To be relevant, a factor must have an impact the determination or satisfaction of the social and economic needs of the co-basin States.

The ILA approach to the criterion of equitable and reasonable use is that the share of an international drainage basin is to be determined in light of all relevant factors in each particular case.

One of the eleven factors deemed as relevant is past use, including particular existing utilization. Each factor is to be determined by its importance in comparison with the other relevant factors. The status of the existing use may continue in operation unless the factors justifying its continuance are outweighed by other factors, leading to the conclusion that it be modified or terminated so as to accommodate a competing incompatible use.

Turning to the ILC's work concerning the criteria of equitable utilization (except for the substitution of the word "use" for "share") as spelled out in the ILC's 1994 Draft Article 6, this criteria is virtually identical to the corresponding provisions of Article IV of the 1966 ILA Helsinki Rules. The following suggestions were made, to be added to the ILC's Draft Article 6:

> The contribution to the watercourse by each watercourse States [India],[1153] availability of other water resources [Egypt],[1154] and

[1152] Ibid.
[1153] UNDoc.A/C.6/51/NUW/WG/CRP.28, 1996.

sustainable development and the needs and interests of future generations [Finland].[1155]

None of these suggestions were incorporated in the ILC Draft Article 6. However, the Working Group added Paragraph 3 of the Draft Article 6. For the environmental and developmental concerns of the watercourse States, the process is required to take into account the criterion of the equitable utilization. Ultimately, Article 6 of the 1997 UN Convention provides criteria for the principle of equitable utilization, which is as follows:

> 1) Utilization of an international watercourse in an equitable and reasonable manner within the meaning of Article 5 requires taking into account all relevant factors and circumstances including:
> a) Geographic, hydrographic, hydrological, climatic, ecological and other factors of natural character;
> b) The social and economic needs of the watercourse concerned;
> c) The population dependent on the watercourse in each Watercourse State;
> d) The effects of the use or uses of the watercourse in one watercourse State or other watercourse States;
> e) Existing and potential uses of the watercourse;
> f) Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;
> g) The availability of alternatives, of comparable value, to a particular planned or existing use;
> 2) In the application of Article 5 or paragraph 1 of this Article, watercourse States concerned shall, when the need arises, enter into consultation in a spirit of co-operation.
> 3) The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is reasonable and equitable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.[1156]

This list of criteria is of equal value, as was the case with ILA approach, insofar that watercourse States are supposed to take into consideration these factors, in establishing the equitable utilization of international watercourses. The purpose of Article 6 according to the ILC's 1994 commentary is:

[1154] Ibid, p.53.
[1155] Ibid, p.18.
[1156] UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*, 1997, p.700.

(1) to provide for the manner in which States are to implement the rule of equitable and reasonable utilization contained in article 5. The latter rule is necessarily general and flexible, and requires for its proper application that States take into account concrete factors pertaining to the international watercourses in question, as well as to the needs and uses of the watercourse States concerned. What is equitable and reasonable utilization in a specific case will therefore depend on a weighing of all-relevant factors and circumstances. This process of assessment is to be performed, in the first instance at least, by each watercourse States, in order to assure compliance with the rule of equitable and reasonable utilization laid down in Article 5.[1157]

The precondition for equitable utilization is that the watercourse State does not have a fixed priority of water use and recognizes the principle of equality. Within such a precondition, the ILC's 1994 commentary notes that: (2) all factors that are relevant to ensuring that equal and correlative rights of the watercourse States are respected.[1158] The list indicating criteria, mentioned in Article 6, specifies each criterion is of equal value and each is required to be decided on a case-by-case basis. The ILC's 1994 commentary further notes that:

(3) no priority or weight is assisted to the factors and circumstances listed, since some of them may be more important in certain cases while others may deserve to be accorded greater weight in other cases.[1159]

Paragraph 1(a) of Article 6 of the 1997 UN Convention lists natural or physical factors as criteria, (b) lists social and economic needs of the watercourse State concerned and includes the population dependent on the watercourses.

Paragraph 1(e) of Article 6 relates to Article 10 of the 1997 UN Convention. This article, which refers to both existing and potential uses, in order to emphasize neither is given priority, is the determining issue regarding the interrelationship between navigational and non-navigational uses of international watercourses. The ILC's 1994 commentary recognizes that one or both factors may be relevant in a given case.

Paragraph 1(f) sets out a number of factors relating to measures that may be taken by watercourse States with regard to an international watercourse.[1160]

In order to reach to an equitable solution to a use in question, which may be a choice between an existing and planned use, including navigational and non-navigational uses, the alternative resources and their

[1157] *EPL*, 24/6, 1994, pp.335-368.
[1158] Ibid.
[1159] Ibid.
[1160] Ibid.

corresponding values have to be taken into consideration. The ILC's 1994 commentary notes:

> Paragraph 1 (a) of Article 6 relates to whether there are available alternative to a particular planned or existing use, and whether those alternatives are of a value that corresponds to that of a planned or existing use in question. The subparagraph calls for an inquiry as to whether there exist alternative means of satisfying the needs that are or would be met by an existing or planned use. The alternatives may thus take the form not only of other sources of water supply, but also other means - not involving the use of water - of meeting the needs in question, such as alternative sources of energy or means of transport.[1161]

The above commentary suggests that satisfying the needs of watercourse States can be a factor in reaching an equitable solution and alternative solutions also include different modes of transports. Hungary and Ecuador's response to the ILC's 1974 questionnaire may be recalled here, in which both countries stressed that navigational use takes priority where it is already agreed prior to the existence of the 1997 UN Convention. Based on the evolution of different modes of transports, i.e. road, rail and air transport, and growing shortages of water affecting all parts of the world, at the 1264th meeting of the ILC in 1990, some members suggested that no use should have priority over other uses.[1162] However, others also suggested that navigational use should not be undervalued relative to non-navigational uses.[1163]

In conclusion, it can be said that Article 6 of the 1997 UN Convention enumerates the criteria of the principle of equitable utilization. Some of the criteria mentioned in Article 6 are subjective and others are objective. All criteria have equal value and must be judged together on a case-by case basis. This means that navigational use, non-navigational uses and environmental protection must be evaluated as having equal status. Depending on the circumstances, the use becomes one of the criteria of equitable utilization, as does consideration of existing use vs. future use. Environmental harm also has to be considered as one of the criteria of equitable utilization.

Of the criteria listed in Article 6 of the 1997 UN Convention, there are some particular items, with respect to the principle of equitable utilization, which require further clarification.

[1161] Ibid.

[1162] Razafindralambo, see YILC, 1990, Vol. I, p.114, paras 48, 49.

[1163] Koroma, ibid, p.121, para 34.

14.3.1.1. Determination of social and economic needs of States

When analyzing the criteria of equitable utilization for international watercourses, determination of the social and economic needs of watercourse States may stand out as a problematic issue, but it is one of the key criteria included in Article 6 of the 1997 UN Convention. According to Article 6(1)(b) of the 1997 UN Convention, the watercourse States are required to take into account the social and economic needs of other watercourse States concerned when utilizing international resources. However, the ILC's commentary to its Draft Article 6 does not clarify how social and economic needs are to be determined;[1164] it merely states concern for social and economic matters related to water. The identification of social and economic needs of watercourse States is a subjective criterion, by nature controversial and difficult to ascertain. At the same time, the objective criteria mentioned in Article 6 are likewise not easy to determine, since so-called objective facts need to undergo neutral scientific evaluation, being that they are often twisted for political reasons.

The 1997 UN Convention enumerates the criteria of equity, but it does not and cannot define the reasonableness of legitimate interests of States,[1165] since national interests or needs are determined politically. Economic interests, as they are intertwined with watercourse-related interests, are at the core of international economic relations. One scenario is that an economically well off watercourse States may wish to maintain or change the status quo,[1166] creating a situation where weaker States are forced to surrender or accept non-equitable and/or unreasonable uses. In such cases, the fundamental issue is not that which is being decided, but whose terms these interests are being decided upon.[1167]

In general, national interests may be described as interests of power, security including environmental security, and economic prosperity,[1168] but all States do not have the same understanding of these terms. However, regarding the determination of needs and interests, each State is bound by legal limitations imposed upon States by international law. These

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[1164] With regard to the *determination of needs*, the Krishna Water Dispute Tribunal of India held that, "the need for diversion of water to another watershed may be a relevant factor in equitable apportionment. Thus, the relevant consideration is the interests of the State as a whole and all its inhabitants and not merely the interests of the basin area of the States." See, *Report of the Krishna Water Dispute Tribunal*, Vol.1,1973, pp.94-95. In *LaPampa v. Mendoza Republica Argentina,* the Argentine Supreme Court in held the view that 1,000,000 inhabitants in Mendoza were almost completely dependent on agriculture, while only 3,024 inhabitants of the province of LaPampa could have benefited from these waters. As a result, the Court allocated the whole of the waters of the Atuel River to the province of Mendoza. See, *Fallos de la Corte Suprema de Justicia de la Nacion*, 1987, tomo 310, Vol. 3, p. 2490.

[1165] Hafner, 1993,p.124.

[1166] Nobel, 1995,p.73.

[1167] Ringmar, 1995,p.87.

[1168] Nobel, 1995,p.73.

limitations are known as the duties of States, which include the evaluation of one's needs in accordance with the needs and interests of other States. Particularly, in terms of the equitable utilization of international watercourses, State national interests must conform to the legal norms. This may be the heart of the matter relating to Article 6(b). Another factor that requires further clarification is the criterion relating to availability of alternative resources in the respective riparian States.

14.3.1.2. Availability of alternative resources

According to Article 6 (1)(e), watercourse States must take into consideration existing and potential use. Article 6(1)(g) further provides that States must take into consideration the availability of alternative resources of a corresponding value to a particular planned or existing use. However, it is not clear in Article 6(1)(g) whether the term alternative resources signifies only alternative water resources or whether other sources may be substituted, such as nuclear power, providing an alternative to hydro-power. Whether the term alternative resources also include the notion that a developed watercourse State has to consider the need of its weaker or poorer counterpart remains unclear. If watercourse States must take into consideration the available alternatives in their respective territories in order to find an equitable utilization of shared resources, a great degree of compromise will be required. The application of the criterion of alternative resources can be achieved if incorporated into law, binding States legally to develop shared watercourses in mutual consultation and understanding.

Assuming that State B possesses alternative resources but State A fails to carry out consultation with State B, the legal measure available to State B is to claim damage corresponding to the value of the damage. Even if there were consultation between State A and B, State A would be responsible to pay damages according to the terms and conditions agreed upon. On the other hand, if there is no alternative resource for State B, and State A fails to comply with Article 6(1)(g), only a court of law may compel the Parties of the agreement to perform.[1169] The final criterion in need of further clarification is the scientific evaluation of "objective" facts, which follows in the next section.

14.3.1.3. Neutral scientific evaluation of facts

Article 6(1)(a) provides that the sub-criteria, i.e. geographic, hydrographic, hydrological, climatic, and ecological and other natural factors of an international watercourse, demand neutral scientific and technical evaluation. These criteria seem to be objective and less controversial than the subjective criteria, but still remain problematic to assess, since it is

[1169] *Livingstone v. Rawyards Coal Co.*, 1880,5 App. Case 25.

difficult to ascertain the overall consequences of the physical, chemical, biological and hydrological processes of the water cycle.

Any international watercourse system includes organic and inorganic components, and damaging one component can lead to the imbalance or destabilization of another. For example, changes in river flow effect not only flora and fauna, but also the eco-system of the region. In this sense, the various drainage basins of the world constitute a single basin, which is a fundamental part of the cycle of global weather conditions. Any regional change leads to a chain reaction, which culminates in a change in the global climate balance. Changes in river flows will require adjustments to the management of those rivers as well as to water dependent activities such as agriculture and navigation.[1170] Other global environmental problems, e.g. global warming, the depletion of the ozone layer, the rising and declining sea level, and a rise in acid rain levels, are also connected to the hydrological cycle of water. These issues require neutral scientific analysis, but in some cases it is difficult to obtain objective scientific facts. Where the facts are available, political and economic aspirations often take priority over scientific evidence.

One of the major challenges ahead for the international community will be to develop legal concepts, principles, procedures and institutions, based on scientific analysis, for the management and protection of international watercourses. One technique to determine the water-related needs and interests of States is by neutral scientific analysis and evaluation through the fact-finding commission suggested in Article 33 of the 1997 UN Convention. Thus, the sub-criteria of equitable utilization mentioned in Article 6(1)(a) may be viewed together with Article 33(3-9) relating to water dispute settlement.

14.3.2. No-Harm Rule

Some kind of harm will inevitably result from all kinds of uses of watercourses. Article 7 of the 1997 UN Convention deals with the determination of the types of harm; not-significant harm are appreciable (permissible) with equity compensation, and significant-harm are not appreciable (prohibited). This Article is also concerned over whether, essentially, the use of waters takes priority over harm, or vice versa.

The ILC's 1994 Draft Articles 5 and 7 aroused debate about the order of precedence between equitable utilization and the no-harm rule. Some favored the principle of equitable utilization because of its vagueness,[1171] whereas others saw its vagueness as a reason to oppose it.[1172] Those who viewed favorably the vagueness supported the precedence of the principle of equitable utilization over the no-harm rule, arguing that it provided flexibility, and held the view that it will ultimately lead to negotiation of

[1170] Goldenman, 1990, p.741.
[1171] Benvenisti, 1997, pp.384-415.
[1172] Nollkaemper, 1993.

settlements between the watercourse States. At the same time, proponents of the specificity of laws would argue that vagueness is a constraint of the law, as it gives discretion to States to misuse the law.

Opponents of the precedence of the no-harm rule over equitable utilization criticized the ILC's 1994 Draft Articles 5 and 7, proposing a flat prohibition of harm against any kind of water use (Draft Article 7 recognized the supremacy of no-harm over equitable utilization). Such a primacy of the no-harm rule was reinforced in Draft Article 10. Indeed, the 1994 Draft Article 7, which reversed the order of precedence as laid down in the 1991 Draft, provided for the supremacy of the "no-appreciable harm" rule. The 1994 Draft text provided that:

> 1) Watercourse States shall exercise due diligence to utilize an international watercourse in such a way as not to cause significant harm to other watercourse States.
> 2) Where, despite the exercise of due diligence, significant harm is caused to another State, the State whose use causes the harm shall, in the absence of agreement to such use, consult with the State suffering harm over
> a) the extent to which the use has proved equitable and reasonable, taking into account the factors listed in Article 6; and
> b) the question of ad hoc adjustments to its utilization, designs, and, where appropriates, the question of compensation.[1173]

The ILC's 1994 commentary to Draft Article 7 states:

> (1) The Commission in this article is setting forth a process aimed at avoiding significant harm as far as possible with reaching an equitable result in each concrete case. Optimal use of finite water resources of an international watercourse is considered in light of the interests of each watercourse State concerned. This is an accord with emphasis throughout the articles generally and in Part III in particular on consultations and negotiations concerning the planned measures.[1174]

The commentary goes on to say that:

> (2) The approach of the Commission was based on three conclusions: first, that article 5 alone did not provide sufficient guidance for States in cases where harm was a factor; second, that States must exercise due diligence to utilize a watercourse in such a way as not to cause significant harm; third, that the fact that an activity involves significant harm, would not itself necessarily constitute a basis for barring it. In certain circumstances 'equitable and reasonable utilization' of

[1173] *EPL*, 24/6, 1994, pp.354-355.
[1174] Ibid.

> international watercourse may still involve significant harm to another watercourse State. Generally, in such instances, the principle of equitable and reasonable utilization remains the guiding criterion in balancing the interest at stake.[1175]

Two opposing lines of criticism appeared as a result of the above draft. Wouters argues that the principle of equitable utilization should be the governing principle over the no-harm rule.[1176] Nollkaemper is on the contrary of the view that no harm rule should prevail.[1177] Fuentes considered these two opposing lines of criticism as a "false conflict" between the principle of equitable utilization and obligation not to cause significant harm.[1178] Fuentes sees no conflict between equitable utilization and the no-harm rule, and argues that if damage is understood as material or other loss and the environment is understood as comprising the various components of the earth, including natural and mad-made elements, then it is difficult to see any difference between environmental damage and damage in general. Fuentes goes on to say that the seriousness of the damage becomes the prime matter of legal relevance, and harm or damage signifies legal injury arising out of illegal acts. [1179]

Those scholars who see no conflict between the equitable utilization and no-harm rule, recognize a basic distinction between injury and damage, thereby making it clear that the concept of injury in terms of injured States involves the concept of a legal injury or injuria, whereas the term damage refers to material or other loss suffered by the injured State.[1180]

It is indeed, the *Trail Smelter Arbitration* that recognized the injurious act, as an act of encroachment on the territory of the neighboring State, which prejudiced use of territory. The Arbitrators also recognized the principle that States must refrain from acting illegally.[1181] As there is a clear distinction between the terms harm, injury and damage, there indeed seems to be no conflict between the equitable utilization and no-harm rule.

A shift from a flat prohibition of any kind of harm, to a *process* (Article 33, Fact-Finding Commission) can be seen within Article 5, 6 and 7 of the 1997 UN Convention. This *process* does not give primacy to either principle. Instead, it aims to integrate the two principles. The obligation not to cause

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[1175] Ibid.

[1176] Wouters, 1996, pp.417-439. The ILC's 1994 Draft Article 7, replacing its 1991 Draft, provided for the supremacy of the "no-appreciable harm rule" over the "principle of equitable utilization."

[1177] Nollkaemper, 1993, finds the legal regime of transboundary water pollution between discretion and constraints.

[1178] Fuentes, 1998, pp.121-200.

[1179] *First Report of the ILC on State Responsibility* by James Crawford, Doc.A/CN.4/490/Add.4, May 26, 1998.

[1180] Ibid, p.3, para 105.

[1181] *UNReports of International Arbitral Awards*, 3, p.1965.

significant harm has found expression in Article 7 of the 1997 UN Convention, which provides:

> 1) Watercourse States shall, in utilizing an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States.
> 2) Where significant harm nevertheless is caused to another watercourse State, the States whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of articles 5 and 6, in consultation with the affected States, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.[1182]

An understanding pertaining to Article 7(2) was reached during the elaboration of the 1997 UN Convention, with the wording "in the event such steps required by article 7(2) do not eliminate the harm, such steps shall be taken to mitigate harm (emphasis added)."[1183] In the debate at the ILC Drafting Committee, only Jordan insisted on the inclusion of the concept of sustainability in Article 7 (India and Czech Republic opposed it).[1184] The concept of sustainable utilization is provided for in Article 5(1) of the 1997 UN Convention. The Working Group of the Sixth (Legal) Committee added the words and sustainable after optimal in Paragraph 1 of Article 5 of the ILC's Draft, making the objective of equitable and reasonable utilization to be the attainment of "optimal and sustainable utilization of an international watercourse."[1185]

According to the no-harm rule of the 1997 UN Convention, a watercourse State may develop or use international watercourses only where the State knows or ought to know that it would not cause significant harm to other States. This is a change from a flat prohibition to a process, which does not seem to give primacy to equitable utilization, but rather makes an adjustment between equitable utilization and no-harm. In the absence of flat prohibition of harm, however, polluting activities are not left totally to the discretion of States.[1186]

[1182] Doc. A/51/869, April 11, 1997.
[1183] *EPL*, 27/3, 1997, pp.197, 233-237.
[1184] Docs.A/C.6/51/NUW/DC/CRP.8.
[1185] McCaffrey and Sanjela, 1998, p.99.
[1186] There were three kinds of proposals to integrate the principle of equitable utilization and the no-harm rule: 1) the supremacy of the equitable utilization principle over no-harm (the 1966 ILA Helsinki Rule approach); 2) in cases of water allocation, equitable utilization would prevail, while the no-harm rule would prevail in cases of water quality protection (the Institute de Droit International approach); and 3) the supremacy of no-harm rule over equitable utilization (the ILC's 1994 Draft approach).

The bottom line is that States must refrain from acting illegally.[1187] The legality of using one's own territory depends upon the extent of legal injury caused by particular acts of the States, which is to be determined by a court, not by the parties in the case. Such an injury is legally relevant when it interferes with the entitlement of the equitable utilization provided for in Article 5 of the 1997 UN Convention.

Article 7 of this Convention is relevant to protecting each State's share of benefits from the shared watercourses, but the legality of water use is subject to the principle of equitable utilization. However, a question remains whether Article 7 is an entitlement to keep international watercourses free from transboundary environmental harms. Whether there exists a general rule of international law prohibiting the infliction of significant damage on international watercourses is debatable. Nonetheless, under the law of torts, it is not only significant harm, but also harm not prohibited by law, is prohibited.[1188]

An understanding reached with the elaboration of the ILC's Draft Convention criteria pertaining to the text of Article 6(1)(a) states: "In order to determine whether a particular use is equitable and reasonable, the benefits as well as the negative consequences of a particular use should be taken into account."[1189] The ILC has dealt with the possible conflict between the no-harm rule and equitable utilization, and generally concluded that equitable utilization may prevail over the operation of a rule, which prohibits substantial injury. The ILC has also acknowledged equitable utilization as a guiding principle in balancing the interests at stake.

Whether the injury should be forbidden or compensated for depends on the degree of interference of one State on the equitable share of the others', according to the ILC.[1190] Thus, the terms equity and equitable utilization have different connotations in the 1997 UN Convention. Particularly, Articles 5, 6 and 7 referring to the principles of equitable utilization and not causing significant harm are to be applied on a case by case basis by the watercourse States concerned. According to Article 6(1)(b), it may be argued that the concerned party(s) has to prove a direct connection to the water related needs in order to determine equitable use between the watercourse States. The following example provides insight as to how to

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[1187] This is supported by case law. For example, in the *Corfu Channel Case*, the ICJ stated that a State is under the obligation 'not to allow knowingly its territory to be used for acts contrary to the rights of other States'. See *ICJ Reports* 1949, p.22. The Arbitral Tribunal in the *Trail Smelter Arbitration*, held that no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties of person therein, when the cause is of serious consequences and the injury is established by clear and convincing evidence. *UNReports of International Awards,* 3,1965.

[1188] *Paton v. British Pregnancy Advisory Service*, 1978, 2 AllER., p.987.

[1189] *EPL,* 27/3, 1997, pp.197, and 233-237.

[1190] The ILC's commentary to Article 7 of its 1994 Draft Article the ILC's Report see *EPL,* 24/1994.

distinguish water-related needs from other kinds of needs and how an equitable situation may be reached.

Supposing State A (plaintiff) is seeking co-operation from State B (defendant)[1191] for the equitable utilization of their shared water resource. If the defendant fails to co-operate,[1192] arguing that it is sovereign and therefore not obliged to consider the demands of the plaintiff, then there is little that can be done under international law. In such a situation the question is not who is or isn't sovereign, but who fails to co-operate. However, even if co-operation is accepted, technical facts relating to the watercourse must be separated from political aspirations.

The 1997 UN Convention requires the States to co-operate with each other concerning the development of water projects. Failure to cooperate or to provide opportunity to evaluate the proposed project of the concerned parties may be considered in violation of the principle of equity. Equity may be required where a riparian State alters its use and the other riparian State initiates the use of the watercourse; it may also be required when the use of an international watercourse by one State is equitable, but it is causing substantial harm to the other. In this case, it is essential to provide compensation for such harm. Given this, it stands to reason that if equity is not incorporated, sustainable development and integrated management of international watercourses will not succeed.

14.3.3. No-Priority of Uses

The relationship between uses of international watercourses reveals much about the regime of multiple uses. Rules governing the relationship between different kinds of uses of an international watercourse, including navigational use and non-navigational uses, are provided for in Article 10 of the 1997 UN Convention, which states:

> 1. In the absence of agreement or custom to the contrary, no use of international watercourse enjoys inherent priority over other uses.
> 2. In the event of a conflict between uses of an international watercourse, it shall be resolved with reference to articles 5 to 7, with special regard being given to the requirements of vital human needs.[1193]

Paragraph 1 of Article 10 seems to imply that watercourse States had previously granted some priority to specific uses through agreements or customs, and that States are free to do so through agreements in the future. It may also imply that some States claim priority for certain uses. This provision not only reflects the view expressed by some States in response to the ILC's questionnaire regarding the already existing priority of navigational use, but also of those States willing to accommodate

[1191] *Chaplain v. Hicks* 1911-13 All ER., 224.
[1192] Ibid.
[1193] Document A/51/L.72, see the text in *EPL*, 27/3, 1997, p.197

navigational use with the non-navigational uses. On the one hand, Paragraph 1 of Article 10 establishes no priority of any kind of use of international watercourses. On the other hand, in Paragraph 2, vital human needs are prioritized against other uses. During the elaboration of the Draft Convention in 1997, the following statement of understanding was made pertaining to Paragraph 2 of Article 10:

> In determining 'vital human needs' special attention is to be paid to provide sufficient water to sustain human life, including both drinking water and water required for production of food in order to prevent starvation.[1194]

This statement recognizes water as essential to life on earth, though in some cases water is considered as a commodity good.[1195] The statement emphasizes that sufficient water for sustaining human life is a must and should be prioritized, implying that the right of access to water is an inalienable human right, particularly water for drinking and irrigation for food production, thereby also implying the right of access to food. The ILC's 1994 commentary on its Draft Article 10 as to the no-priority of use notes that Article 10 sets forth the general principles that no particular use of an international watercourse enjoys inherent priority over other uses.[1196] This article also addresses the situation in which there is a conflict between different uses of an international watercourse.[1197] The commentary acknowledges that watercourse States are free to regulate watercourse use, stating:

> Since States, through agreement or practice, often give priority to a specific use or class of uses, paragraph 1 is couched in terms of a residual rule. Thus, the opening clause of the paragraph preserves any priority established by agreement or custom between the watercourse States concerned. The term agreement is used in its broad sense and would include, e.g. an agreement or modus vivendi that has been arrived at by watercourse States. Furthermore, it is not limited to "watercourse agreements" since it is possible that certain uses, such as navigation, could be addressed in other kinds of agreements such as treaties or amity. The word custom applies to situations in which there

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[1194] See, the text in *EPL*, 27/3, 1997, p.197.

[1195] It is self-evident that like carbon and sunshine, water is one of the three essences of life on earth. However, water is regarded as a commodity good under Article 309 of the North American Free Trade Agreement and Article XI of the General Agreement on Tariff and Trade.

[1196] *Report of the ILC on the work of its Forty-Second Session*, 1994, UNGAOR, 49th Session, and Supp. No.10 at 197, UN Doc.A/49/10.

[1197] Text of the Report and Commentaries see, *EPL* 24/6, 1994, pp.335-368.

> may be no agreement between watercourse States but where, by tradition or in practice, they have given priority to a particular use.[1198]

The reference to an ”inherent priority” likewise indicates that nothing in the nature of a particular type or category of uses gives it a presumptive or intrinsic priority over other uses, leaving watercourse States free to decide the priority of a specific use in relation to a particular international watercourse. This applies equally to navigational uses which, according to Paragraph 2 of Article 1, fall within the scope of the present articles ”in so far as other uses affect navigation or are affected by navigation.”[1199] In recognizing different watercourse situations, the ILC's commentary notes:

> Paragraph 2 deals with the situation in which different uses of an international watercourse conflict, or interfere, with each other but where no applicable priorities have been established by custom or agreement. In such a case, paragraph 2 indicates that the situation is to be resolved by reference to the principles and factors contained in articles 5 to 7, ”with special regard being given to the requirements of vital human needs”. Within the meaning of the article, therefore, a ”conflict” between uses could only arise where no system of priorities governing those uses, or other means of accommodating them, had been established by agreement or custom as between the watercourse States concerned. It bears emphasis that the paragraph refers to a ”conflict” between uses of an international watercourse, and not a conflict or dispute between watercourse States.[1200]

With respect to vital human needs, the commentary further notes that watercourse States are to have ”special regard to the requirements of vital human needs.” That is, special attention is to be paid to providing sufficient water to sustain human life, including both drinking water and water required for the production of food in order to prevent starvation. This is an elaboration upon the criterion contained in Paragraph 1(b) of Article 6, which refers to the “social and economic needs of the watercourse States concerned.”[1201]

With respect to the flexibility of rules of navigational use and non-navigational uses, the ILC's commentary notes that while navigational uses may have enjoyed a general priority earlier in the century, States recognized the need for greater flexibility as other kinds of uses began to rival navigation in economical and social importance. This exemplifies the shift in attitude towards recognition of the importance of taking into account the variety of potential uses of a watercourse. The ILC's

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[1198] Ibid.
[1199] Ibid.
[1200] Ibid.
[1201] Ibid.

commentary further notes that States promote, for the common good, the economic utilization of the hydrological basins and streams of the regions of which they are a part, for "transportation, the production of electric power, irrigation works, and other uses, and particularly in order to control and prevent damage such as periodically occurs as a result of floods." It also refers to the "daunting" challenge to satisfy the water needs of "exploding" metropolitan areas "given the equally increasing needs for water for irrigated agriculture and problem arising from urban and industrial pollution." Advance or preemptive measures have to be taken to protect and conserve the water and environmental resources. Such measures would often be impossible if a particular use enjoys inherent priority. The absence of such a priority among uses will facilitate the implementation of measures designed to ensure that "vital human needs" are satisfied.[1202]

According to the ILC's commentary, Article 10 seems to apply to navigational use and non-navigational uses since both of the uses fall within the classification of different kinds of uses. Article 10 addresses the situation where there is a conflict not only between navigational use and non-navigational uses, but also conflicts between different non-navigational uses, where different uses of the watercourses interfere with each other, and the situation where no priority of water use has been established. Paragraph 2 refers to a conflict between uses rather than to a water conflict and disputes between watercourse States. The ILC's Draft Article 10 was entitled "the relationship between navigational use and non-navigational uses", stating:

> 1. In the absence of agreement to the contrary, neither navigation nor any other use enjoys an inherent priority over other uses.
> 2. In the event that uses of an international watercourse [system] conflict, they shall be weighted along with other factors relevant to the particular watercourse in establishing equitable utilization thereof in accordance with articles 6 and 7 of these articles.[1203]

The term "navigation" in Paragraph 1 and the term "system" in Paragraph 2 were omitted in the later draft. The provisional draft recognized the clear interconnection between navigational uses and non-navigational uses of watercourses. The original draft Paragraph 1 sought to establish no priority regime. Paragraph 2 proposed international watercourse uses through equitable utilization.[1204] However, regarding the preference of a particular use, it must be noted that "it may be necessary to restrict or even halt irrigation in order to maintain water levels sufficient for navigation;

[1202] Ibid.
[1203] UNDoc.A/CN.4/421 and Add.1 and 2.
[1204] McCaffrey, see YILC, 1989, Vol.I, p.231.

conversely, a dam would render a river impassable in the absence of some special provision for shipping."[1205]

The fundamental basis of Article 10 of the 1997 UN Convention is that each international watercourse is different and should be dealt with on a case-by-case basis. The discussion among ILC members with regard to Article 10 is useful in highlighting the relationships between the different kinds of uses of international watercourses. The members of the ILC had discussed that a clear distinction had to be drawn not only between different kinds of uses of different international watercourses but also the different needs of the States sharing the watercourse. In this context one important point of the discussion was that:

> A cubic meter of water from the Nile did not have the same intrinsic value in Egypt and in Ethiopia. Egypt, which is a desert country and had, moreover, been called a gift of the Nile, had only that river to rely on for water supplies. The different possible uses of international watercourses should therefore be defined before any attempt was made to determine the consequences of such uses or to decide on a procedure for settlement of disputes.[1206]

Regarding the distinction between timber floating, navigational use and industrial use the ILC noted that bilateral water boundary agreements in Europe and in North America often contained entire chapters on timber floating, which could be regarded either as a navigational use or as an industrial use, depending upon circumstances.[1207] The ILC recognized that rules should be established taking into account certain factors important enough to list.[1208] An alternative Draft was proposed to Paragraph 1 of Article 10 (then drafted as Article 24). Neither navigation nor any other use enjoyed inherent priority over other uses, without specifying what those other uses were.[1209] It was suggested that the Draft Article should take into account not only the situation at the time of drafting but also future problems regarding the relationships between different uses of international watercourses. According to some members of the ILC, the Draft Article on the relationships between different uses failed to make

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[1205] *YILC*, 1989, Vol.II, Part One, p.121, para 120.

[1206] Boutros Ghali, ibid, p.251, para 30.

[1207] At the 1853rd and 1856th meetings 1984, Boutros Ghali drew the attention of the ILC members to the navigational use of international watercourses; see *YILC*, 1984, Vol.I, p.251, para 29.

[1208] Mahiou, at the 2163rd meeting of the ILC in 1990, focused discussion on relationships between different kinds of uses of international watercourses see *YILC*, 1990,Vol.I, p.104, para 18.

[1209] Bennouna, at the 2164th meeting of the Commission, ibid, p.108, para 23, Illueca focused the discussion on the term "use" and the "category of uses" referred to in Article 10, ibid, p.111.

distinctions on the relationship between the uses of international watercourses by the upper and lower riparian States:

> The relationship between States situated on opposite sides of a river was obviously different from the relationship between States situated in the river's upper reaches and lower reaches: while, in the former case, their interests were more or less symmetrical, in the latter case they were not only asymmetrical but might even be mutually contradictory.[1210]

While some members of the ILC suggested priority of domestic water use and irrigation,[1211] others argued that navigational use should not be subordinated to the other uses.[1212] Still, others argued that no use would have priority over other uses.[1213] The priority of navigational use was challenged by some of the members of the ILC.[1214] However, some earlier treaties underline the priority of navigation.[1215] The Special Rapporteur noted that because navigation was historically the more important economic use, it gained a privileged position not only vis-à-vis other uses as they rose to prominence, but also with respect to the building of bridges, watercourse safety and rive regulation in general. All watercourse-related activities had to yield to the requirements of navigation.[1216] The right of navigation therefore had priority over the right to the exploitation of hydraulic power.[1217] No case of industrial or agricultural exploitation was allowed which would cause injury to navigation.[1218] Attempts were made to soften the priority of navigation over the other uses. However, no alteration was found among State practices to that effect.[1219] Viewed on a world scale, the preference of navigation over other uses of international rivers seemed doubtful:

[1210] Barsegov, at the 2166th meeting of the ILC, ibid, p.126, para 22 .

[1211] Solari Tudela, ibid, p.112, para 35.

[1212] They gave the example of the Senegal River used for navigation and other uses, Koroma, ibid, p.114, paras 48 and 48.

[1213] Razafindralambo, ibid, p.12, para 34. Diaz Gonzalez argued that a particular use must not cause prejudice towards other uses, ibid, p. 127, para 33.

[1214] Thiam, ibid, p. 128, paras 40 and 41.

[1215] *YILC*, 1989, Vol.II, Part One, p.129, para 50. Article 10 of the Statute annexed to the 1921 Barcelona Convention, prioritizing navigational use against the other uses provides the following: "Each riparian State is bound to refrain from all measures likely to prejudice the navigability of the waterway, or to reduce the facilities for navigation" see, *LNTS*, 7, p.57.

[1216] *YILC*, 1982, Vol.II, Part One, p.173, para 439.

[1217] *YILC*, 1974, Vol.II, Part Two, p.59, para 75.

[1218] Article 10 of the Declaration of Montevideo approved by the Seventh International Conference of American States in 1933, reproduced in *YILC*, 1974, Vol.II, Part Two, p.212.

[1219] In its revised Draft Convention on Industrial and Agricultural Uses of International Rivers 1965, the Inter-American Judicial Committee provided that the utilization of the waters of an international river or lakes for industrial or agricultural purposes must not prejudice the free navigation thereof in accordance of the applicable rules, see Article 5, Pan American Union, Report of the Inter-American Judicial Committee 1965, reproduced in *YILC*, 1974, Vol.II, Part Two, p.350.

> Although, it has also been applied to some extent outside Europe, preference of the principle of free navigation over any other uses of international watercourses was established mainly in the light of European needs. When viewed on a world scale, the justification for this preference seems much more doubtful and has to depend on the economic and geographic circumstances peculiar to each waterway. In the case of the Nile, for example, which is undeniably an international river, since it rises in Ethiopia, traverses the Sudan and crosses Egypt to empty into the Mediterranean, the priority to be granted the right of navigation no longer appears to have any justification.[1220]

Unless and otherwise provided for by watercourse States through treaty or custom, the priority of one kind of water use over others ended with the adoption the 1997 UN Convention. The no priority rule also applies to navigational use because in the absence of treaty obligations a riparian States is not obliged to maintain the river for the freedom of navigation.[1221] After the adoption of the 1997 UN Convention, the Special Rapporteur made the following comments as to Article 10 of the 1997 UN Convention:

> Although there is no doubt some countries may fear that the concept of 'vital needs' could become a loophole, enabling a state to justify its use on this ground even when the involvement of vital needs is highly debatable. There are other questions as well. For example, would it be open to state A to argue that its use should prevail over one of state B on the ground that A produces food needed to prevent starvation in state C? Nevertheless, since the 'statement of understanding' is based on the International Law Commission's commentary, which in any event would be relevant to interpretation of paragraph 2, it probably adds no new problem.[1222]

Read together, Articles 1 and 10 of the 1997 UN Convention can be summarized thus, that even though there is no inherent priority of water use, water use for vital human needs are a priority against navigational use and non-navigational uses. All kinds of water use are subject to equitable utilization and the aim of the uses is to attain sustainability of the watercourses. Moreover, it can also be said that Articles 1 and 10 together provide an interface between navigational use and non-navigation uses on the one hand, and a balance between priority and no-priority between different kinds of uses, on the other. At the same time, both Articles provide integration between use and protection of international watercourses.

[1220] *YILC*, 1974, Vol.II, Part Two, p.59, para 75.
[1221] *Sliedrecht Insurance Co. and Engelaar v. State of the Netherlands*, ILR, 1951, Case No. 35.
[1222] McCaffrey and Sinjela, 1998, p.103.

14.3.4. Sustainable Development and Integrated Management

Since sustainable utilization is generally regarded as the basis for harmonizing the regimes of uses and protection of international watercourses, we will discuss the pertinent provisions of the 1997 UN Convention. In this regard, we will focus on the connection between equitable utilization and sustainable development as well as whether sustainable use or equitable utilization modifies or governs the other, taking into account Articles 5 and 24 of the 1997 UN Convention.

Referring to Article 5 of the 1997 UN Convention in its judgment concerning the *Danube Gabcikovo-Nagymaros Project Case*,[1223] the ICJ recognized the interrelationship between equitable utilization and the sustainable use of international watercourses. Article 5(1) of the 1997 UN Convention includes sustainable utilization of international watercourses, using the principle of equitable utilization as a substantive rule, providing that watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse.

Though the principle of equitable utilization provides for the legitimacy of water uses, it may not be the ultimate test for the legality of an activity. It is self-evident that all equitable uses may not necessarily be sustainable use. As regards sustainable development, the ILC's commentary to its 1994 Draft Article 5 says that "in line with the principle of sustainability, water resource development and management should be planned in an integrated manner, taking into account long-term planning needs and those with narrower horizons". Such management and development "should incorporate in particular, the environmental, economic and social considerations". It should include the requirements of all users as well as those relating to prevention and mitigation of water-related hazards and constitute an integral part of "the social-economic development planning process."

It should also be recalled that both equitable utilization and sustainable development have their own criteria.[1224] At the same time, in the context of the general policy principles of sustainable development, equitable

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[1223] *ICJ Reports,* 1997,pp.1-72, para 147. The establishment of a joint regime will also reflect in an optimal way the concept of common utilization of shared water resources for the achievement of several objectives mentioned in the Treaty, in accordance with Article 5(2) of the 1997 Convention "Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the right to utilize the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present Convention."

[1224] The criteria for the principle of equitable utilization are enumerated in Article 6 of the 1997 UN Convention.

utilization is one of the criteria for sustainable development. On the other hand, the principle of equitable utilization of international watercourses is now a well-established principle to be applied in determining the rights of watercourse States as to the use allocation, on a case-by-case basis. Articles 5 and 6 of the 1997 UN Convention provide for this in a combined manner. While Article 5 and Preamble of the 1997 UN Convention speak of sustainable utilization, sustainable development is only mentioned in Article 24(2)(a). This is a procedural rule which provides:

> 1. Watercourse States shall, at the request of any of them, enter into consultations concerning the management of an international watercourse, which may include the establishment of a joint management mechanism.
> 2. For the purposes of this article, 'management' refers, in particular, to:
> (a) Planning the sustainable development of an international watercourse and providing for the implementation of any plans adopted; and
> (b) Otherwise promoting the rational and optimal utilization, protection and control of the watercourse.[1225]

For analyzing the relationship between sustainable development and equitable utilization, and in illustrating the relationship between the regimes of environmental protection and multiple uses of international watercourses, it is necessary to read Articles 5 and 24 of the 1997 UN Convention together.[1226] In doing so, a relevant question arises: which one, sustainable development or equitable utilization, modifies and/or governs the other? As the 1997 UN Convention is based on the ILC Drafts, the answer to this question may be found in the ILC's 1994 commentary to Article 24(2). It provides that:

> 3) Paragraph 2 indicates in general terms the most common features of a program of management of an international watercourse. The use of terms in this article such as 'sustainable development' and 'rational and optimal utilization' is to be understood as relevant to process of management. It in no way affects the application of articles 5 and 7, which establish the fundamental basis for the draft articles as a whole. Planning the development of a watercourse so that it may be sustained for the benefit of present and future generations is emphasized in subparagraph (a) because of its fundamental importance. While joint commissions have proved an effective vehicle for carrying out such plans, the watercourse State concerned may also implement plans individually. The functions mentioned in paragraph (b) are also common features of management regimes. Most of the specific terms

[1225] UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*,1997, p.700.
[1226] Ibid.

contained in that subparagraph are derived from other articles of the draft, in particular article 5.[1227]

It further states that:

> The adjective 'rational' indicates that the 'utilization, protection and control' of an international watercourse should be planned by the watercourse State concerned, rather than being carried out in a haphazard or ad hoc basis. Together, subparagraph (a) and (b) would include such functions as: planning of sustainable, multi-purpose and integrated development of international watercourses; facilitation of regular communication and exchange of data and information between watercourse States; and monitoring of international watercourses on a continuous basis.[1228]

This ILC commentary refers to sustainable development as a process, principle and objective of equitable utilization to be achieved on a case-by-case basis. Part IV of the 1997 UN Convention, particularly Article 24, provides for rules concerning the regime of the protection of international watercourses, containing the procedural rules focusing on protection, preservation and management.

Regarding the protection and preservation of ecosystems, Article 20 sets out "watercourse States shall, individually or jointly protect and preserve the ecosystems of international watercourses."[1229] Article 20 contains State obligations of both protection and preservation. These provisions, in general terms, carry a potentially powerful mandate.[1230] In justifying sustainable development, the ILC's 1994 commentary to its draft Article 20 states that "interactions between freshwater ecosystems on the one hand and human activities on the other are becoming more complex and incompatible as socio-economic development proceeds. Water basin development activities can have negative impacts too, leading to unsustainable development, particularly where these water resources are shared by two or more States."[1231]

Article 21 concerns the prevention, reduction and control of pollution of international watercourses, and reads:

> 1. For the purpose of this article, 'pollution of an international watercourse' means any detrimental alteration in the composition or quality of the waters of an international watercourse which results directly or indirectly from human conduct.

[1227] *EPL*, 24/6, 1994, pp.354-355.
[1228] Ibid.
[1229] Doc.A/51/869, April 11, 1997.
[1230] McCaffrey and Sanjela, 1998, p.103.
[1231] The ILC's commentary to its 1994 Draft Article 20, see EPL, 24/6, 1994, p.351.

2. Watercourse States shall, individually and, where appropriate, jointly, prevent, reduce and control the pollution of an international watercourse that may cause significant harm to other watercourse States or to their environment, including harm to human health or safety, to the use of the waters for any beneficial purpose or to the living resources of the watercourse. Watercourse States shall take steps to harmonize their policies in this connection.
3. Watercourse States shall, at the request of any of them, consult with a view to arriving at mutually agreeable measures and methods to prevent, reduce and control pollution of an international watercourse, such as;
a) Setting joint water quality objectives and criteria;
b) Establishing techniques and practices to address pollution from point and non-point sources; and
c) Establishing lists of substances the introduction of which into the waters of an international watercourse is to be prohibited, limited, investigated or monitored.[1232]

The 1994 Draft Article 21(2) proposed by the ILC contained an absolute prohibition of any pollution that may cause significant harm, including pollution within the scope of Draft Article 7, regardless of whether or not it results in significant harm to other watercourse States. Draft Article 21(2) provided that "watercourse States shall, individually or jointly, prevent, reduce and control the pollution of an international watercourse that may cause significant harm to other watercourse States or to their environment, including harm to human health or safety, to the use of the waters for any beneficial purpose or to the living resources of the watercourse."[1233]

The significance of Article 21 of the 1997 UN Convention with respect to the ILC's 1994 Draft Articles is the addition of Paragraph 3, requiring that watercourse States are to consult each other about pollution control. This shifted the emphasis from flat prohibition of harm to a process of mitigation of harm. In its 1991 Draft Article 7, the ILC accorded primacy to no-harm over equitable utilization. States were required to consult whether the use of an international watercourse is equitable, and if harm can be mitigated or be compensated for.

According to Article 7 of the 1997 UN Convention, equitable use should be allowed to continue even if it causes harm to another State. However, the harming States are obliged to minimize the harm to the greatest extent possible, in order to compensate the other State for any unavoidable harm.

In general, in the international context of development, the principle of equitable utilization appears to be a criterion of sustainable development. However, in the particular context of the utilization of international watercourses, sustainable use is one criterion of equitable utilization as

[1232] UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*, 1997, p.700.
[1233] *EPL*, 24/6, 1994, pp.354-355.

provided for in Articles 5, 6 and 24 (collectively) of the 1997 UN Convention. In conclusion, it may be posited that the equitable utilization of watercourses may not necessarily be sustainable in all cases, and all sustainable use may not be equitable. Some kinds of harm naturally will occur as a result of any kind of use. In order to reach the objective of sustainable development, harm needs to be prevented to a maximum degree, and the damaged parties be compensated.

14.4. Implementation Mechanisms

The basis for the implementation of the 1997 UN Convention is the negotiation and conclusion of appropriate bilateral or multilateral treaties (Article 3.3). There are substantive obligations in the Convention for cooperation in the process of implementation of equitable utilization and the no-harm rule (under Articles 5, 6, and 7). Apart from this, the Convention contains a general obligation for cooperation among watercourse States (Articles 8), and calls for institutional cooperation (Article 24), including cooperation for the regular exchange of data (Article 9), planned measures (Articles 11 to 19), regulation of flow of waters (Article 25), protection of water installations (Article 26), and for measures to protect against harmful conditions or emergency situations (Articles 27 and 28).

In addition to its Article 5, Articles 1(d) and 19 are relevant for the implementation of the 1997 UN Convention. According to Article 1(d), a regional economic integration organization can be a party to the Convention, which "means an organization constituted by sovereign States of a given region, to which its member States have transferred competence in respect of matters governed by this Convention and which has been duly authorized in accordance with its internal procedures, to sign, ratify, accept, approve or accede to it." This is an important provision because the regional organizations play a vital role in the regional integration process where resource management and environmental protection is needed. This can be seen particularly with the process of the EU, and to a limited extent with the provision of the Amazon Cooperation Council and the SADC region.

As regards the implementation of planned measures, Article 19 of the 1997 UN Convention provides that:

> 1) In the event that the implementation of planned measures is of the utmost urgency in order to protect public health, public safety or other equally important interests, the State planning the measures may, subject to Articles 5 and 7, immediately proceed to implementation, notwithstanding the provisions of Article 14 and paragraph 3 of Article 17

2) In such case, a formal declaration of the urgency of the measures shall be communicated without delay to the other watercourse States referred to in article 12 together with the relevant data and information.
3) The State planning the measures shall, at the request of any of the States referred to in paragraph 2, promptly enter into consultations and negotiations with it in the manner indicated in paragraphs 1 and 2 of Article 17.[1234]

It should be reiterated that watercourse States are required to take planned measures as stated in Part III (Articles 11-19) of the Convention. This includes obligations to exchange information, consultations and mutual negotiation. Notification concerning the possible adverse effects of planned projects must be given to the concerned States. In doing so, Articles 5 and 7 must be kept in mind, especially paragraph 3 of Article 17, which provides for a period of six months of reply unless otherwise agreed, and the provisions of Article 14, which requires that the notifying State during the period for reply should not proceed with the projects. If there is no reply to the notification within six months from the notified State, the notifying State may proceed with the planned measures, which is also the subject to obligation to adhere to Articles 5 and 7 (failure to reply within the prescribed time may offset the claim of compensation).

A watercourse State can request the planning State for the application of the rules concerning notification (Article 18). If they dispute the need for the notification, they are obliged to undertake consultation and negotiation under Article 17. Any consultation and negotiation must be made in accordance with Articles 5 and 7.

14.5. Dispute Settlement

Article 33 of the 1997 UN Convention provides for rules of international watercourse dispute settlement,[1235] which may be used for dispute

[1234] UNDoc.A/RES/51/869, May 21, 1997; 36 *ILM*, 1997, p.700.

[1235] Article 33 of the 1997 UN Convention is as follows:

1) In the event of a dispute between two or more Parties concerning the interpretation or application of the present Convention, the Parties concerned shall, in the absence of an applicable agreement between them, seek a settlement of the disputes by peaceful means in accordance with the following provisions.

2) If the Parties concerned can not reach agreement by negotiation requested by one of them, they may jointly seek the good offices of, or request mediation or conciliation by, a third party, or make use, as appropriate, of any joint watercourse institutions that may have been established by them or agree to submit the dispute to arbitration or to the International Court of Justice.

3) Subject to the operation of paragraph 10, if after six months from the time of the request for negotiations referred in paragraph 2, the Parties concerned have not been able to settle their dispute through negotiation or any other means referred to in paragraph 2, the dispute shall be submitted, at the request of any of the parties to the dispute, to impartial fact-finding in accordance with paragraphs 4 to 9, unless the parties otherwise agree.

prevention as well. In striving for equitable utilization and sustainable development, Article 33 may be used to balance between the regimes of uses on the one hand, and between the regimes of uses and protection, on the other. According to Article 33 of the 1997 UN Convention (which appears to be an elaboration of Article 33 of the UN Charter), if, after six months, the concerned watercourse States have not been able to resolve their dispute through diplomatic means, the dispute is to be submitted, at the request of any one of the Parties, to an impartial Fact-Finding Commission or, if mutually agreed, to mediation or conciliation or adjudication.

This Fact-Finding Commission is an innovation of particular importance. It is obligatory to establish the Commission at the request of any one of the concerned watercourse States. This is important because most of the international watercourse conflicts are a mixture of facts and value judgments. This provision, if applied, may be an important avenue to distinguish the facts from opinions, which may help in finding a negotiated settlement that focuses on the needs of the parties. However, some critics

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4) A Fact-finding Commission shall be established, composed of one member nominated by each Party concerned and in addition a member not having the nationality of any of the Parties concerned chosen by the nominated members who shall serve as Chairman.
5) If the members nominated by the Parties are unable to agree on a Chairman within three months of the request for the establishment of the Commission, any Party concerned may request the Secretary-General of the United Nations to appoint the Chairman who shall not have the nationality of any of the parties to the dispute or any riparian State of the watercourse concerned. If one of the Parties fails to nominate a member within three months of the initial request pursuant to paragraph 3, any other Party concerned may request the Secretary-General of the United Nations to appoint a person who shall not have the nationality of any of the parties to the dispute or of any riparian State of the watercourse concerned. The person so appointed shall continue a single-member Commission.
6) The Commission shall determine its own procedure.
7) The Parties concerned have the obligation to provide the Commission with such information as it may require and, on request to permit the Commission to have access to their respective territory and to inspect any facilities, plant, equipment, construction or natural features relevant to for the purpose of its inquiry.
8) The Commission shall adopt its report by a majority vote, unless it is a single-member Commission, and shall submit that report to the Parties concerned setting forth its finding and the reasons therefore and such recommendations as it deems appropriate for an equitable solution of the dispute, which the Parties concerned shall consider in good faith.
9) The expenses of the Commission shall be born equally by the Parties concerned.
10) When ratifying, accepting, approving or acceding to the present Convention, or at any time thereafter, a Party which is not a regional economic integration organization may declare in written instrument submitted to the Depository that, in respect of any dispute not resolved in accordance with paragraph 2, it recognizes as compulsory ipso facto and without special agreement in relation to any Party accepting the same obligation:
(a) Submission of the dispute to the International Court of Justice; and /or
(b) Arbitration by an arbitral tribunal established and operating, unless the parties to the dispute otherwise agreed, in accordance with the procedures laid down in the annex to the present Convention.
A Party, which is a regional economic integration organization, may make a declaration with like effect in relation to arbitration in accordance with subparagraph (b).

note that Article 33 of the 1997 UN Convention gives priority to legal adjudication rather than negotiation. At the same time, it should be remembered that adjudication or arbitration settlement depends upon the consent of the parties to the cases.

The Annex to the 1997 UN Convention provides for an elaborated procedure of arbitration. In particular, according to Article 4(2) of the Annex, if one of the parties to the disputes does not appoint an arbitrator within two months of receipt of requests, the other party may inform the President of the ICJ, who shall make the designation within a further two-month period.

Apart from Article 33, the key elements harmonizing the legal regimes of uses and protection in the 1997 UN Convention are the equitable utilization and sustainable development of international watercourses. This implies a process of distributive justice as it pertains to resource sharing. So long as the power position of States determines the equitable utilization and sustainable development of international watercourses, the success of Articles 5, 6, 7 and 33 would be limited in achieving the harmonization of the legal regimes of uses, protection of international watercourses. Instead of negotiations of the positions, this will require negotiations of the needs of the watercourse States, balancing the different regimes and achieving the equitable utilization and sustainable development. As long as relations between watercourse States are amicable, their differences can be (and have been) solved through diplomatic means, which are provided for under Article 33 of the 1997 UN Convention and Article 33 of the UN Charter. However, one has to realize that adverse relations between watercourse States complicate the situation, making objective fact-finding difficult, if not impossible.

The bulk of international disputes is settled through negotiation, and a large number of international watercourse treaties are proof in this regard. However, the disadvantage of the negotiation method of settlement is that, more often than not, the facts are not ascertained objectively, particularly due to the absence of neutral evaluation by a third party. In the absence of an impartial and moderating third party, negotiating parties cannot be prevented from putting forward exaggerated claims. This is especially true when one party's bargaining position is superior to the others. It is against this background that the strengths and shortcomings of the Article 33 of the 1997 UN Convention needs to be viewed.

In conclusion, it can be said that the dispute settlement rules provided in Article 33 of the 1997 UN Convention concerning fact-finding commission is an innovation in relation to international watercourse treaties. As made clear by the UN Charter (Article 33), if the concerned parties fail to engage in negotiation after it is requested by one of them, they may jointly seek the good offices of, or request mediation or conciliation by, a third party, or make use, as appropriate, of any joint watercourse institutions that may

have been established by them. They may also agree to submit the dispute to arbitration or adjudication through the ICJ.

The significant innovation of the 1997 UN Convention is that if, after six months from the time of the request for negotiations, the concerned parties have not been able to settle their dispute through negotiation or any other means, the dispute shall be submitted, at the request of any of the parties to the dispute, to impartial fact-finding, which can be established by the parties. The parties can nominate one member each to the fact-finding commission. An additional member to be nominated as Chairperson cannot be a national of the disputing parties. At the request of the parties, the Secretary General of the UN can appoint the Chairperson. For conflicts relating to data on uses and protection of international watercourses, the fact-finding commission is an appropriate means of dispute settlement.

The main constituent elements of the regimes of uses and protection and management paradigm of the 1997 UN Convention can be illustrated in the following table:

	CA	SP	IM	DS
The 1997 UN Convention	*iw*	*eu/nhr/sd*	*bi-mul*	*ad/ffc*

CA = Concepts and Approaches (*iw* = *international watercourse*); SP = Substantive Principles (*eu/nhr/sd* = *equitable utilization*, *no-harm rule*, *sustainable development*); IM = Implementation Mechanisms (*bi-mul* = *bilateral and multilateral cooperation*); DS = Dispute Settlement venues (*ad/ffc* = *adjudication/fact-finding commission*)

This table shows that the 1997 UN Convention is based on the concept of international watercourses, which is governed by the principle of equitable utilization, sustainable development and no-harm rule.

Implementation of the Convention is based on cooperation and participation of States on appropriate bilateral and multilateral basis. Apart from the other traditional forum or venue, dispute settlement is suggested through fact-finding commission. Thus, the legal regimes established by the 1997 UN Convention include navigational use, non-navigational uses and environmental protection, which are governed by the principles of equitable utilization, sustainable development and integrated management.

14.6. Appraisal

Evaluating the legal regimes of the 1997 UN Convention, it should be noted that despite its title, which specifies non-navigational uses, the Convention deals with navigational use to the extent that one regime affects the other. Navigational use is recognized in the Convention as one of the criteria of the equitable utilization, aiming at environmental protection and improvement of international watercourses.

Articles 1, 2, 3, 5, 6, 7 and 10 of the Convention establish the legal regimes of multiple uses, which interrelates them, assumes an integrated legal perspective, and harmonizes the use allocation, protection and improvement of international watercourses. Article 1, which defines the

scope of the 1997 UN Convention, recognizes the relationships between the regime of navigational use and non-navigational uses, which in turn combines the regimes of uses and protection of international watercourses. Article 2 defines the watercourse as a "system", linking surface waters with groundwaters by virtue of their physical relationships. An international watercourse, defined in Article 2, is one where parts of the watercourse are situated in different States.

As we have discussed earlier, some watercourse treaties have adopted the international river concept concerning State boundaries and navigational use, others have adopted the river concept for navigational use and non-navigational uses, and yet others have adopted the watercourse concept for all kinds of uses, including protection. Still, others have adopted the drainage basin concept for the regimes of uses and protection. In this context, some may doubt the relevance of the international watercourse concept adopted by the 1997 UN Convention. However, the study of the legal regimes demonstrates the emergence of multiple concepts, i.e. the classic "international river" concept (used with regard to navigation and boundary demarcation between States); the "international river basin system" (which includes the tributaries of the river) and; the "international drainage basin", which is a wider concept that includes the entire drainage basin and recognizes the basin as a hydrological unit. From the environmental perspective, this latter concept recognizes all elements of eco-system management, and arguably the drainage basin is the most appropriate concept where the regime of environmental protection is concerned.

Since the international watercourse concept appears narrower in comparison to the international drainage basin concept, it seems that the international watercourse concept may be limited to quantitative uses, such as water use allocation. Even though the international drainage basin concept (Article II of the 1966 ILA Helsinki Rules) was supplanted by the international watercourse concept (Article 2 of the 1997 UN Convention), there is still a need for recognition of the legal concept of the hydrological cycle, in order to establish a holistic and integrated approach of the legal regimes of the world's fresh waters. Finally, it should be underlined that "international shared water concept" is also being recognized in the modern development of the law.

Article 3 of the 1997 UN Convention contains the framework rules for future agreements, which can equally be applicable to the pre-existing (i.e. pre-1997) agreement. Article 3 assumes that watercourse States would enter into agreement or applies the Convention as governing law, in the absence of an agreement, as it concerns the regimes of uses and protection. The right of the third State is also recognized in Article 3, which means that if two of the three States sharing an international watercourse reach an agreement of uses, the two States are obliged to refrain from harming the interests to the third State. Articles 5, 6 and 7 of the 1997 UN Convention

provides for the substantive principle of equitable utilization, its criteria and no-harm rule, respectively. The substantive principle concerns the regimes of uses and protection. In addition, the regime of protection and improvement is provided for in Part IV (Articles 20-26) of the 1997 UN Convention. Part IV of the Convention requires watercourse States to protect and preserve the ecosystems of international watercourses. These obligations include the prevention, reduction and control of pollution of an international watercourse, and it signifies that States are under obligation to combat pollution, which causes significant harm or may cause significant harm. The watercourse States are also required to prevent introduction of alien or new species, including land based marine pollution.

The substantive principles, provided for in Article 5, 6 and 7 of the 1997 UN Convention, have helped in resolving the classic controversy relating to absolute sovereignty, which was the basis of argument in the past in favor of either the upper or lower riparian. Prior to the time of universal recognition of the principle of equitable utilization, the riparian States had a sovereign right to participate in the sharing of the watercourses, but this right was also governed by the principles of good neighborliness, territorial sovereignty and prohibition of abuse of rights.

The principle of equitable utilization is not in itself a right and duty of any given State, but it constitutes the basis of the rights and duties of States, including: 1) a specific right to use allocation; 2) to undertake certain activities on the watercourse; and 3) the duty to protect watercourses and to do no harm to the other. In determining the rights of watercourse States upon their international watercourses, all factors and circumstances must be taken into account on a case-by-case basis.

In the process of weighing the various relevant factors for the establishment of an equitable regime for the utilization of international watercourses, no factors have inherent priority over the other. In the event of a conflict between uses, basic human needs such as drinking water, irrigation and food production are to be given special regard (Article 10). This also means that there is a distinction between water as an essence of human life and water as a commodity. As there is no presupposed priority of the watercourse uses under the principle of equitable utilization, both the regimes of navigational use and non-navigational uses are subject to the principle.

The relationship between the principles of equitable utilization and sustainable development exhibits the relationships between the regimes of uses and protection of international watercourses. We have found that several watercourse treaties recognize the principles of equitable utilization and sustainable development. In doing so, they also recognize relationships between the protection and use of international watercourses. The term sustainable "utilization" and "development" have different connotations in Articles 5 and 24 of the 1997 UN Convention, respectively.

In terms of international watercourse uses, both the principles of equitable utilization and sustainable development appear to be complementary rather than contradictory. This does not mean that all equitable utilization is necessarily sustainable and vice versa. While sustainable "utilization" is a criterion of equitable utilization under Article 5 of the 1997 UN Convention, sustainable "development" under its Article 24 is an objective in a wider policy of international watercourse management. Sustainable "utilization" under Article 5 appears to be a primary criterion with respect to Article 6. Equitable utilization is an entitlement of the right to use allocation and to not cause significant harm (Article 7 of the 1997 UN Convention). This means that appreciable harm is a matter of equity solution. In cases where there is a detrimental effect from the use, such as catastrophic damage to the environment or human health, such development projects fall within the criteria of prohibition.

Sustainable development and equitable utilization have their own criteria in terms of international development in general, and watercourses in particular. In Article 24 of the 1997 UN Convention, equitable utilization constitutes the criteria of sustainable development. In regard to equitable utilization of international watercourses in particular, sustainable "utilization" appears to be one of the criteria of equitable utilization. In cases related to Article 24, sustainable development appears to be a process rather than a principle, which is aimed at influencing lawmaking rather than adjudication. In cases related to Articles 5, 6 and 7 of the 1997 UN Convention, sustainable use is a principle objective of equitable utilization, which is to be taken into consideration in the adjudication of watercourse related disputes. However, the implementation of sustainable use and equitable utilization may be different from case to case.

The integrated management paradigm, as found in Part IV of the 1997 UN Convention, includes protection, preservation and management of international watercourses. This marks the significant paradigm shift from a holistic approach towards an integrated management of international watercourses. The provisions of the 1997 UN Convention may not legally be as significant as those in the 1992 ECE Helsinki Convention, integrating the regime of environmental protection and uses. Nonetheless, the 1997 UN Convention is an important development, in that it frames the regime of environmental protection within the regime of use allocation. According to the 1992 ECE Helsinki Convention, the obligations of riparian States are the duty to cooperate, polluter pays principle, precautionary principle, as well as the duty to compensate for loss. All these principles signify sustainable development and equitable utilization of transboundary watercourses and international lakes. Unlike the 1992 ECE Convention, the 1997 UN Convention sets basic minimum standards concerning the uses, protection and improvement of watercourses. Above all, the 1997 UN Convention is a means of interpretation for the specific watercourse agreements that already exist or will be concluded in the future.

It is obvious that the complete success of the 1997 UN Convention depends upon entering into force (on the ninetieth day following the date of deposit of the thirty-fifth instrument of ratification by the parties - Articles 35 and 36). However, the substantive principles embodied in the 1997 UN Convention are customary norms, thus they are already recognized and applied concerning the regimes of multiple uses and protection of international watercourses.

PART VI: DEVELOPMENT OF THE LEGAL REGIMES THROUGH COURT PRACTICE

International watercourses have long been not only the subject of cooperation among riparian States, but also conflicts, which in many cases have been settled either through the negotiation of treaties or adjudication. For this part of the study some important cases decided by international tribunals, arbitration panels and courts are selected in order to examine the possible elements of an integrated approach to the regimes of navigational use, non-navigational uses and environmental protection.

To demonstrate the development and interrelationships of the regimes the selected cases will be reviewed in chronological order, starting from the 19th century to the late 20th century. Not each selected case in this section necessarily explore all constituent elements of an integrated management. Some of these decisions may signify the scope of the concepts and approaches, while others may be relevant to the substantive principles or institutional mechanisms. Still other decisions end up with the court foregoing a final settlement, and simply directing the parties to further negotiate. However, all these selected cases together will illustrate the development of the jurisprudence of international watercourses, and the endorsement of the idea of the community interest of the riparian States.

The judicial decisions are considered as persuasive for the determination of the rule of law, if not authoritatively determining it.[1236] Jurisprudence of the courts provides an insight of the main elements of integrated management, and contributes to the understanding of the evolution of the legal regimes and their interrelationships.

[1236] Lammers, 1984, pp.503-504.

CHAPTER 15: INTERNATIONAL COURT PRACTICE

15.1. Introduction

For the purpose of this chapter, nine significant cases relating to international watercourses have been selected. The study begins with the 19th century court practice, moves through the 20th century, and finally examines in detail the 1990's court practice.

15.2. Court Practice in the 19th Century

The first case is the *Helmand River Delta Case*[1237] between Afghanistan and Persia (Iran). This case is a classic illustration of the late 19th century practice of riparian States, where arbitration was the method used. The case involves the delimitation of riparian State boundaries and the use of waters of the boundary river. The decision of the case can be regarded as one the earliest recognitions of the principle of equitable utilization and prohibition of detrimental use.

The Helmand River is a boundary river which originates in the mountains 35 miles west of Kabul, and flows through 700 miles of territory across and between Afghanistan and Persia. A water dispute arose between Afghanistan and Persia concerning the delimitation of their boundary and the use of waters of the Helmand River in the Seistan Delta.

In 1872, the dispute was submitted for arbitration to British Commissioner, Fredrick Goldsmid. In the award, he decided that "Persia should not possess land on the right bank of the Helmand."[1238] This suggests that both banks of the Helmand (above the Kohak band) had been given to Afghanistan, not to Persia. The main bed of the Helmand below Kohak was, according to the decision, to be the eastern boundary of Persia with Afghanistan within the Seistan Delta. It was also held that "no works are to be carried out on either side calculated to interfere with the requisite supply of water for irrigation on the banks of Helmand."[1239] In this respect, this decision has contributed to the principle of fair allocation of waters to both parties concerning shared rivers.

The decision clearly underlined the concept that in the use of shared waters, one must take into account the interest of other riparian States. It made it clear that any detrimental effect, with or without malicious intent, is forbidden. Thus, this decision can be regarded as one of the foundations of the principle of equitable utilization and prohibition of detrimental use.

In 1902, a second dispute, related to the above mentioned decision, was submitted for arbitration to Colonel MacMohan, a British colonial official. He was asked to decide what amount of water fairly represented a requisite supply for irrigation for Persia by the 1872 award. Under the decision of this second arbitration, the commission in the Seistan Delta was created in

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[1237] *Report of the Helmand River Delta Commission*, Afghanistan and Iran, 1951, p.3.
[1238] Ibid.
[1239] Ibid.

order to determine the supply necessary for Persia's needs. This stated that one third of the water which reached the Seistan Delta would suffice for irrigation for Persia, leaving the rest for Afghanistan to divert or do with as they saw fit.[1240]

The award contained an important point in Clause I, which is particularly relevant to the uses and protection of watercourses. According to Clause I, no works are to be carried out on either side which might interfere with the required supply of water for irrigation on both banks of the river. However both sides have the right, within their own territories, to maintain existing canals, to reopen old or disused canals, and to make new canals from the Helmand River, provided that these actions do not cause the supply of water to drop below the level required for irrigation on both sides. The award rejected the notion of interference in the other party's utilization of water and supported each party's share of water for its own beneficial use without harming the other State.

In 1905, in yet another dispute over the Helmand River, the arbitration panel found that Persia was causing detrimental effects on Afghanistan's share of the waters, and declared Persia's action illegal. Persia, however, did not recognize the judgement.

15.3. Court Practice in the early 20th Century

The second case selected here, illustrating the development of the legal regimes, is the *Faber Case* (Germany/Venezuela Commission in accordance with the Agreement of 1903),[1241] which recognizes the security concern of the host State while allowing for the exercise of freedom of navigation on international rivers.

In terms of the main constituent elements of the regime of international watercourses, at the outset it can be said that the *Faber Case* concerns the international river concept and the freedom of navigation. In this case, freedom of navigation was set against the security concerns of the host State, and *peace* and *security* interests were prioritized over the freedom of navigation.

The *Faber Case* was a dispute between Germany and Venezuela in 1903, involving the upper riparian Columbia and the lower riparian Venezuela. The background of the case is that the German vessel *Faber* reached its destination at a Columbian port through the Catatumbo and Zulia rivers. As a riparian State, Venezuela asserted that the *peace* and *safety* of Venezuela's nationals had been endangered, and the country therefore had the right to prohibit navigation, even for seagoing vessels, in the Catatumbo and Zulia rivers. The Parties agreed to submit the case to an umpire – Duffield, who found that Venezuela's prohibition of freedom of navigation was wrong. Of the three arguments invoked by the Umpire, two of them, the peace and safety of Venezuela's nationals, were justifiable. But

[1240] Ibid.

[1241] *Ralston's Report*, 1903, p.609.

the third reason based on the convenience of Venezuela's nationals, appeared inadmissible, as the interest of international navigation ought to prevail over the convenience of State's nationals.

In the *Faber Case*, it was held that the right of navigation is not a right to send goods over inland waters, reshipping them into smaller and smaller vessels. The Umpire was inclined to limit the freedom of navigation to seagoing vessels. According to Colombos, in any event, the Duffield Umpire award was merely an *obiter dictum* and did not effect the merits of the case, since the goods on board the Faber could not have reached their destination (a Columbian port) except through a land trans-shipment and it is not within the duties of a riparian State to ensure such trans-shipment.[1242]

From the point of view of the regime of navigational use, the award of the *Faber Case* recognizes that the peace and safety of the host State, i.e. the peace and safety of Venezuela's nationals, were justifiable. At the same time, the exercise of sovereignty over the rivers crossing its territory must not be used in such a way as to hinder or put obstacles in the path of their navigation, which constitute the necessary means of transportation and communication between riparian States. Thus, it could be said that the arbitration award of the *Faber Case* recognized the relative sovereignty of the State concerning the navigational use of international rivers.

This case demonstrates a shift in arguments from absolute sovereignty to relative sovereignty. The freedom of navigation on international rivers has been justified on the basis of necessity and natural rights since the 17th century. However, it is also clear that the host State has full sovereignty over its territory, land or water. The *Faber Case* clearly strikes a balance between peace and safety of the host state on the one hand and the freedom of navigation for other States.

15.4. Court Practice in the 1920's

The third case selected for the exploration of the legal regimes is from the 1920's. The *European Commission of the Danube Case* (1927)[1243] reiterated the freedom of navigation for ships coming in or leaving ports of international rivers.

The background and the outcome of this case is as follows. The 1812 Treaty of Bucharest reserved the right of navigational use of the lower Danube for Russia and Turkey. By the 1829 Treaty of Adrianople, Russia obtained a monopoly of navigation over the Sulina mouth of the Danube. The 1856 Treaty of Paris terminated this monopoly and established the European Commission of the Danube was set up, consisting of Great Britain, Austria, France, Turkey, Russia, and Sardania.[1244] The Commission was responsible for undertaking the maintenance of Danube navigation.

[1242] Colombos, 1967, p.236.

[1243] *PCIJS,B*, No.14, 1927, pp.64.

[1244] Article XV of the Peace Treaty of Paris, BFSP, 46, p.8.

This was an additional commission to the permanent commission, known as the "River Commission," composed of Austria, Bavaria, Turkey and Wittenberg. The European Commission of the Danube was to exercise its authority completely independent of the territorial authorities.[1245] In 1883, the jurisdiction of the European Commission of the Danube was extended from Galatz to Braila.

Until 1919, there were eight sections of the Danube, each having a different regime. The International Commission of the Denube was given competence over the river from Ulm to Braila and from there to the Black Sea. This Commission was responsible for administration and the European Commission of the Danube had the judicial powers to cancel navigational licenses and/or fine license holders. On the upper section of the Danube, dues were to be moderate, and on the lower section, navigation was to be unrestricted and open to all flags.

In 1927, the Permanent Court of International Justice rendered its advisory opinion concerning the jurisdiction of the *European Commission of the Danube between Galatz and Braila*.[1246] In response to an opinion requested by the European Commission on the Danube, the Permanent Court of International Justice stated that while freedom of navigation includes the movement of vessels to and from the sea, it is not limited to such movement. Not only does the freedom of navigation apply to ships passing through a section of the river, but it also extends to ships coming into or leaving a port. The relevance of this case as to the evolution of the regimes of international watercourses will be further discussed below with reference to the *River Oder Case* and the *Oscar Chinn Case*, respectively.

The *River Oder Case* (1929)[1247] was about the exercise of freedom of navigation on the tributaries of an international river, and the Court made a landmark judgement by declaring the principle of the community interests of riparians States, which subsequently evolved into a new principle for the international watercourses.

The River Oder is an international river in Western Europe. Articles 331 and 332 of the 1919 Treaty of Versailles internationalized the River Oder. Since then, the International River Oder Commission was established, consisting of the riparian and non-riparian States, including Poland, Great Britain, Czechoslovakia, Denmark, France, Germany and Sweden. The other Six Members of the River Oder Commission (except Poland) asserted the jurisdiction over navigable sections of the River Oder, that include the tributaries Warta and Netze, situated entirely in Poland. The *Territorial Jurisdiction of the International Commission of the River Oder Case* concerned Article 331 of the 1919 Treaty of Versailles, which declared the River Oder (Odra) and certain other rivers as international rivers. Article 331 also

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[1245] Article 53, *BFSP*, 69, p.749.
[1246] *PCIJS,B,* 1927, No.14.
[1247] *River Oder Case* (United Kingdom, Czechoslovakia, Denmark, France, Germany, Sweden and Poland), *PCIJS,A*, 1929, No.23.

stated that all navigable parts of these rivers forms a "system", including the source to the mouth, which naturally provide access to the sea for more than one States.

The issue that was argued was whether the jurisdiction of the Commission extended to the tributaries. If not, the Commission's jurisdiction would be limited to the German sections of the tributaries. In its argument, Poland conceded that the right of passage of upstream States and freedom of access to the sea played a considerable part in the formation of the principle of the freedom of navigation on international rivers. In constructing Articles 331 and 332, the Permanent Court held:

> Satiations arising out of the fact that a single waterway traverses or separates the territory of more than one State, and the possibility of fulfilling the requirements of justice and the consideration of utility which this fact places in relief, it is at once seen that a solution of the problem has been sought not in the idea of a right of passage in favor of upstream States, but in that of a community interest of riparian State. This community of interest in a navigable river becomes the basis of a common legal right, the essential features of which are the perfect equality of all riparian States in the user of the whole course of the river, and the exclusion of any preferential privilege of any one riparian State in relation to the others. [1248]

Furthermore, the Permanent Court held that, it would be difficult to understand why the interests of all States contained in Article 332 should not be recognized, where the question of reaching the ports of the least upstream State was involved. The interest of all States is in the exercise of liberty of navigation in both directions.

Based on the above pronouncement of the Permanent Court, the issues contributing to the development of the different legal regimes of international watercourses through *the River Oder Case* could be illustrated as follows.

First, the Permanent Court basically recognized that the administration of the River Oder Commission in all navigable ports thereof "which naturally provide more than one State with access to the sea", extended also to the sections exclusively within the territory of Poland. Thus, the jurisdiction of the River Oder Commission extended to the sections of the Rivers Oder, Warta and Netze in the territory of Poland, intending that the regime of navigation of international watercourses extended to the tributaries of the navigable international rivers. Prior to this, there were ambiguities regarding whether or not the tributaries of a river should be considered as a part of the river or not.

[1248] Ibid, pp.26-27.

Second, apart from the interpretation of Articles 331 and 332, the Permanent Court in the *River Oder Case* also considered the principles governing international fluvial law - then known as water law - on the premise of the concept of the international river and freedom of navigation, established by the 1815 Final Act of the Congress of Vienna and applied or elaborated upon by subsequent conventions. The Permanent Court stated that:

> If the common legal right is based on the existence of a navigable waterway separating or traversing several States, it is evident that this common right extends to the whole navigable course of the river and does not stop short at the last frontier; no instance of a treaty in which the upstream limit of internationalization of a river is determined by such frontier rather than certain conditions of navigability had been brought to the concern of the Court.[1249]

Third, the equal rights of the riparian States are reflected in the interpretation of international fluvial law adopted in this case. The Court's statement with respect to "perfect equality" relates to the co-riparian States. The principle of free navigation ensures that each co-riparian State may utilize the entire navigable course of the river for transportation or communication without regard to territorial boundaries. However, this principle does not assure that navigation receives any priority over conflicting non-navigational uses. While freedom of navigation includes the movement of vessels to and from the sea, it is not limited to such movement.

It should also be noted that in 1927 the Permanent Court, in its advisory opinion concerning the jurisdiction of the *European Commission of the Danube Case,*[1250] suggested that the territorial sovereign had powers of regulation and jurisdiction over the ports, but the European Commission on the Danube had supervisory rights sufficient to ensure the freedom of navigation and equal treatment.[1251]

Finally, the most important issue relating to the development of the legal regimes of international watercourses through this case is the recognition of the community interest of the riparian States. As regards the application of the principle of the community interest of the riparian States to non-navigational uses, Lammers, argues that:

> For forms of use other than navigation, the legal notion of community of interest could not, of course, find exactly the same application [as to navigation]. As appears from the practice of States, each riparian State may make such other use of water only within the limits of its own

[1249] Ibid.
[1250] *PCIJS, B,* 1927, No.14.
[1251] Ibid.

territory. However, the other elements mentioned such as 'the perfect equality of all riparian States' and 'the exclusion of any preferential privilege of any one riparian States in relation to other' would in the line of the Court thinking, probably apply similarly to water uses other than navigation.[1252]

The Court's recognition of the community interest of the riparian States in the *River Oder Case* has not only strengthen the regime of navigational use of international rivers, but also raised a debate about the international community interest of sustainable development of international watercourses. Regarding transboundary watercourses, the community interest of the riparian States can consist of more than just navigational use. For example, Judge Weeramantry recognizes that the international community interest of sustainable development is an erga omens principle, and in its implementation all States have legitimate interests, irrespective of the territorial jurisdiction. Even though the non-riparian States do not "have a standing to complain of a failure to give proper weight to sustainable development in decisions regarding development projects"[1253] Boyle maintains that the general international community interest may extend to the protection of international watercourses like the issues of protection of human rights.[1254]

The State proposing a water project in an international watercourse is obliged to take into account the equitable and sustainable utilization of international watercourses, which arguably falls under the rubric of community interests of the riparian States, irrespective of the kinds of use involved. The present development of the law of international watercourse appears to recognize legitimate interests of non-riparian States in the implementation of sustainable development by the riparian States, and the

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[1252] Lammers, 1984, p.507.

[1253] For example, China has completed construction of a reservoir of the Three Gorges Dam, which is the world's largest hydroelectric power project, and has become an environmental concern to the international community. All preparatory work has been completed and the sluice gate has been closed to begin storing water from the Yangtze River, which is China's longest river. The completed reservoir would raise to 135 meters while water level on the upper reaches would rise no more than five meters daily so as to ensure the safety of shipping and the main dam. The 436 km long Three Gorges area, where the water level was 80 meters, will eventually become a vast lake after the water is fully stored by the huge reservoir. The construction of the project, which is estimated to have cost $20.7 billion, was began in 1993 and it is expected to be completed in 2009, with 26 hydro electricity power units having a combined capacity of 18.2 million kilowatts. The State Environmental Protection Administration (SEPA) oversaw a massive clean-up campaign around the reservoir. The local governments in the area were ordered to clear all rubbish and floating debris before water storage began, and to make concerted efforts to ensure removal of all possible sources of infectious disease.

[1254] Boyle, 1997, p.19.

duty of riparian States to consider mutual interests during the planning stages of the project.[1255]

15.5. Court Practice in the 1930's

The fifth case selected is the *Oscar Chinn Case* (1934),[1256] which defines the relationship between freedom of navigation and freedom of commerce.

The background to this case is as follows. Chapter IV of the General Act 1885 signed at Berlin contained the rules relating to the navigational use of the Congo River. The 1919 Convention of St. German-en-Laye revised the provisions of the General Act 1885. Article 1 of the 1919 Convention declared "the signatory powers undertake to maintain a complete commercial equality within the area defined by article 1 of the General Act of Berlin of February 26, 1885."[1257]

Great Britain brought the *Oscan Chinn Case* to the PCIJ, raising the question of interpretation of Article 1, following certain privileges granted by Belgium to the Belgian Company "Untra" of Congo, which guaranteed the company's dividends and protected it against eventual losses.[1258] By a bare majority only, the Court decided against Belgium, deciding that freedom of trade did not mean the abolition of commercial competition. The forbidden practice, based upon nationality, involved different treatment by reason of nationality, as between persons belonging to different national groups. A dissenting opinion of the judgment held that "it is not necessary to show that the discrimination was made because the person possessed a particular nationality. The wording of Article 1 supports a larger interpretation than that given to it by the majority of the Court."[1259]

The PCIJ in the *Oscan Chinn Case* suggested that navigation on international rivers includes the notion of transportation and the means of communication. It further stated that according to the universally accepted conception, freedom of navigation comprises freedom of movement for vessels, freedom to enter ports and make use of docks, to load and unload goods and to transport goods and passengers. The Court continued that freedom of navigation implies, as far as the business side of maritime or fluvial transport is concerned, freedom of commerce also. But it does not follow that in all other respects, freedom of navigation entails and presupposes freedom of commerce. [1260]

The *Oscar Chinn Case* decision clarifies the distinction as well as interconnection between the regimes. For example, the exclusion of the regime of navigational use from the non-navigational uses signifies that

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[1255] For example, according to the *Lake Lanoux Arbitration* (France-Spain *ILR*, 24, 1957, pp.101-142) and Article 5 of the 1997 UN Convention.
[1256] *PCIJS, A/B,* 1934, No.63.
[1257] *BFSP*, 76.
[1258] *PCIJS,A/B,* 1934, No.63, p.83.
[1259] Colombos, 1967, p.249.
[1260] *PCIJS,A/B*, 1934, No.63, p.83.

navigation is constituted by the above mentioned freedoms (movement, loading, unloading, etc.). This does not mean the exclusion of the rights and duties of riparian States as to the non-navigational uses and the pollution caused to international watercourses as a result of navigational use. Decision of the court in the case developed further the principles that have been pronounced in the *European Commission of the Danube Case* and the *River Oder Case.*

Another relevant case decided during the 1930's is the *River Meuse Case* (Belgium/the Netherlands 1937),[1261] which concerns the use allocation of shared watercourses. This case is important from the point of view that the Court decided the parties to negotiate with each other, especially on issues concerning the diversion of international rivers.

The River Meuse originates in France, passes through Belgium, and continues through the Netherlands, where it empties into the sea. In 1843, Belgium dug an artificial waterway - the Campine Canal - to link Antwerp with eastern Belgium by diverting the water of the Meuse River. The canal served both navigational and non-navigational purposes, including the irrigation of the Campine region. In 1851, 1856 and 1862, the Netherlands protested against the diversion of the Meuse River, complaining that:

> The Meuse being a river common to both Holland and Belgium, it goes without saying that both parties are entitled to make a natural use of the stream, but at the same time, following general principles of law, each is bound to abstain from any action which might cause damage to the other. In other words, they can not be allowed to make themselves masters of the water by diverting it to serve exclusively their own needs, whether for purpose of navigation or of irrigation.[1262]

In 1863, Belgium and the Netherlands concluded a Treaty to settle permanently and definitely the regime governing diversions of the waters from the Meuse for the feeding of navigation canals and irrigation channels.[1263] Article 1 of the 1863 Treaty provided for the construction, in the Netherlands' territory below Maastricht, of an intake from the Meuse which constitutes the feeding conduit for all the canals situated below the town Zuid-Willemsvaart, the canal de la Campine flowing partly in Belgium and the Netherlands, and the Turnhout Canal situated in Belgian territory. Quantity of water was fixed according to Article 4 of the Treaty. The question of diversion of the Meuse River was settled partly by the 1863 Treaty with a modification by the 1873 supplementary Treaty.[1264] However,

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[1261] *PCIJS, A/B*, 1937, No.70.

[1262] The Dutch Government's statement in a letter in 1862 to its Ambassador to London and Paris, see Lammers, 1984, p.241.

[1263] *ST/LEG/SER.B/12*,Legislative series Treaty No.157.

[1264] The 1863 Treaty in *MNRGT*,1, p.117 and the 1873 Treaty, ibid. Vol.7 p.4.

the later development and diversion of the Meuse River continued to be a source of dispute between the Netherlands and Belgium.

In 1930, Belgium constructed the Albert Canal to connect Liege with Antwerp, fed with water from the Meuse in Belgian territory above Maastricht. In 1936, the Netherlands filed an application to the PCIJ alleging Belgium violated the 1863 Treaty. In its reply, Belgium alleged that the Netherlands infringed upon the treaty by establishing a barrage on the course of the Meuse, the Julina Canal. Despite the criticism that the case should never have been submitted to the Court, and its judgment was a "waste of time" and that it "does not qualify as a precedent" for subsequent adjudication,[1265] the Court decision's in this case contributed to the development of the different legal regimes of international watercourses.

In its judgment rendered in 1937 the PCIJ held that the nature of the claim of the Netherlands lacked precision, but recognized that:

> There can be no doubt that, so far as the right of supervision is derived from the position of the intake on Netherlands territory, the Netherlands, as a territorial sovereign, enjoys a right of supervision which Belgium cannot possess.[1266]

The Permanent Court found nothing either in the arguments of the Netherlands or in the text of the 1863 Treaty that would prevent either the Netherlands or Belgium from, making as they see fit, provided that the normal level of water flow in the Zuid-Willemsvaart is not affected.[1267]

Since the diversion of water and its adverse impact to the environment are interconnected, the Court concentrated on the question of the maintenance of the normal level and flow in the Zuid-Willemsvaart area. In the course of the proceedings of the *River Meuse Case*, in written and oral arguments, the Parties made references for the application of the general rules of international law as regards the use allocation of international rivers.[1268] However, the Court held that, "the points submitted to it by the Parties in the present case do not entitle it to go outside the field covered by the Treaty of 1863. The point at issue must be determined solely by the interpretation and application of that Treaty."[1269]

The *River Meuse Case* is also significant for its reiteration of the principle of *estoppel*, i.e. State X's duty to refrain from acting against State Y on the grounds of an action that State X has itself committed. For example, Belgium's construction of a lock to extract water from the River Meuse was

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[1265] Romano, 2000, pp.243 and 245.
[1266] *Diversion of the Water from the River* Meuse (Netherlands v. Belgium), *PCIJS, A/B,* 1937 No.70, pp.4, 73-76.
[1267] Ibid.
[1268] Ibid.
[1269] Ibid, p.16.

contrary to the convention governing access to river water. However, a few years earlier the Netherlands had constructed a similar lock without any legal complaint from Belgium at that time. The Court considered the Netherlands' construction of the lock as grounds to invoke *estoppel* and thereby rejected the Dutch claim against Belgium. The Court also held the view that the burden of proof rests with the party pursuing a claim based on *estoppel*.

It is important to note here that there were not many relevant rules of customary international law at the time of the decision that could help the PCIJ to decide the *River Meuse Case*. Thus, the PCIJ directed to the Parties to reach a negotiated settlement. Decades after the decision, the two States concluded a series of treaties, entering into an agreement in 1961 to establish a direct connection between the Juliana and Albert Canals. The 1963 Treaty between Belgium and the Netherlands dealt with the legal issues concerning a canal linking the Scheldt to the Rhine rivers. Furthermore, the qualitative aspects of the waters are addressed by the 1994 Agreement on the Rivers Meuse and Scheldt and by the 1995 agreement concluded between the two countries which addressed the quantitative aspects.[1270]

15.6. Court Practices in the 1950's

The *Lake Lanoux Arbitration* (France/Spain 1957)[1271] is one of the most important cases with respect to the development of international environmental law. In this case, the arbitral court recognized the *relative sovereignty* of the riparian States as opposed to the *absolute sovereignty*, and highlighted the principles of *prior consent* and *duty of notification* between riparian States concerning water resource development projects.

Situated entirely in French territory, Lake Lanoux is fed by streams, and has a natural outlet, the Font-Vive River, a tributary of the Carol River. Flowing approximately 25 kilometers through French territory, the Carol River enters into Spanish territory at Puigcerda. About 6 kilometers from Puigcerda, the Carol joins the Segre River. After joining the Ebro River, the Carol and the Segre flows out the Mediterranean Sea.

The 1855 Treaty determined the France-Spain transfrontier, including boundary waters. This was succeeded by the 1866 Treaty and Additional Act relating to the flow of boundary waters safeguarding the right of Spain to natural flow of water in the River Carol.[1272] Since 1917, the question as to the use of Lake Lanoux was the subject of an exchange of views between the French and Spanish governments. However, in 1953 France proposed to use the water of Lake Lanoux by changing the natural flow for the

[1270] In this case, the PCIJ referred to the treaty as applicable law instead of considering the general principles of law, and took the view that it was only empowered by the Parties to decide the dispute by interpretation and applying the 1863 Treaty.
[1271] *ILR*, 24,1957, pp.101-142.
[1272] *BFSP*, 56, p.226.

purposes of hydroelectricity development. The French plan included the diversion of water from Lake Lanoux to the Ariege River about 800 meters up a mountain, where it would then drop to generate hydropower. The plan also included that the amount of water equivalent to the diverted water was to be returned to the Carol River through a tunnel leading from the Ariege to Carol River within French territory. The plan was communicated to Spain.[1273]

After receiving the French proposal, the Spanish Government requested that their French counterparts postpone the project until the meeting of the Mixed Commissions of Engineers.[1274] The French proposal was discussed in the 1955 meeting of the Mixed Commission, but Spain maintained its objections to the French plan. In the same year, the International Commission for the Pyrenees[1275] discussed the plan whereby the decision was reached to set up a Special Mixed French-Spanish Commission to draw up a proposal for the utilization of Lake Lanoux. France offered a guarantee for the maintenance of the flow of waters in Lake Lanoux of not less than 20 million cubic meters of water per year, but Spain continued in its opposition to any diversion of waters from Lake Lanoux. Spain suggested diverting water from Lake Lanoux without diverting the water from the Carol River, which would have reduced by 10% the expected output of electricity of the French proposal. France rejected the Spanish counter proposal.

In 1956, France and Spain agreed to submit the Lake Lanoux matter to an arbitration tribunal. The issue was whether France had the right to carry out the work without the prior agreement with Spain; was France in breach of the 1866 Treaty and Additional Act? This was to be decided by the arbitral tribunal.

In the *Compromis*,[1276] France argued that with a guarantee of a flow of water provided for in the project, it would not be injurious - from the point of view of the regime of environmental protection - to any of the rights provided in the 1866 Treaty determining French frontier water rights with Spain. Nonetheless, Spain argued that the execution of the project would be injurious to the right to natural flow of water in the River Carol - an issue related to the use allocation of transboundary waters. Moreover, Article 16 of the Additional Act of the 1866 Treaty required prior consent between the two countries for the execution of a project.[1277] Based on the French guarantee maintaining the flow of water in the Lake Lanoux not less than 20 million cubic meters of water per year, the tribunal found that the volume of water would increase rather than decrease.

[1273] *ILR*, 24, 1957, pp.105-142.
[1274] Established in 1949 by the International Commission of Pyrenees, which was created by the 1875 Exchange of Notes.
[1275] This was created by an exchange of notes, February 3, 1949 between France and Spain.
[1276] *ILR*, 24, 1957, pp.105-142.
[1277] Ibid.

The arbitral tribunal was not presented with argument from Spain concerning definitive pollution as a result of the diversion, which Spain might have claimed to be injurious to Spanish interests. Nevertheless, it is obvious that the diversion of water from the Carol and the water (equivalent to the diverted water) to be returned through the tunnel leading from the Ariege to Carol River would have a chemical composition or a temperature or some other characteristic that could be defined as pollution, which would have injured Spanish interests under the Additional Act.[1278] Spain failed to show the violations of its right in its argument, "affirming that the proposed work would entail an abnormal risk in neighborly relations or in the utilization of the waters." Spain argued that the works would bring France in a position of physical predominance, allowing it to cut off the flow of water from Lake Lanoux, or the restitution of the water equivalent. This according to Spain was contrary to the treaty, which established the principle of equality.

The tribunal rejected the Spanish arguments, and found out that the Treaty established single legal equality, rather than equality of fact, and that *bad faith* was not presumed in the well established principle of law. As to the argument on the grounds of diversion of water with restitution, the Tribunal found the French project was not contrary to the Treaty and the 1866 Additional Act. Spain argued further that France had not obtained prior consent as to the development of the project, and therefore Article 11 of the Additional Act had been violated. In the view of the arbitral tribunal in the absence of agreement between the parties, they have a duty to negotiate:

> In effect, in order to appreciate in its essence the necessity for prior agreement, one must envisage the hypothesis in which the interested States cannot reach agreement. In such a case, it must be admitted that the State that is normally competent has lost its right to act alone as a result of the unconditional and arbitrary oppositions of another State. This amounts to admitting a 'right of assent,' a 'right of veto,' which at the discretion of one State paralyses the exercise of the territorial jurisdiction of another. That is why international practice prefers to resort to less extreme solutions by conforming itself to obliging the States to seek, by preliminary negotiations, terms of agreement, without subordinating the exercise of their competencies to the conclusion of such agreement.[1279]

In examining the Spanish argument of prior agreement, the Tribunal, in light of the principle that no substantial change could be brought about by one riparian State without the prior consent of the other riparian States, found the Spanish argument not persuasive, particularly in establishing

[1278] *ILR*, 24, 1957, p.123.
[1279] Ibid, p.127-128.

that France was making a substantial change on the Carol River. As to the Spanish argument of the need for utilization of hydraulic power of international watercourses conditioned upon a prior agreement, the Tribunal concluded that it could not be established as a custom, even less as a general principle of law.

The tribunal further concluded that Article 1 of the 1923 Geneva Convention concerning the Development of Hydraulic Power Affecting More than One State in no way altered the freedom of each State within the framework of international law, to carry out developmental works in their respective territory. Only an obligation for the interested signatory States of the said agreement to join in a common study of a development program existed; "the execution of this program is, however, obligatory only for those States which have formally subscribed to it."[1280]

To reach a conclusion as to the question of whether France needed to obtain the prior agreement of Spain, the Tribunal held that it was the duty of France to take into consideration all the Spanish interests in a broader context and held that:

> According to the rule of *good faith*, the upstream State is under the obligation to take into consideration the various interests involved, to seek to give them every satisfaction compatible with the pursuit of its own interests, and to show that in this regard it is genuinely concerned to reconcile the interests of the other riparian State with its own.[1281]

The tribunal extensively discussed whether France violated their obligation to a downstream State based on the norms of customary international law. It recognized the rights of downstream States. Spain, the lower riparian, objected to the upper riparian, France's, plan to convert Lake Lanoux into a reservoir and to divert some of its water for hydroelectric generation, on the ground that Spanish interests in irrigation would suffer. Spain protested that the diversion of water would modify the hydrology of the drainage basin and make Spain more dependent on France. On the contrary, France assured Spain that water quality and quantity would be returned to the affected river before it crossed the border into Spain.

The tribunal upheld France's action after finding that Spain's water supply would not be diminished. The arbitral tribunal indicated, however, that if the water flow to Spain would have been appreciably reduced, so as to cause economic or environmental harm to Spain, it might have decided against France.[1282] With respect to all of the circumstances and the relevant physical unity of the river basin, the Tribunal came to the conclusion that France had sufficiently taken into consideration Spanish interests. The Tribunal, in its final decision, authorized France to carry out the project

[1280] Ibid, p.129-130
[1281] Ibid, p.139.
[1282] Ibid.

without the prior consent of Spain; France was not found in breach of the existing agreement with Spain.

From the point of view of the legal regimes of international watercourses, it should be noted that the *Lake Lanoux Arbitration* dealt with the regime of non-navigational use and that the navigational use was not at issue in the case. Though the question of environmental pollution was briefly mentioned in the deliberation of the arbitral tribunal pinpointed the lack of argument from Spain concerning any definitive pollution as a result of the diversion, which could have been injurious to Spanish interests. This is an important step in the evolution of the regime of environmental protection of international watercourses. It would have been a decisive factor for deciding in the matter of the French project just from the point of view of sustainable development.

While the diversion of the water from the River Meuse was intended for navigational and non-navigational uses, the diversion of water from the Lake Lanoux was aimed only at non-navigational uses. Nonetheless, both of the cases have contributed to the development of the legal regimes of international watercourses. Some elements, like prior consent between the riparian States, considered in the *Lake Lanoux Arbitration*, are recognized as a process leading to the solution of disagreement in line with the principle of equitable utilization.[1283]

Pursuant to the 1957 *Lake Lanoux Arbitration*, an agreement between France and Spain in 1958 established the French-Spanish Joint Commission and since then the two countries have been able to cooperate in the use and maintenance of the water.

15.7. Court Practice in the 1990's

The *Danube Gabcikovo-Nagymaros Project Case* (Hungary/Slovakia 1997)[1284] exemplifies the ICJ's practice in the 1990's and demonstrates the present state of development of the law of international watercourses. In this case, the Court recognized the international shared watercourse concept, and endorsed the principles of equitable utilization, sustainable development and the no-harm rule, as enshrined in Articles, 5, 6 and 7 of the 1997 UN Convention. The Court also recognized the right of fair share of waters of the riparian States. It also recognized that the riparian States are obliged to pay and receive compensation, i.e. an appropriate share to compensate for loss. The decision also recognized the community interest of riparian States by a strong endorsement of the principle of equitable utilization as a norm of customary international law. The background of the case is as follows.

After World War II, Rumania, Bulgaria and Hungary signed the Treaty of Peace in 1947 recognizing the freedom of navigation on the Danube River.[1285] In 1948, a conference was held in Belgrade with the participation

[1283] Articles 5, 6, and 7 of the 1997 UN Convention.
[1284] *ICJ Reports*, 1997, pp.1-72.
[1285] Colombos, 1967, p.246.

of the United States, Great Britain, France, the Soviet Union, Czechoslovakia, Hungary, Rumania, the Ukraine, Yugoslavia and Austria. The other three signatories of the 1921 Statute of the Barcelona Convention - Italy, Greece and Belgium, were absent from the Conference. The Soviet Union proposed a draft Convention, in which the United States, Great Britain and France refused to take part, but was accepted by a majority of votes and established the Danube Commission, charged with regulating navigation on the Danube, consisting solely of riparian States of the Danube.

Since 1948, several bilateral treaties have been concluded between the riparian States of the Danube to develop the European Waterways system of the Rhine-Main-Danube. From 1951, Hungary and Czechoslovakia began to negotiate for the regulation and development of the Danube River.

In 1977, Hungary and Czechoslovakia signed the Treaty Concerning the Construction and Operation of the Gabcikovo-Nagymaros System of Locks. This is a multipurpose project, which includes a variety of objectives among others to produce hydroelectricity, and to facilitate a 200 km navigable section of the waterway between Bratislava (Czechoslovakia) and Budapest (Hungary). This is an inland delta, in need of improvement in the areas of flood control, regulation of ice discharge and regional development.

The project required the building of two dams and a system of locks: 1) in the Czechoslovak territory at Gabcikovo (on the border with Hungary); and 2) in Hungarian territory at Nagymaros.

Shortly after the work began, an environmental lobby began to protest the projects. In 1981, the Hungarian Academy of Science concluded that there had not been a proper environmental consideration in the development of the projects, such consideration were outlined in the 1978, 1983 and 1989 Protocols.

In 1989, the Hungarian Government suspended the Nagymaros dam project and announced its intention to suspend the Gabcikovo Project, and seek to amend the 1977 Treaty. In 1991, while the negotiations for the amendment of the 1977 Treaty were being conducted, Czechoslovak authorities informed Hungary about the provisional solutions, among others, "Variant C", a project to be established within Hungarian territory. With the completion of this project, Czechoslovakia would divert about 80 to 90% of water at that point of the Danube.

In 1992, the Hungarian Government issued a declaration unilaterally terminating the 1977 Treaty. In 1992, after EC/EU mediation, Hungary and Czechoslovakia agreed to submit the dispute to the ICJ.[1286] In 1993, Slovakia became independent from the Czech Republic, and Hungary's dispute remained with Slovakia.

[1286] *ICJ Reports*, 1997, pp.1-72.

In the *Danube Gabcikovo-Nagymaros Project Case*, Hungary argued on the basis of ecological necessity,[1287] the impossibility of execution of the 1977 Treaty[1288] as a result of the fundamental change of circumstances,[1289] the material breach of the Treaty by Slovakia and the development of new norms of environmental law.[1290] By contesting each and every one of these grounds, Slovakia argued the principle of approximate application and counter measures for the implementation of the Treaty.[1291] Slovakia stated that Hungary must make reparation for the damage inflicted by its failure to fulfill its obligation and called on Hungary to take the appropriate measures for the continuous operation of the projects agreed upon under the 1977 Treaty.[1292]

The ICJ rendered its decision in 1997 in this case. The Court rejected the arguments of both of the Parties. By a vote of 11 to 4 the Court found reciprocal wrongful conduct by the Parties. The 1977 Treaty was declared valid. By a vote of 9 to 6, the Court confirmed Slovakia's right to proceed with the project, but recognized Hungary's right to an equitable utilization of the water of the Danube. By a vote of 12 to 3, Hungary was instructed to pay compensation to Slovakia for its loss.

There is a number of water use and protection issues involved in the *Danube Gabcikovo-Nagymaros Project Case* that are relevant to this study. Hungary's abandonment of its work on the agreed project under the 1977 Danube Treaty on the ground of ecological necessity is obviously an issue related to environmental protection of the Danube River. Czechoslovakia's alternative solution, "Variant C", diverting water from the Danube, is an issue related to use allocation for navigational improvement as well as non-navigational uses of international watercourses. Hungary's termination of the 1977 Treaty brings to the fore of breach of a treaty obligation under the law of the treaties.

The Court's recognition of international watercourses as a shared resource.[1293] This is an important factor for the integration of the regimes of international watercourses. This shall be seen in the light of the reluctance of the ILC with respect to the concept of shared resources and the way this concept found expression in the 1997 UN Convention.[1294] The Court

[1287] Ibid, para 40.
[1288] Ibid, para 97.
[1289] Ibid, para 95.
[1290] Ibid, para 96.
[1291] Ibid, paras 125 and 126.
[1292] Ibid, para 129.
[1293] Ibid, para 78.
[1294] The 1997 UN Convention excluded the concept of shared resources, which was proposed in the ILC's 1982 Draft Article 5. Use of waters, constituting a shared natural resource. To the extent that the use of waters of an international watercourse system in the territory of one System State affects the use of waters of the system in the territory of another system State, the waters are, for the purpose of the present articles, a shared natural resource. A System State in accordance with the present article shall use Waters of an international watercourse system, constituting a shared resource.

recognized Slovakia's right to proceed with the agreed project in the absence of cooperation from Hungary. Nonetheless, Slovakia's unilateral diversion of water from the Danube River was declared wrongful. The Court acknowledged that Hungary had the right to equitable utilization of the Danube River, but the unilateral termination of the 1977 Treaty was a breach.

Given the status of the Danube as a shared international river, the ICJ ordered Hungary to give a "proportionate share" as compensation to Slovakia. The Court did not, however, determine the details, and left it to the Parties to negotiate for an equitable solution.

As regards the termination of the 1977 Treaty, Hungary's arguments, i.e. necessity, impossibility of performance of the treaty, fundamental change of circumstances, material breach of the treaty by Slovakia and development of new norms of international environmental law, including the precautionary principle, were rejected and the ICJ declared the 1977 Treaty to be in force. The Court ruled that the Parties reach a new agreement in order to find a balance between utilization and environmental protection of the Danube River.[1295]

After the decision was handed down, Slovakia submitted a new submission in 1998 to the ICJ, as a result of deadlocked negotiations with Hungary in accordance with the Court's ruling. The paries have sought a further judgement from the Court.[1296]

Another important aspect of the decision of the Court in this case is the recognition of the relevance of the principles of equitable utilization and sustainable development. Even though some writers consider sustainable development as a principle with its own inherent merit, in the *Danube Gabcikovo-Nagymaros Project Case*, the Court pronounced sustainable development as an objective of the principle of equitable utilization. Especially, by referring to sustainable development, the Court underlined the ideals found in Articles 5, 6, 7 and 24 of the 1997 UN Convention, dealing with equitable utilization and sustainable development. The Court finds neither the use of an international watercourse nor the protection of the environment has absolute priority.[1297] Paragraph 140 of the judgment states:

> Throughout the ages, mankind has, for economic and other reasons, constantly interfered with nature. In the past, this was often done without consideration of the effects upon the environment. Owing to new scientific insights and to a growing awareness of the risks for mankind — for present and future generations — of pursuit of such interventions at an unconsidered and unabated pace, new norms and

[1295] *ICJ Reports*, 1997, pp.1-72, para 131.
[1296] According to Okowa, "Few would regard the decision in the *Gabcikovo* case as a model example of judicial contribution to the resolution of a dispute" See, Okowa 2001, p.828.
[1297] *ICJ Reports*, 1997, pp.1-72, para 131. para 135.

> standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development.[1298]

This statement is an affirmation of the principle of equitable utilization and sustainable development, and recognition of integration of the regimes of protection and of uses of international watercourses. The general obligation of States to ensure that activities within their jurisdiction or control will not cause damage to the environment of other States or of areas beyond national control is a recognized part of the corpus of international law relating to the environment.[1299]

In defining the concept of sustainable development, the separate opinion of Judge Weeramantry takes an integrated approach to environment and development. He states that it "enables the Court to balance environmental considerations against developmental considerations."[1300] The ICJ's pronouncement on the issues of sustainable development and environmental protection, some experts argue that the way the Court pronounced sustainable development as an objective of equitable utilization diminishes the independent value of sustainable development,[1301] whereas others see it as a valuable concept regardless. According to Bourne, the ICJ's decision on the *Danube Gabcikovo-Nagymaros Project Case* establishes that:

> The protection of environment has no absolute priority over the other consideration, particularly in the case of developments involving the utilization of international watercourses. The development must be reasonable and equitable - a matter to be judged in the light of all relevant factors. Among these factors, the protection of the environment of other States is of high, but not overriding, importance, it cannot frustrate rational development.[1302]

Indeed, the Court treated the regime of protection and the regime of uses of international watercourses equally, which in essence involves two important aspects of international law, i.e. watercourses and the environment. Regarding the relationships between the law of international

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[1298] *ICJ Reports*, 1997, pp.1-72, para 140.
[1299] This was confirmed by the ICJ in its advisory opinion on the *Legality of the Threat or Use of Nuclear Weapons* 1996.
[1300] *ICJ Reports*, 1997, pp.1-72, Separate opinion of the Vice-President Weeramantry.
[1301] Beaker, 1998, p.278.
[1302] Bourne, 1996, pp.6-12.

watercourses and international environmental law, Bourne argues that: "the judgment clarifies that neither of these areas of law has priority over the other and illustrates this by discussing the manner in which the Court considers sustainable development."[1303]

Although the main objective of the 1977 Danube Treaty was the construction of a system of locks for the production of energy, the Court notes that the purpose was not limited to the such production. The project aimed to serve other objectives as well, including the improvement of the navigability of the Danube, flood control, the regulation of ice-discharge and the protection of the natural environment. The Court holds that none of these objectives has been given absolute priority over the other, but none of them has lost importance either. In order to achieve these objectives, the Court argues, the Parties have accepted obligations of conduct, obligations of performance, and obligations of result, thereby balancing the objectives.

One relevant question is to what extent the Court's decision in this case reflects customary international law concerning the legal regimes of international watercourses. Paragraph 85 of the judgment is noteworthy as a starting point for such an examination. The Court refers the following passage from the PCIJ judgment in the *River Oder Case*:

> The community of interest in a navigable river becomes the basis of a common legal right, the essential features of which are the perfect equality of all riparian States in the uses of the whole course of the river and the exclusion of any preferential privilege of any one riparian State in relation to the others'.[1304]

The Court further states:

> Modern development of international law has strengthened this principle [the community interests] for non-navigational uses of international watercourses as well, as evidenced by the adoption of the Convention of 21 May 1997 and on the Law of the Non-Navigational Uses of International Watercourses by the United Nations General Assembly.[1305]

In these two passages, the Court declares that the development of international law has strengthened the principle of the community of interest in a navigable river for non-navigational uses of international watercourses as well. McCaffrey, who represented Slovakia in the *Danube Gabcikovo-Nagymaros Project Case,* refers to the passage from the *River Oder Case*, *and* outlines the two important elements: First, "the Court expressly

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[1303] Ibid,p.11.

[1304] *ICJ Reports*, 1997, pp.1-72, para 85 refers to the PCIJ's judgement on the *Territorial Jurisdiction of the International Commission of the River Oder Case*.

[1305] *ICJ Reports*, 1997, pp.1-72, para 85.

confirms what most commentators have long asserted, namely, that the above-quoted passage from the *River Oder Case*, concerning the concept of the 'community of interest', applies to non-navigational uses as well as to navigational ones."[1306] He also notes that this is a highly significant recognition of the idea that all riparian States have interests in an international watercourse, constituting an effective repudiation of absolute sovereignty.

According to McCaffrey, the second element is that the adoption of the 1997 UN Convention provides evidence of the strengthening of the principle of the community of interest in an international watercourse, ascribing the "significance to the adoption of the Convention as a confirmation of the development of international law in the direction of requiring that riparian States recognize the rights of other riparians in shared freshwater resources."[1307]

McCaffrey also points out that the Court "applies this doctrine to the case at hand in the next paragraph of its judgment, in which it finds that Slovakia, by unilaterally damming the Danube ('a shared resource') at a point at which it was wholly within Slovak territory, thereby deprive[ed] Hungary of its right to an equitable and reasonable share of the natural resources of the Danube."[1308] He concludes that the Court recognition of the concept of shared water recourse "constitutes a strong endorsement of equitable utilization as a norm of customary international law, and should remove any lingering doubt about the status of that principle."[1309]

As to the "no-harm rule", the Court's judgment in this case referrers to the right to an equitable and reasonable share of the uses and benefits of an international watercourse. According to McCaffrey, notable for its absence, except in connection with the environment, was any reference to the no-harm rule.[1310] This has strengthened the "no-harm" rule as a guiding principle in the field of international watercourses. With this endorsement of the principle of equitable utilization as a norm of customary international law, the ICJ's judgment enhances the community interest of riparian States in relation to the legal regimes of navigational use, non-navigational uses and to some extent, to environmental protection.

As sustainable development is recognized by the Court, the 1997 UN Convention and worldwide riparian State practice as an objective of equitable utilization, it is obvious that none of the legal regimes are either less or more important than the others. The regimes of navigational use and non-navigational uses are subject to the principle of equitable utilization, and thereby have to meet the objectives of sustainable

[1306] McCaffrey, "The Contribution of the UN Convention" 2001.
[1307] Ibid.
[1308] Ibid.
[1309] Ibid.
[1310] Ibid.

utilization, the aims of the regime of environmental protection, and improvement and restitution of international watercourses.

Overall, the Court judgment on the *Danube Gabcikovo-Nagymaros Project Case* has contributed to the development of the regimes by recognizing that:

1) international watercourses are shared resources;
2) the principle of equitable utilization is the governing principle of all kinds of watercourse uses;
3) the liability for changes in flow of a river between the riparian States is to be determined within the framework of the law of treaties in combination with the principle of State responsibility and the principle of the equitable utilisation provided for in the 1997 UN Convention;
4) the sustainable development is an objective of the equitable utilization of international watercourses; and
5) the protection of the environment is a high priority – though not of absolute overriding importance - among the factors to be judged in the light of equitable utilization.

All this means that the regime of environmental protection cannot frustrate the rationale of the regime of development of international watercourses and vice versa. This is an important balancing act between the regimes of international watercourses provided by the judgment in the *Danube Gabcikovo-Nagymaros Project Case*.

Finally, the study of the court practice in the 1990's conclude by a reference to the *Kasikili/Sedudu Island Case (*Botswana/Namibia 1999).[1311] This case deals with the question of international river boundary, but has also implications the legal regimes of uses and environmental protection.

The background of the case is as follows. The island, known as *Kasikili* in Namibia, and *Sedudu* in Botswana, is approximately 3.5 square kilometers in area, located in the Chobe River. Originating in the central plateau in Angola, where it is called the Rio Cuando, the Chobe River crosses the border of Namibia, where it is known as the Kwando, and then in turn the Masi, flowing south into the Linyanti River, reaching Lake Liambezi, then in turn known as the Chobe River as it exits the lake. Finally, it descends further to the center of the main channel of the Zambezi River. For Botswana the Chobe is a perennial river, independent of the Zambezi River, with a stable profile, continuous downstream flow and clearly visible and stable banks, but Namibia claimed that the Chobe cannot be regarded as a perennial river, and that it is an ephemeral watercourse. For Namibia the Chobe is very often dry over a substantial section of its course, and is not navigable over most of its length. The Parties to the *Kasikili/Sedudu Island Case* had extensive and contradictory claims on the distinguishing features of the Chobe.[1312]

[1311] *ICJ Reports,* 1999, p.1045.
[1312] Ibid, paras 11-16 .

The dispute between the Parties arose against the background of the competing interests of the 19th century European colonial powers, Germany and Great Britain, who were concerned with their trade and respective spheres of influence in south-west Africa. Great Britain intended to protect the south-north trade routes running through Lake Ngami to Victoria Falls, Germany sought British recognition of its access to the Zambezi River. This resulted in the conclusion of the 1890 Treaty, delimiting the spheres of influence of Germany and Great Britain in south-west Africa.[1313]

Following the 1890 Treaty, the territories of present day Botswana and Namibia were colonized. Until 1966, Botswana was under British administration. Namibia was then known as South West Africa and remained under German administration until World War I. The Caprivi Strip was taken over by the British from Southern Rhodesia in 1914, and South Africa delegated the administration of the Caprivi Strip to the authorities of the British Protectorate. South Africa assumed administration of South West Africa in 1919, until its mandate was terminated by the United Nations General Assembly in 1966, through the establishment of the UN Council for Namibia. However, it wasn't until 1990 that Namibia won its independence from South Africa's de facto control. Since then, differences arose concerning their border with Botswana, related to the location of the boundary around *Kasikili/Sedudu Island*.[1314]

The Court finds that the boundary between the Republic of Botswana and the Republic of Namibia follows the line of deepest soundings in the northern channel of the Chobe River around *Kasikili/Sedudu Island*. It further decides that *Kasikili/Sedudu Island* forms part of the territory of the Republic of Botswan and that in the two channels around *Kasikili/Sedudu Island*, the nationals of, and vessels flying the flags of both countries should enjoy equal treatment. Nationals of both States shall have a right of free access to the surrounding waters and to the territory of Kasikili/Sedudu Island for the purpose of navigation and fishing.[1315] The contribution of the decision of the court in this case to the to the law of international watercourses can be summarized as follows.

The judgment underlines that the boundary between the two countries should be settled in a manner that provided for the equitable treatment of a *shared natural resource*.[1316] It also elaborates that disproportionate weight

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[1313] Ibid.

[1314] Ibid.

[1315] While President Schwebel, Judges Oda, Bedjaoui, Guillaume, Ranjeva, Herczegh, Shi, Koroma, Vereshchetin, Higgins and Kooijmans were in favor of the judgment, Vice-President Weeramantry, Judges Fleischhauer, Parra-Aranguren and Rezek were against. Judges Ranjeva, Koroma and Higgins appended declarations to the Judgment of the Court. Judges Oda and Kooijmans appended separate opinions, and Vice-President Weeramantry and Judges Fleischhauer, Parra-Aranguren and Rezek appended a dissenting opinion.

[1316] In his declaration, Judge Koroma added that the Court had ruled that the nationals and boats flying the flags of the Republic of Botswana and the Republic of Namibia should enjoy

should not be placed upon criteria related to navigation, but other criteria should also be taken in to consideration.[1317] The Court recognized the mutual commitments that the Parties made in the so-called Kasane Communiqué of 1992 with regard to the uses of the waters around *Kasikili/Sedudu Island*, those commitments, according to the Court, are clearly in line with recent developments in international law such as the principle of the equitable and reasonable utilization of shared water resources.[1318]

The Court considers the Chobe River as a watercourse as defined in the 1997 UN Convention, namely a watercourse as a "system of surface waters and ground waters constituting by virtue of their physical relationship a unitary whole flowing into a common terminus."[1319]

In his dissenting opinion, Vice-President Weeramantry considers that, given that boundary demarcation are essentially divisions of *ecologically integral units*, there needs to be a joint international regime between the two countries to safeguard the environmental interests of the island. In his dissenting opinion, Judge Rezek takes into consideration the principle of the equitable apportionment of the resources of a watercourse.

15.7. Appraisal

The law of international watercourses has been enriched by the jurisprudence of the international courts in the 20th century with respect to the legal regimes of navigational use, non-navigational uses and the environmental protection. While freedom of navigation on international rivers was recognized in the early 19th century, it was only in the 20th century court practice, such as in the *Faber Case* (1903), confirmed the security concern of the host State on its portions of international rivers. During the 1920's and 1930's, the elements of the freedom of navigation were further defined by court practices. For example, the *European Commission of the Danube Case* (1927) and the *Oscar Chinn Case* (1934) defined the important components of the freedom of navigation on international rives, such as the freedom to enter ports, to make use of docks, and to transport, load and unload goods & passengers, thus enhancing the regime of navigational use of international rivers. Also in the 1920's, the judgment in the *River Oder Case* (1929) elaborated that the freedom of navigation ought to be applied to the tributaries of navigable international rivers, widening the scope of the concept of international river.

With the recognition of the community interest of the riparian States in the *River Oder Case* (1929), a new concept with respect to international

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equal treatment in the waters of each other's State in accordance with the contemporary principles of the law of international watercourses and the Kasane Communiqué.

[1317] Judge Higgins stated.

[1318] Judge Kooijmans

[1319] Judge Kooijmans.

watercourses introduced. It gave rise to a debate on the community interest of riparian States or the world community as a whole in regard to sustainable development of international watercourses.

The requirement of prior notification between riparians was in the focus in the 1950's. For example, in the *Lake Lanoux Arbitration* (1957), the diversion of waters and prior notification among upstream and downstream States were the issues dealt with by the tribunal, which held that the upstream State was under an obligation to take into consideration the interests of the downstream State, based on *good faith*. The issues involved in the *Lake Lanoux Arbitration* were related to non-navigational uses and the parties argued the over quantity of water - not the quality - thereby leaving ecological considerations outside the scope of the adjudication. The *Lake Lanoux Arbitration* recognized the relative sovereignty of the riparian States with respect to the use and protection of shared waters.

The two important cases of the 1990's, i.e. the *Danube Gabcikovo-Nagymaros Project Case* (1997) and the *Kasikili/Sedudu Island Case* (1999) represented a new era of international jurisprudence with respect to the use and protection of international watercourses. The ICJ's judgment in the case concerning the *Danube Gabcikovo-Nagymaros Project* constitutes a strong endorsement of the principle of equitable utilization as a norm of customary international law, governing principle of the use allocation of international watercourses. This was the culmination of a process, which was initiated by the 19th century decision in the *Helmand River Delta Case* (1872). The Court's judgment in the *Kasikili/Sedudu Island Case* (1999) reinforces once again the classic notion of the *thalweg* as determining international boundaries.

PART VII: OVERALL ASSESSMENT

CHAPTER 16: PARADIGM SHIFT FROM A PIECEMEAL TO AN INTEGRATED MANAGEMENT

16.1. Introduction

This study has dealt with the law of international watercourses and has examined the development of the legal regimes of navigational use, non-navigational uses and environmental protection, including changing management paradigms of watercourses, over a period of two centuries. This chapter will provide an overall assessment of the origin and development of the regimes of uses and protection as well as the consequent shift of management paradigms.

Over a period of two hundred years, the different legal regimes of internationally shared waters developed, initially in a haphazard and sometimes contradictory manner, but eventually there emerged integration among the regimes.

The management model of international watercourses thus shifted from a piecemeal use orientation to an integrated paradigm of uses and protection. The evolution of the regimes has been evaluated in terms of: 1) the concepts and approaches, i.e. from international river to international drainage basin and from international drainage basin to transboundary or international watercourse; 2) the substantive principles, i.e. from absolute sovereignty and arbitrary use to relative sovereignty and the principle of equitable utilization; and 3) the management paradigms, i.e. from an uncoordinated piecemeal to integrated management and sustainable development paradigms.

The examination of the different sources of the law of international watercourses shows that the law of international watercourses is well developed in terms of concepts and principles. The study has also found a clear shift in approach from a piecemeal to an integrated management paradigm of international watercourses, underlining the trends toward the adoption of an integrated legal perspective for the whole of the hydrological cycle, including atmospheric waters, ice-caps as well as salt waters.

In terms of international law, one main use of international rivers has always been to serve as territorial boundaries of States. At the same time, rivers have been used as international waterways, linking the riparian States. Both of these uses of international rivers emerged simultaneously and led to the formation of the two distinct concepts of international river boundaries and international waterways. Initially, the navigational use of international rivers was considered more important than the non-navigational uses (irrigation and hydroelectricity use). For example, in the case of some international rivers, e.g. the Danube and the Rhine rivers of Europe, the earlier treaties between the riparian States suggest priority of

the navigational use over the non-navigational uses, which were later harmonized by the modern treaties recognizing the relationships between the different kinds of uses and protection of shared international rivers.

With the beginning of the industrial age, both navigational and non-navigational uses tended to be regarded as equally important, and the need for harmonization of the legal regimes became important. In the case of some other international rivers, e.g. the Nile River of North Africa, the non-navigational uses were prioritized in the 1950's, and this continues to be so, especially in terms of irrigation.

From the 1950's to the 1970's, the conflicts between the uses of internationally shared watercourses as well as the conflicts between the uses and protection became apparent on every continent, in large part because the environment of international drainage basins were being clearly affected by increasing uses. In more recent times, as global awareness increased over environmental concerns, the integration between the legal regimes of uses, as well the legal regimes of the protection and uses of international watercourses, was urgently felt.

As to the origin and development of the regimes, the study finds that despite the fact that international watercourses were used for non-navigational purposes before the industrial age, e.g. for milling flour, mining etc., the legal regime of navigational use emerged much earlier than the regime of non-navigational uses. The regime of navigational use emerged during the 18th century as a result of the realization of the mutual needs and interests of the riparian States for the purposes of transportation and communication. This regime emerged based upon the concept of the international river and the freedom of navigation with a piecemeal approach to management, which prioritized navigational use over other uses. It is noteworthy that the international river concept was first recognized as a legal concept by a multilateral treaty in the 19th century[1320] for the purpose of navigational use. This was a belated recognition of the concept that was inherently implied with the origin of international law itself, particularly with the concept of river boundaries.

The use of international rivers as waterways signifies, among other things, that there exists a freedom of navigation and communication. This use has been based on a normative security paradigm, i.e. a security concept based on military defense, albeit qualified by the host riparian States' security interests, of allowing passage for shipping on an international river. The law of international watercourses developed from a narrow perspective, as manifested in the 1815 Final Act of the Congress of Vienna, into a global perspective that is embodied in the 1997 UN Convention.

[1320] The 1815 Final Act of the Congress of Vienna.

16.2. Management paradigm shift

The first sign of paradigm shift from a piecemeal to a more coordinated management framework of international watercourses began with the increasing industrial development and the resulting realization of the need and interests of riparian States for non-navigational uses. From this point onward, the riparian States began to realize the rising importance of non-navigational uses, and its complex relationship to navigational use. The regime of non-navigational uses began to develop rapidly in the mid 19th century, based primarily upon the principle of absolute sovereignty, which governed both regimes.

Since parts of an international watercourse are, by definition, situated in different riparian States, the regime of non-navigational uses became a source of contention, perhaps even more than navigational use, involving more lucrative interests to compete over. The conflict became apparent mainly because of the interpretation of State sovereignty in absolute terms. Some upper riparian States asserted their sovereignty regarding the non-navigational uses of international watercourses, claiming their rights in an arbitrary manner. Some lower riparian States confronted these unilateral legal claims, arguing that their interests were inextricably intertwined with those of the upper riparian.

The claims and counter-claims with respect to the international watercourse uses led eventually to the argument that: 1) watercourse States must be free to develop their uses of international watercourses in accordance with their needs; and 2) as the circumstances in each drainage basin differ, one principle is not applicable to all circumstances. Still, with this argument, sovereignty remained the basis of entitlement of rights accorded to watercourse States. In this sense, the weakening of absolute sovereignty left two key points unresolved, i.e. the determination of arbitrary use of an international watercourse, and the latitude of discretion of the riparian States.

In due course, in contradiction to the vested narrow interests of a riparian State, the community interest of the riparian States[1321] were recognized, which shifted the focus from absolute sovereignty towards relative sovereignty,[1322] thereby replacing the arbitrary use of the international watercourses with a more cooperative framework concerning the regime of navigational use. Still, the regime of non-navigational uses was based upon the interpretation of relative sovereignty and principles of international law, i.e. good neighborliness, the principle that rights should be exercised in good faith including the prohibition of abuse of rights.

Finally, the principle of equitable utilization of international watercourses was recognized in the 1960's, providing the basis of the right and duties of riparian States and governing the regime of non-navigational

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[1321] *River Oder Case* 1929, *PCIJ S, B,* No.23, 1929, pp. 64, 65, 65,1927.

[1322] *Lake Lanoux Award*, 1957, *ILR*, 24, 1957, pp.105-142.

uses and navigational use as well as environmental protection.[1323] The conceptual focus of the law shifted from the international river concept[1324] to the international drainage basin concept[1325] and then the international watercourse concept.[1326] Along with these shifts, the recognition of basins as integrated geographical and hydrological units, and watercourses as systems, led to the consideration of the different legal regimes of international watercourses as equal.

Further development of the law of international watercourses, especially since the 1970's, gave rise to the policy principles of an integrated management approach and the need for the protection of international watercourse-related environment. This resulted in the development of the regime of no-priority of the uses, recognizing existing use and basic human needs as the special considerations to be used as criteria for equitable utilization. Simultaneously the regime of environmental protection emerged, replacing the use-orientated management paradigm.

Particularly in the 1980's, parity between the regimes of uses and of protection was enhanced, by defining sustainable development in a general international development context, and by the 1990's, in the context of international watercourses. The legal regimes of navigational use, non-navigational uses and environmental protection stand on an equal footing from the 1990's onward, based on the recognition of: 1) the principle of equitable utilization; 2) no-harm to environment and; 3) consideration of material interests of the riparian States.

Apart from other sources of the law of international watercourses, the recognition of the principles of equitable utilization and sustainable development can be found in the 1990's treaties of specific application, representing various continents, and the 1997 UN Convention of general application. This is the second important paradigm shift towards integrated management of the legal regimes of international watercourses. This transformation represented a change of focus of legal rules completely, from an arbitrary use of international watercourses to an equitable utilization; from priority of a regime to parity between the different regimes; and from the use orientation to a protection-based modality. Both the development (use) and environment (protection) related issues of international watercourses are linked with the concept of sustainable development.

An assessment of the driving forces of the development of the regimes of uses and protection as well as the shift of their management paradigms, by and through the different sources of the law of international watercourses, is examined in the following section.

[1323] Particularly, the 1966 ILA Helsinki Rules.
[1324] Article 108 of the 1815 Final Act of the Congress of Vienna.
[1325] Article II of the 1966 ILA Helsinki Rules.
[1326] Article 2 of the 1997 UN Convention.

16.3. Forces of development of the regimes

The examination of the work of the inter-governmental organizations[1327] shows that these organizations have been instrumental in the development of the regimes of uses and protection of international watercourses as well as in a management paradigm shift. International organizations had this influence since the early 19th century, initially, by recognizing the challenges of watercourse management and subsequently, by initiating the development and codification of the law of international rivers through multilateral conventions. This study, beginning with the works of the Concert of Europe, i.e. the 1815 Final Act of the Congress of Vienna, demonstrates that the international river concept[1328] and the freedom of navigation[1329] were recognized for the first time by a multilateral treaty which pertained to the regime of navigational use.

The Act recognized not only the freedom of navigation for shipping, but also defined the international river as separating or traversing two or more States, i.e. the successive or contiguous rivers. Yet, except for the freedom of navigation, no governing principle as such was established by the Act concerning the regime of non-navigational uses. In the absence of a governing principle, the riparian State treaties adopted afterwards different rules based upon the sovereignty paradigm.

From the middle of the 19th century onwards, some riparian States asserted their rights based on absolute sovereignty where it concerned their rights over portions of international rivers which passed through their territory, without due consideration to the possible damage which it might cause the interests of the other riparian(s). The principles governing the legal regime of non-navigational uses became more contested from the late 19th century onwards, despite the fact that riparian State treaties were concluded concerning river boundaries, fishing rights and timber floating. The controversy between the United States and Mexico concerning the Rio Grande was a classic case of assertion of absolute sovereignty, embodied in the 1895 pronouncement by the United States Attorney General Judson Harmon.

Even though Harmon's pronouncement was not practically applied, it reflected the policy approach of the United States at that time, which was, essentially that a State could do as it wishes with the waters in the territories over which it has sovereignty, without regard to the interests of down stream States. The conflict between the two countries was finally resolved in the 1970's through the recognition of mutual rights and obligations of riparian States.

In the early 20th century, through the work of the League of Nations, the law of international watercourses progressed significantly with respect to the regimes of navigational and non-navigational uses. As to the legal

[1327] As presented in Part II of the study.
[1328] Article 108.
[1329] Article 109.

regime of navigational use, the 1921 Barcelona Convention continued to use the concept of international river for the freedom of navigation on international rivers as defined by the 1815 Final Act of the Congress of Vienna. The Convention and its related Statute recognized the priority of navigational use (freedom of navigation) over the non-navigational uses.

Attempts by the League to bring into force a multilateral convention concerning the regime of non-navigational uses proved unsuccessful. The 1923 Geneva Convention, which required prior negotiation before one State could undertake a project that would seriously affect the co-basin State, was never ratified by the required minimum number of States. Nonetheless, it can be argued that the 1923 Geneva Convention served as a point of departure for the later development of the regimes of non-navigational uses.

The contributions of two major non-governmental international organizations, namely the IDI and the ILA, to the development of the law of international watercourses have been very significant. Both these organizations made outstanding and groundbreaking recommendations in the 1960's on the regimes of uses and protection of international watercourses. In their recommendations, both the IDI and ILA advocated the importance of the interrelationships between the regimes, establishing the concept of the international drainage basin and defining in a precise manner the principle of equitable utilization as the key principles of the uses and protection of international watercourses. The concepts and principles defined by the ILA 1966 Helsinki Rules were recognized as the cornerstones for integrated legal regimes in the 1990's watercourse treaties worldwide.

The concept of the international drainage basin recognizes the basin as a single hydrological unit, irrespective of State boundaries. In addition, the principle of equitable utilization requires that basin States take into consideration different criteria on a case-by-case basis, to accommodate their conflicting needs and interests. The principle of equitable utilization had been established prior to the 1960's through some national and international judicial decisions related to shared waters, but it was the ILA that adopted the integrated legal perspective to the regimes of multiple uses and protection through its 1966 rules. Harmonization between the regimes of uses and protection began to emerge in the 1960's treaties and framework rules[1330] and increased from the 1970's onward through the UN system.

In the wake of the ILA's work, the development of the different legal regimes through the UN system, led to the further incorporation of the GPP with a global resource perspective. This includes the GPP related to: 1) water for peace[1331]; 2) human Environment[1332]; 3) State sovereignty over

[1330] For example, the 1966 ILA Helsinki Rules.
[1331] The 1967 Conference Water for Peace.
[1332] The 1972 Stockholm Declaration.

natural resources[1333]; 4) right of access to waters[1334]; 5) sustainable development[1335] and; 6) integrated management of resources.[1336]

These policy principles relate to the general economic development of resources, which are situated within the national jurisdiction of States as well in the realm of international shared water resource development.

Of the general policy principles adopted through the UN system, the 1972 Stockholm and the 1992 Rio declarations are noteworthy developments concerning natural resource uses and their protection. While the 1972 Stockholm Declaration defined the principles related to human environment and use of natural resources, the 1992 Rio Declaration and Chapter 18 of Agenda 21 relating to water resources, defined sustainable development and integrated management. Thus, an integration of the legal regimes emerged in the 1990's through the GPP adopted within the UN system.

These GPP are incorporated in the 1990's watercourse treaties of Europe and elsewhere. In this respect, the 1997 UN Convention on the Law of Non-Navigational Uses of International Watercourses, which is based on the 1994 ILC Draft, should particularly be mentioned. This Convention is of primary importance because it provides for modern concepts and approaches, substantive principles, implementation mechanisms and dispute settlement rules governing the different regimes with a harmonized perspective on a global level. It includes the regime of navigational use to the extent it affects the non-navigational uses within the scope of the principle of equitable utilization and the no-harm rule.

The pre-existing watercourse treaties are expected to be adjusted in accordance with the rules and principles of the 1997 UN Convention, and future treaties are expected to be concluded according to this convention. However, where the pre-existing treaties are more comprehensive than the modest provisions of the UN Convention, it must be interpreted progressively, not regressively. The 1997 UN Convention neither applies to the saturated groundwater aquifer, nor to atmospheric waters or clouds. The Convention considers sustainable utilization as one of the criteria of the principle of equitable utilization. An analysis of the 1997 UN Convention, its concepts, approaches, framework characters, and its substantive principle of equitable utilization, no-harm rule and sustainable development, demonstrates that it has obviously adopted an integrated legal perspective to the regimes of international watercourses.

The riparian State treaties of different regions, which have been analyzed in this study,[1337] demonstrate that development of the legal regimes and shifting management paradigms from a piecemeal to an

[1333] The 1974 Charter of the Economic rights and Duties of States.
[1334] The 1977 Mar del Plata Conference.
[1335] The 1987 World Commission Report.
[1336] Agenda 21, Chapter 18.
[1337] See, Part III and Part IV.

integrated approach, and reflect the mutual needs and interests of riparian States. Foremost among these is the classic interest of the riparian States to maintain territorial sovereignty in their respective portions of international rivers.

The world's international rivers serve dual purposes, as boundaries of the riparian States, and also as strategic military frontiers, arenas of defense of territorial boundaries, where foreign warships are rarely allowed to exercise the freedom of navigation. The naturalist school of jurisprudence has long argued that navigable rivers serving boundaries of two or more States should be open to navigation on an equal basis to the vessels of all riparian States, as well as foreign vessels. With the rise of the nation-state, the use of international rivers for the purpose of separating the State boundaries gradually became as equally important as the need for linkages via communication and transportation. These needs became transformed into the legal regime of navigational use, for the purposes of promoting trade and commerce.

The legal regime of navigational use developed with the early 19th century treaties, determined the territorial scope of rules on inland navigation, rights and duties of the riparian States, and guided the administration of river areas in question. This led eventually to the tacit recognition of the freedom of navigation, implying the freedom of commerce. The review of the riparian State treaties has shown that the European colonial powers have had a considerable impact on the development of the legal regimes of the navigable rivers in Asia, Africa and the Americas.

Almost two hundred years ago the primacy of navigational use against the non-navigational uses emerged in the riparian State treaties. Up till the 1950's, the potential future use of an international watercourse was considered subordinate to the existing use. Until the 1960's, the law of international watercourses resolving those types of conflicts, as well as conflicts over multiple uses (navigational vs. non-navigational, irrigation vs. industrial uses) and between the uses and protection remained underdeveloped. Parity seems warranted in recent decades, given the development of the regimes, which reflects a less shortsighted approach between use and protection.

Development of the regimes and the resulting interrelationships, initiated and enhanced by the treaty practices, may be summarized as follows. The modern development of the legal regime of navigational use begins with the European treaties of the early 19th century. These treaties defined the concept of an international river, set the standard for freedom of navigation and communication on international rivers, and thereby prioritized these freedoms over non-navigational uses. With the increasing industrialization in Europe in the late 19th century, the need for hydroelectricity development and industrial use of international watercourses increased, and the watercourse treaties began to incorporate a

legal regime of non-navigational uses. Since then, issues over international watercourse use, navigational vs. non-navigational, have been a source of contention.

The modern European treaties have adopted the wider ecological approach, including the principles of equitable utilization, sustainable development and integrated management of international watercourses. These modern treaties, e.g. the 1992 ECE Helsinki Convention, the 1994 Danube and 1998 Rhine Conventions,[1338] contain precise and detailed provisions for implementation and compliance, as well as information and public participation. The examination of these treaties illustrates that the regimes of uses and protection of the European international watercourses have developed by adopting an integrated approach. These are the model treaties of international watercourses, which have shifted from a piecemeal use orientation toward the integrated management and sustainable development paradigm. In this paradigm, both the regimes of use and protection are treated on an equal basis.

As regards the international watercourses of Asia, the legal development started in the mid-19th century. The 1858 Treaty of Aighoun between China and Russia was the first Euro-Asian treaty regulating navigational use. This treaty applied the principle of freedom of navigation embodied in the 1815 Final Act of the Congress of Vienna. At around the same time, Great Britain obtained access of navigation to the Yangtse-Kiang River in China, and France gained access to the Mekong River. Treaties regulating multiple uses of international rivers were concluded in Asia, in the first half of the 20th century, including regulations concerning fishing rights.

After World War II, many Asian States gain their independence and began to conclude new treaties, or re-negotiated old ones. The 1960 Indus Treaty between India and Pakistan is one example taking a holistic approach.[1339] Another example is the 1950 agreement between France and Siam (Thailand), whereby freedom of navigation in the Mekong River was ensured by Cambodia, Laos, Vietnam and Thailand.

After years of different legal arrangements, a harmonized legal regime of the Mekong River emerged through the 1995 Mekong Agreement, which recognizes the concept of river basin and equitable utilization, including the freedom of navigation. The 1995 Mekong Agreement also harmonizes the legal regimes of uses and protection in accordance with the modern principles of equitable utilization and sustainable development.[1340] This agreement has also established the Mekong Commission, which is responsible for its implementation. The use allocation, protection and management of the Mekong are legally defined, and the methods for information sharing, reporting, assessment and public participation are

[1338] See, Chapter 4 and Chapter 9.
[1339] See, Section 5.4.
[1340] See, Section 5.2 and Chapter 10.

clearly stated. The Mekong Commission is primarily responsible for the settlement of disputes; however, if the Commission fails to do so, it will have to refer the dispute to the governments for a negotiated settlement. From the 1920's, when the treaties were struck in a colonial context, to the latest development in the 1990's, the Mekong regimes have come a long way, and it has finally evolved into a harmonized model of international watercourse management.

The legal regimes regarding African international rivers were also basically shaped by the colonial powers during the 19th century. The 1886 General Act of Berlin internationalized the Congo and Niger rivers, prioritizing navigation over non-navigational uses. However, in North Africa, non-navigational uses were, and still are (especially in the case of the Nile River) prioritized over navigational use. This shows that prioritization of navigational use over non-navigational uses was not a universal practice.

Just as was the case in Asia, African States, after their independence from the colonial powers, began to conclude treaties regulating multiple uses and protection. In the 1960's and 1970's, the legal regimes of the African rivers Chad, Niger and Senegal developed with a harmonized view, recognizing drainage basins as a whole. In the 1990's, like the 1995 Mekong Agreement, the 1995 SADC Protocol emerged with harmonized legal regimes of protection and uses of international watercourses.[1341] The Protocol adheres to the concept of internationally shared watercourse system and the principles of equitable utilization and sustainable development. Compared to other watercourse treaties of the 1990's, the 1995 SADC Protocol takes a more progressive approach, because internationally shared watercourse system embraces the concept of international drainage basin, and covers use allocation, protection, management, information sharing and public participation, which is ensured through the establishment of an effective implementation mechanism.

In South American international rivers, freedom of navigation was recognized in the late 18th century, including the Amazon River and the River Plate. Freedom of navigation was extended to non-riparian States in the 19th century, on certain South America rivers. The 1928 Brazil and Colombia Agreement is a unique treaty because it provides for the freedom of navigation to foreign warships. From the 1970's on, riparian State treaties of South America began to recognize the link between use and protection, completely prohibiting pollution of international watercourses in a successive river.[1342]

In South America, the 1978 Amazon Treaty is a prime example of a harmonized approach to the regimes of uses and protection. According to this treaty, the Amazon River is recognized as an integral part of the whole

[1341] See, Chapter 12.

[1342] The 1971 Declaration on Water Resources signed by Argentina and Uruguay.

basin. The treaty has established the Amazonian Cooperation Council, which is responsible for the implementation of the treaty. This treaty is based on the principle of equitable distribution of benefits.[1343] This means that equitable and mutual benefit can be achieved by suitable bilateral or multilateral agreements about different issues, including trade and tourism. The idea of navigation, trade and tourism were further harmonized in the treaties of the 1990's. For instance, an important feature of the 1998 Peru-Ecuador Treaty is that trade is linked with navigation, implying a link between freedom of navigation and freedom of commerce.

In North America, freedom of navigation on international rivers was recognized in the early 18th century. Despite the fact that the United States, for a very long period, maintained that no right of navigation could be exercised or permitted in its territory unless agreed to by treaty, it often insisted on free navigation within South American rivers where they afforded the only means of access to the sea.

The United States' initial argument was based on the principle of absolute sovereignty against Mexico concerning the use of the Rio Grande River. That very argument was invoked by Canada against the United States concerning the Columbia River (Article II of the 1909 Treaty).[1344] The contentions and disagreement that followed, were gradually replaced by the general acceptance of the principle of equitable utilization. State practice in the 1990's treaties of other continents as well as the decisions of the ICJ turned this principle to the most fundamental basis for the contemporary law of international watercourses.

As to the Columbia River, where the United States is downstream and Canada is upstream, the right of downstream State is guaranteed by the Columbia River regime. However, in the case of the Rio Grande, where the United States is upstream and Mexico is downstream, the rights of the downstream State are based on ad hoc regulations, depending upon the will of the water administration authorities in the upstream State. Critics could point to this situation and claim that North American boundary water treaties are influenced by the power positions of the parties. According to the modern law of international watercourses, however, both the upstream and downstream States are required to respect and apply the principles of equitable utilization in order to achieve a sustainable development through an integrated management.

Apart from the regional treaties, the only global agreement relating to international watercourses, i.e. the 1997 UN Convention, adopts an integrated legal perspective to the regimes of uses and protection of international watercourses. This is, despite the fact that the Convention's

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[1343] See, Section 7.3.

[1344] For example, McCaffrey maintains that Article II was not intended to reserve absolute rights, whereas Bourne asserts that it was. See McCaffey, 2001, pp.76-112 and Bourne, 1997, p.326.

title implies that it covers only non-navigational uses.[1345] The 1997 UN Convention is based on the concept of international watercourses, which is governed by the principle of equitable utilization and no-harm rule, aiming at sustainable development. Implementation of the Convention is dependent on cooperation and participation of watercourse States on a bilateral or multilateral basis. Dispute settlement mechanism consists of fact-finding commission as well as the traditional dispute settlement procedures.

16.4.Treaty Indexes

The following treaty indexes are presented in order to assess the overall development of and paradigm shifts in the legal regimes for uses and protection. In indexes 1 and 2, the treaties are displayed vertically and their variables horizontally, illustrating treaties between 1815 and 1980's. Index 3 shows the treaties from the 1990's horizontally and their variables vertically, illustrating the management paradigm shift in the 1990's.

In contrast to indexes 1 and 2, the independent variables are switched in index 3. Apart from illustrating the development and paradigm shift, index 3 demonstrates that: 1) the more adherence to the international drainage basin by treaties in terms of the Concepts and Approaches (CA), the greater the degree of integration between the regimes of uses and protection; 2) the greater number of treaties recognizing equitable utilization as the Substantive Principles (SP), the more significant the international recognition of the principle and thereby greater the parity between the uses and protection; and 3) the more Implementation Mechanisms (IM) are accurately defined and venues of Dispute Settlements (DS) are specified in the treaty, the less the legal complications and the more integrated management.

Index 1

European Treaties	CA	SP	IM	DS
The 1815 Final Act	*ir*	*fn*	*rc*	*mc*
Rhine River				
The 1831 Convention	*ir*	*fn*	*rc*	*rt*
The 1857 Convention	*ir*	*fn*	*rc*	*ad*
The 1868 Convention	*ir*	*fn*	*rc*	*mc*
The 1869 Convention	*ir*	*fn*	*jc*	*mc*
The 1880 Convention	*ir*	*rpf*	*jc*	*ad*
The 1882 Convention	*ir*	*pap*	*jc*	*ad*
The 1919 Treaty of Versailles	*ir*	*fn*	*rc*	*mc*
The 1959 Rhine Commission	*ir*	*pap*	*rc*	*ad*
The 1963 Rhine Convention	*ir*	-	*rc*	*ad*

[1345] See, Chapter 14.

The 1976 Chloride and Chemical Conventions	*ir*	*reds/elds/rds*	*pa*	*ad*
The 1987 Plan of Action	-	-	*pa*	-
The 1976 EU Directives	*reia*	*pdds*		*ad*
ECE 1980's Decision	*reia*	*rauc*	*eim*	*ad*
Danube River				
The 1840 Treaty	*ir*	*fn*	*rc*	*ad*
The 1856 Treaty	*ir*	*fn*	*rc*	*ad*
The 1857 Regulations	*ir*	*fn*	*rc*	*ad*
The 1878 Treaty of Berlin	*ir*	*fn*	*ecd*	*ad*
The 1881/82 Regulations	*ir*	*fn*	*mic*	*ad*
The 1918 Peace Treaty	*ir*	*fn*	*cdd*	*ad*
The 1919 Treaty of Versailles	*ir*	*fn*	*rc*	*ad*
The 1921 Paris Convention	*ir*	*fn*	*rc*	*ad*
The 1922 Statute of Navigation	*ir*	*fn*	*rc*	*ad*
The 1938 Agreement	*ir*	*fn*	*ecd*	*ad*
The 1947 Treaty	*ir*	*fn*	*rc*	*ad*
The 1948 Danube Convention	*ir*	*fn*	*ecd/mic/cdd*	*ad*
The 1955 Treaty	*ir/iw/idb/*	*pap*	*co*	*ad*
The 1977 Treaty	*idb*	*mu/ji/em/pf-wa*	*co*	*ad*
The 1986 Declaration	*ir/idb*	*pap*	*co*	*ad*
The 1986 Convention	*idb*	*pap*	*co*	*ad*
Denmark-Germany				
The 1922 Agreement	*ir/iw*	*mb*	*fwc*	*ad*
The 1923 Geneva Convention	*ir*	*pc*	*jc*	*ad*
Italy-Austria				
The 1923 Agreement	*fz*	*rfpfs*	-	*ad*
Norway-Sweden				
The 1929 Convention	*cliw*	*muc*	*fwc*	*ad*
France-Belgium-Luxembourg				
The 1950 Protocol	*ir*	*awp/prp*		*ad*
France-Spain				
The 1952 Convention	*ir*	*prp*		*ad*
Austria, Germany and Switzerland				
The 1960 Convention	*ir*	*prp/ nsi*		*ad*
The 1971 Finnish-Swedish Treaty	*fr/iw*	*mu/es*	*frc*	*frc/nc*
Asian Treaties				
The 1926 Mekong Convention	*ir*	*fn*	-	+
The 1950 Convention	*ir*	*fn*	*mc*	+
The 1954 Convention	*ir*	*fn*	*mc*	+
The 1957 Statute	*lmb*	*mu*	*mc*	+
The 1975 Declaration	*lmb*	*mu*	*mc*	+
The 1978 Declaration	*lmb*	*mu*	*mc*	+
The 1987 Plan	*lmb*	*mu*	*mc*	+
The 1954 Kosi Agreement	*ir*	*mb*	*jc*	*a*

The 1959 Gandak Agreement	*ir*	*mb*	*jc/cc*	*a*
The 1960 Indus Treaty	*irb*	*eq*	*pic*	+
The 1975 Agreement	*ir*	*ua*	*jc*	*neg*
The 1977 Ganges Agreement	*ir*	*sw*	*jc*	*neg*
The 1982 MOU	ir	sw	jc	neg
African Treaties				
The 1959 Nile Agreement	*ir*	*ar*	*pjtc*	*neg*
The 1963 Niger River Con/Act	*irb*	*sr*	*rc*	+
The 1963 Senegal River Convention	*irb*	*sr*	*rc*	+
the 1964 Chad Convention	*irb*	*sr*	*rc*	+
The 1987 Agreement	*czrs/ sd*	*mb-mco- igmc- esm*	*eifa- cutf*	*apwc*
South American Treaties				
The 1969 Treaty on the River Plate Basin	*idb*	*eu/nad*	*igcc*	*neg*
The 1978 Amazon Treaty	*ipb*	*edb*	*acc*	*coop*
North American Treaties				
USA-Mexico				
The 1906 Convention	*ibr*	*ed*	-	-
The 1944 Treaty	*ibr*	*ed/ qwua*	*ibwc*	*ad*
The 1973 Minutes	*ibr*	*ls*	*ibwc*	*ad*
USA-Canada				
The 1909 Treaty	*ibwa*	*rsr/esr/ op/ arn/ea/ prpwq*	*ijc*	*ad*
The 1961 Columbia Treaty	*idb*	*mb/dsb*	*ijc*	*ad*
The 1964 Exchange of Notes	*idb*	*mb*	*ijc/adm*	*ad*
The 1969 Exchange of Notes	*idb*	*mb*	*ijc*	*ad*
The 1978 Agreement	*ipu*	*ses /zdtc*	*ijc/pup*	*ad*

CA = Concepts and Approaches (*idb* = international drainage basin; *twil* = transboundary watercourses and international lakes; *cliw* = common lakes and international watercourses; *iw* = international watercourses; *isws* = international shared watercourse system; *irb* = international river basin; *irb* = international boundary river or *ibr* =international boundary river; *ir* = international river; ; *rb* = river bed; *reia* = regional integrated approach; *fr* = frontier river; *lmb* = lower Mekong basin; *czrs* = common Zambezi river system; *isws* = internationally shared watercourse system; *ipb* = integral part of the whole basin; *ibra* = international boundary water approach)

SP = Substantive Principles (*eu* = equitable utilization; *sd* = sustainable development; *nhr* = no-harm rule; *ed* = equitable distribution; *ie* = intergenerational equity; *pp* = precautionary principle; *ppp* = polluter pays principle; *dcd* = duty to compensate damage; *edb* =equitable distribution of benefits; *fn* = freedom of navigation; *rpf* = restriction of pollution from factories; *pap* = protection against pollution; *mb* = mutual benefit; *pc* = prior consent; *rfpfs* = right to fish and protection of fish stocks; *muc* = mutual consent; *ophs* = obliging the parties for the public health and safety; *prp* = prohibiting radioactive pollution; *reds* = reduction of salinity; *elds* = elimination of dangerous substances; *rds* = reduction of substances; *awp/prp* = abatement of water pollution/prohibition of pollution; *nsi* = no substantial injury; *pdds* = prohibitions of the discharge of dangerous substances; *rauc* = rational use of waters in the community; *prpwq* = protection against pollution and water quality; *bu* = broad utilization; *ji*

= joint investment; *em* = equal measures; *pf-wa* = protection of fisheries and water quality; *mu* = multiple uses; *es* = equal share; *ar* = acquired rights; *sr* = sovereign rights; *mb* = mutual benefit; *mco* = mutual cooperation; *esm* = environmentally sound management; *nad* = *no* appreciable damage; *edb* = equitable distribution of benefit; *qwua* = quotas for water use allocation; *rsr* = reservation of sovereign right; *esr* = equal and similar rights; *op* = order of precedence; *arn* = acquired rights of navigation; *ea* = equitable apportionment; *prp* = prohibition of pollution; *dbs* = downstream benefits; *ses* = setting emission standards; *zdtc* = zero discharge of toxic contaminants)

IM = Implementation Mechanisms (*jc* = joint commission; *ua* = use allocation; *pim* = protection and improvement; *is* = information sharing; *ra* = reporting and assessment; *pup* = public participation; *rc* = river commission; *jc* = joint commission; *rc* = river commission; *ecd* = european commission in the lower danube; *mic* = mixed commission; *cdd* = commission of the danube delta; *fwc* = frontier water commission; *leg* = legislation; *pa* = plan of action; *eim* = establishment of the implementation mechanism; *co* = cooperation; *frc* = frontier river commission; *mc* = mekong commission; *pim* = protection and improvement; *is* = information sharing; *ra* = reporting and assessment; *pup* = public participation; *cc* = coordination committee; *pic* = permanent indus commission; *neg* = negotiation; *jtc* = joint technical committee; *eifa* = existing financial arrangement; *igmc* = inter-governmental monitoring and coordinating committee; *cutf* = coordinating unit and a trust fund; *igcc* = inter-governmental committee of coordination; *acc* = amazonian cooperation council; *ctn* = centers of trade and navigation; *iwbc* = international boundary water commission; *ijc* = international joint commission; *adm* = administrators; *pup* = public participation)

DS = Dispute Settlement venues (*ad* = adjudication; *a* = arbitration; *mc* = mixed courts; *rt* = Rhine tribunal; *nc* = national courts and *frc* = frontier river commission; + = adjudication; *apwc* = avoid the possible water conflict; *neg* = negotiation; *coop* = cooperation; *pec* = peru-ecuador commission; *ijc* = international joint commission)

The index shows that the Rhine regime used the concept of international river during a long period of time, starting from the 1815 Final Act of the congress of Vienna, until the regional integration approach to waters emerged in the 1970's and 1980's. An ecological approach was adopted later on in the 1990's (see, index 3).

The concept of international watercourse was adopted by the 1922 Denmark-German Treaty. At the same time, the concept of common lakes and international watercourses was adopted by the 1929 Convention between Norway and Sweden, which was reaffirmed by the 1971 Finnish-Swedish Treaty. The Danube regime evolved, like the Rhine regime, upholding the concept of international river until the 1950's. However, in the 1955 Treaty between Hungary and Yugoslavia concerning the Danube, the concept of international river basin embracing the broader scope of application was adopted.

The Mekong regime adopted the traditional concept of international river in the 1920's for navigational use inspired by the 1815 Final Act. This concept was also adopted by the Kosi and Gandak regimes developed in the 1950's for non-navigational uses, which continues to be in application to date, including in the Ganges and Mahakali regimes established in the 1990's.

The concept of the river basin was recognized through the 1957 Statute concerning the Mekong regime and it is reaffirmed by the 1995 Mekong regime (see, index 3), which distinguished itself from the concept of

international drainage basin in terms of the scope of the regime. The 1960 Indus River Treaty also adopted the river basin approach, and was followed by the 1960's treaties concerning the Niger and Senegal rivers and Chad lake of Africa. However, in the 1980's the concept of international river system was adopted in the 1987 Zambezi Agreement, which is considered to be a wider approach than the river basin approach.

The 1906 Convention between the United States and Mexico embraced the concept of international river basin. This concept was fully adopted in the 1960's and 1970's by the Columbia River regime.

The 1969 River Plate Treaty adopted the concept of international drainage basin, which was further enhanced by the adoption of the 1978 Amazon Treaty.

In terms of the Substantial Principles (SP) both the Rhine and Danube treaties adopted the freedom of navigation following the 1815 Final Act. Even as early as in the 1880 Convention, the principle on restricting pollution from factories was recognized and furthermore in the 1882 Convention the principle of protection against pollution was recognized concerning the Rhine.

The principles of mutual consent and prior consent between States as the essential principles for the use and protection of watercourses were recognized in the 1929 Treaty between Norway and Sweden.

The 1976 Rhine Chloride and Chemical Conventions required the parties to take measures for public health and safety prohibiting radioactive pollution and reduction of salinity. Later on in the 1998 Rhine Treaty, the principle of equitable utilization and sustainable development was adopted (see, index 3).

The initial Danube regime was governed by the freedom of navigation like the Rhine regime. However, the 1955 Treaty recognized the principle of the protection against pollution of the Danube. This principle was further enhanced by the 1977 Treaty, which included the principle of protection of water quality and fisheries. The principle of equitable utilization and sustainable development was adopted later on in the 1994 Danube Treaty (see index 3).

The 1926 Mekong regime started with the freedom of navigation. Concerning the multipurpose use of the Mekong, the 1957 Statute recognized the principle of mutual benefit, which is supplemented by the 1995 Mekong regime with the principle of equitable utilization and mitigation of harm (see, index 3). The 1950's Kosi and Gandak agreements also recognized the principle of mutual benefit instead of the equitable utilization. However, the 1960 Indus Treaty adopted the mechanism to implement the principle of equitable utilization, though it also stated that it did not intend to recognize the principle as such to be applicable to other regimes. From the 1970's on, the Ganges regime included the principle of equity instead of equitable utilization.

The Nile regime developed in the 1950's, adopted the principle of acquired right for the purpose of non-navigational uses, while the other African river regimes, such as the Niger and Senegal rivers and Chad lake, included the principle of sovereign right. The 1987 Zambezi Agreement adopted the principles of mutual benefit and cooperation, including the sustainable development and environmentally sound management.

The 1969 River Plate Treaty regime of the South America adopted the principle of equitable utilization and no-appreciable damage. However, the 1978 Amazon Treaty embraced the principle of equitable distribution of benefit.

The 1906 Convention between the United States and Mexico concerning the Rio Grande River recognized the principle of equitable distribution. This principle was followed by the principle of quotas for water use allocation and it was updated in the 1970's with the principle of limiting the salinity of boundary waters. Between the United States and Canada, the 1909 Treaty innumerate a list of principles, which include the reservation of the sovereign right, equal and similar rights, order of precedence among uses, acquired right of navigation (unlike the Nile regime from the 1950's recognizing the acquired right principle for the purpose of non-navigational use), equitable apportionment and prohibition of pollution. However, the Columbia River regime, developed since the 1960's, adopted the principle of mutual benefits and downstream benefits, including emission standard and zero discharge of toxic contaminations.

The Implementation Mechanisms (IM) in the treaties consist mainly the joint river commissions, which differs in terms of composition and mandate. Some of the joint river commissions are autonomous institutions with administrative decision-making power, and others are simply advisory bodies. Still some others have quasi-judicial powers. Only a few frontier river commissions in Europe have the power to function like a court of law.

The Rhine Commission, established in 1815, is for example responsible for preservation of the freedom of navigation. The Rhine Commission for Protection, established since the 1950's, has recommendatory powers in terms of environmental issues. These commissions can draft rules and regulations for navigational use, handle complaints against violations of these rules, and formulate necessary proposals for improvement of navigation. These functions can be investigative as well as recommendatory. The Danube Commission, established in 1856, is also responsible for the preservation of the freedom of navigation and protection against pollution caused by navigation.

The Mekong regime started with the preservation of the freedom of navigation under the 1926 Convention. The Mekong Committee, established in 1957, was a coordinating organ without any decision-making powers. The Mekong Commission, established in 1995, is responsible for planning and implementation for use and protection of the environment of

the Mekong. The Permanent Indus Commission, established in 1960, has quasi-judicial power. The joint river commissions between Nepal-India, and Bangladesh-India, established in the 1970's, have advisory powers. The Joint Technical Nile Commission, established in 1959, is responsible for ensuring technical cooperation and recommendation to the parties. The Amazon Cooperation Council, established in 1978, is also responsible for coordination between the Amazonian basin States.

The International Joint Commission, established in 1909, between the United States and Canada, is responsible for judicial settlement. The jurisdiction of the International Boundary Water Commission between the United States and Mexico, established in 1944, extends to all the waters on or across their boundary. It has a quasi-judicial power to control and adjudicate issues related to obstruction, diversion and uses of water.

As regards Dispute Settlement (DS), many treaties have detailed provisions and specific venues for dispute settlement, i.e. arbitration and fact-finding. Others are more general in nature. Only a few treaties, e.g. the 1987 Zambezi Treaty and 1995 SADC Protocol, focus on dispute prevention. The Finnish-Swedish Frontier Commissions have functions like a court of law.

The mechanism of the peaceful settlement of disputes, including diplomatic settlement, is well established in international law. The ICJ has not only dealt with cases related to international watercourse, but also established a special chamber dealing with environmental disputes.[1346] When one reviews the existing international watercourse treaties, it is apparent that international watercourse related disputes are best resolved through the negotiation. Having realized the importance of the negotiated settlement, the ICJ has referred the parties back to the negotiation of the treaty in accordance with the principle of equitable utilization.

Index 2

	CA	SP	IM	DS
The 1815 Final Act	*ir*	*fn*	*ic*	*mc*
The 1856 Paris Congress	*ir*	*fn*	*ic*	*mc*
The 1868 Convention of Mannheim	*ir*	*fn*	*ic*	*mc*
The 1919 Treaty of Versailles	*ir*	*fn*	*ic*	*mc*
The 1921 Barcelona Conventions	*ir*	*fn*	*ibct/atc*	*ad*
The 1923 Geneva Convention	*ir*	*pc*	-	*ad*
The 1930 Geneva Convention	ir	fn	*ibct/act*	*ad*
The 1933 Montevideo Convention	*ir*	*bu*	-	*ad*

[1346] In 1993 the Court created a chamber for environmental disputes, composed of judges professing a special interests in the area of law. See, Jennings, 1995, p.496.

The IDI's overall Approach	*ir/idb/iw*	*eu/nr*	*an/pc/rt/ac*	*ad*
The ILA's overall Approach	*idb*	*eu*	*jb*	*ad/a*
The ILC's overall Approach	*iw*	*eu/nh*	*jb*	*ad/a/ffc*
The 1997 UN Convention	*iw*	*eu/nh*	*jb*	*ad/a/ffc*

CA = Concepts and Approaches (*ir = international river; idb* = international drainage basin; *iw* = international watercourses; SP = Substantive Principles (*fn* = freedom of navigation*; eu* = equitable utilization, *nh* = no-harm; *bu* = balanced use); IM = Implementation Mechanisms (*ic* = international commission *an* = advance notice; *pc* = prior consultation; *rt* = reasonable time; *ac* = appropriate compensation; *jb* = joint bodies; *ibct/atc* = international body of communication and transport, and advisory technical committee); DS = Dispute Settlement venues (*mc* = mixed court*; ad* = adjudication; *a* = arbitration; *ffc* = fact-finding commission)

Index 2 lists framework conventions resulting from initiatives of international institutions for the legal development of the regimes, starting from the Concert of Europe 1815 Final Act until the 1997 UN Convention. The index illustrates the classified variables in this study. This shows that the there has been a shift in terms of concepts from river to watercourse, in terms of principles from freedom of navigation to equitable utilization, from piecemeal to integrated management mechanisms, and from mixed court to fact finding in terms of dispute settlement.

Index 3

	ECE 1992	Danube 1994	Mekong 1995	SADC 1995	Amazon 1998	Rhine1998
CA	*wea*	*wea*	*irb*	*isws*	*idb*	*wea*
-idb	+	+				+
-iw	*twil*	*twil*				*twil*
-iw	+	+				+
SP	*eu*	*eu*	*eu/ua*	*eu*	*edb*	*eu*
-sd	*sd*	*sd*	*sd*	*sd*		*sd*
-nhr	+	+	*nhr*			+
-ie	*ie*	*ie*				*ie*
-pp	*pp*	*pp*				*pp*
-ppp	*ppp*	*ppp*				*ppp*
-dcd		+	+			+
IM						
-jc	*jc*	*jc*	*mc*	*jc*	*jc*	*jc*
-ua	+	+		*ua*		+
-pim	*pim*	*pim*	*pim*	*pim*		*pim*
-is	*is*	*is*	*is*	*is*		*is*
-ra	*ra*	*ra*	*ra*	*ra*		*ra*
-pup	*pup*	*pup*	*pup*	*pup*		*pup*
DS	*ad*	*ad*	*ad*	*ad*	*ad*	*ad*

Independent variables: CA = Concepts and Approaches (*idb* = international drainage basin; *twil* = transboundary watercourses and international lakes; *iw* = international watercourses, *isws*= international shared watercourse system; *wea* = wider ecological approach) SP = Substantive Principles (*eu* = equitable utilization; *sd* = sustainable development; *nhr* = no-harm rule; *ie* = intergenerational equity; *pp* = precautionary principle; *ppp* = polluter pays principle; *dcd* = duty to compensate damage, *edb* =equitable distribution of benefits); IM = Implementation Mechanisms (*jc* = joint commission; *ua* = use

allocation; *pim* = protection and improvement; *is* = information sharing; *ra* = reporting and assessment; *pup* = public participation); DS = Dispute Settlement venues (*ad* = adjudication; *a* = arbitration)

The index shows that the modern treaties have embraced the wider scope of application of the Concepts and Approaches (CA) in comparison to older treaties. Similarly, the modern treaties recognize the Substantive Principle (SP) of equitable utilization, no-harm and sustainable development. This also illustrates that the Implementation Mechanisms (IM) are accurately defined and Dispute Settlement (DS) venues are properly identified.

The apparent recognition of a wider ecological concept, the recognition of the principle of equitable utilization, inclusion of the appropriate implementation mechanisms and clear-cut rules on dispute settlement and specific venues in the 1990's treaties is overwhelming. This leads to the conclusion that the sovereignty of State is not absolute, but it is relative: equitable utilization is the governing principle of the uses and protection, which recognizes the vital human needs for drinking and food production; neither the upper nor lower riparian States have the right to veto the others; first use does not prevail over the later development; neither the regime of uses nor the regime of protection can ignore the importance of each other's; treaties, whose implementation cause transboundary environmental harm, are subject to renegotiation based on the criteria of equitable utilization and sustainable development.

16.5. Trends in State practice

The first trend in the riparian State practices concerns the new institutional modality of the river commissions. Along with the regular type of classic joint river commissions, the modern riparian State treaty practices witness the emergence of new kinds of institutions. The "Rhine Contract"[1347] seems to harmonize private and public international law of watercourses. As an international public corporation, the "International Mosselle Company"[1348] established by the basin States, with the States themselves as shareholders, aims at financing and coordinating construction works. Another kind of institution is the "Senegal River Organization,"[1349] which is established as a structure of planning and management. While the "Karega River Basin Organization"[1350] is aimed at management of joint water development to undertake tourism, transportation, and other economic development projects, yet another model for the same purpose is the "Mano River Union." Also important among models of watercourse commissions, as far as public international law is concerned, is the Finnish-Swedish Frontier River Commission,[1351] which has transboundary jurisdiction.

[1347] See, Section 4.7.
[1348] Ibid.
[1349] See, Section 6.4.
[1350] Ibid.
[1351] See, Section 4.6.

A common trend of the relevant treaties is the establishment of joint river commissions to settle differences or disputes related to international watercourses.[1352] A distinctive characteristic of the treaties is that there is more of an established trend of judicial settlement of international watercourse disputes in Europe and North America than in Asia and Africa. A few European treaties provide for the compulsory unilateral arbitration.[1353] The modern international watercourse treaties of the continents of Asia and Africa[1354] provide for diplomatic means of dispute settlement. A few treaties choose arbitration as the method of dispute settlement.[1355] At the same time, negotiation appears to be the main means of resolving watercourse conflicts (e.g. the Ganges' Farakka Barrage case).

The riparian State practice shows that watercourse treaties are complied with even in a tense state of relations between the parties to the treaty. However, the looming question of the present time - amid the rising international water crises, conflicts and likelihood of water wars - is this: are the existing means of dispute settlement and conflict resolution the appropriate means to prevent the outbreak of water wars, given the shortcomings of the existing international order. The parties to an international dispute (whether related to watercourses or not) - a dispute that is likely to endanger international peace and security - are required to seek to settle their dispute by peaceful means.[1356] Riparian State practice needs to develop further, especially concerning the compulsory fact-finding procedures provided for by Article 33 of the 1997 UN Convention, which aims to prevent as well as resolve international watercourse conflicts.

The second trend in the riparian States treaty practice is that entitlement to the use of watercourses is now governed by the principle of equitable utilization. The European riparian States treaty practice shows harmonization of the legal regimes of protection and uses, particularly the riparian State's obligation for the implementation of the principles of equitable utilization and sustainable water use. Several watercourse treaties of Asia and Africa recognize the principle of equitable utilization, and the relationships between use and protection, while others still lack any reference to such relationship. The riparian States practice also shows the use of different kinds of principles, e.g. historic entitlement, equal partnership, mutual benefit, no-harm, equity and equitable utilization. Since the early 1990's, the principle of equitable utilization aiming to achieve a sustainable development has been incorporated into international water related agreements. These treaties have recognized the

[1352] For example, the 1960 Indus Treaty.
[1353] Article 16 of the 1976 Rhine Chlorides Convention and Article 13 of the Chemical Convention.
[1354] The 1995 Mekong Agreement and the 1995 SADC Protocol.
[1355] The 1996 Ganges and the Mahakali treaties.
[1356] Article 33 of the UN Charter.

interrelationship between the regimes of protection and uses of international watercourses.

The modern treaties require that riparian States should regulate, control and prohibit certain forms of pollution discharge into shared international watercourses, distinguishing between new and existing pollution. A few of them prohibit water pollution absolutely.[1357] The examined riparian treaty practices show that States have assumed obligations to prohibit transboundary environmental damage. This has been done more effectively in European and North American riparian States treaty practice.

The treaties of Europe relating to water use allocation and transboundary impacts of uses regulate the conduct of the parties for ensuring equitable and reasonable use of international watercourses. Some examples in this respect are the 1992 ECE Helsinki Convention in general, the 1977 Danube Convention,[1358] and the 1994 Meuse and Scheldt Agreements[1359] in particular. These treaties establish mechanisms of cooperation to deal with the problems of environmental degradations. The 1998 Rhine Convention provides goals, principles and obligations,[1360] balancing sustainable development and equitable use. The basic idea of the European States practice appears to be cooperation between the parties and the creation of a framework to assist in the implementation.

As regards Asia, the 1995 Mekong Agreement is a model example, based on the principle of equitable utilization. The treaty gives a predominant place to this principle, compared with all other principles and concepts, including sustainable development.[1361] Detrimental harm is prohibited through the application of the principle of equitable utilization, according to the 1994 Chinese-Mongolian Agreement.[1362]

In order to enforce the agreed water use allocation, there is a prohibition of damage and compensation provided for by the 1960 Indus Treaty between India and Pakistan.[1363] In this Treaty, the obligation of not causing significant harm is recognized as a substantive rule in order to safeguard existing use.[1364]

The 1994 Israeli-Jordanian Agreement gives the no-harm rule priority over the principle of equitable utilization.[1365]

In Africa, the 1995 SADC Protocol is a progressive document, embracing the principle of equitable utilization and underlining the obligations of preventing environmental damage.[1366] The obligation to consult regarding

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[1357] For examle, the 1978 Great Lakes Water Quality Agreement.
[1358] Article 5.
[1359] Article 2.
[1360] Articles 3, 4 and 5 .
[1361] Article 5.
[1362] Article 2.
[1363] Article 4.
[1364] Articles 1(2), 3(1)(6), 4, 5(2), and 6(2).
[1365] Annex II.
[1366] Article 2.

activities likely to cause pollution or environmental damage is spelled out by the 1964 Niger River Agreement.[1367]

The 1971 Protocol signed by Argentina and Chile, which prohibits the transboundary environmental harm, exemplifies the riparian State practice of South America.[1368] An absolute prohibition of pollution in successive rivers is laid down in the 1971 Declaration on Water Resources signed by Argentina and Uruguay.

In North America, the 1909 Treaty between the United States and Canada did not prohibit pollution.[1369] Even later legal arrangements between the two countries reflected this tolerant attitude towards pollution. The 1978 Agreement is a good example in that it regulates polluting discharges, but does not prohibit them.

The third trend in riparian State practice is the balancing of mutual interests of uses and protection. The mutual interests of the riparian States is a determining factor for the evolution as well as the enhancement of the legal regimes of navigational use, non-navigational uses and the environmental protection of international watercourses.

As a result of the mutual interests of the riparian States of Europe, in the early 19th century, the Congress of Raestadt recognized free traffic on international rivers for the purpose of navigational use. This resulted in the acceptance of the principle of the freedom of navigation in the succeeding centuries, not only in Europe but in other continents, paving the way for the fulfillment of the needs of transportation and communication, especially trade and commerce.

With the increase of non-navigational uses, many new conflicts emerged. From the late 19th century onward, the arguments centered around the concept of absolute sovereignty in the use of international watercourses. The principle of equitable utilization, which reflects mutual interests of the riparian States, has, however, decreased the tensions and struck a balance between navigational and non-navigational uses.

As a result of the awareness of the importance of environmental protection, the riparian States at the end of the 20th century adopted regimes of environmental protection for many international watercourses. Each international watercourse embodies a unique hydrological and hydro-political situation, and as a result, there are obvious differences in the implementation of the treaties. Essentially, the treaties reflect the mutual interests of the riparian States and the interrelationship between the legal regimes of international watercourses.

Finally, as regards the elaboration of the named trends, some riparian States treaties have been of particular significance. They are: the 1909 United States-Canada Boundary Waters Treaty[1370]; the 1963 Niger River

[1367] Article 12.
[1368] Articles 1 and 5.
[1369] Article IV .
[1370] See, Section 8.3.

Act[1371]; the 1969 Treaty on the River Plate Basin[1372]; the 1971 Finnish-Swedish Frontier River Agreement[1373]; the 1978 Amazon Treaty[1374]; the 1978 Agreement on Great Lakes Water Quality[1375]; the 1987 ZACPLAN[1376]; the 1992 ECE Helsinki Convention[1377]; the 1994 Danube Convention[1378]; the 1995 Mekong Agreement[1379]; the 1995 SADC Protocol[1380]; the 1998 Rhine Convention[1381]; and the 1998 Peru-Ecuador Treaty.[1382] These treaties are evidence of the fact that harmonization of the legal regimes of international watercourses has developed despite the unique hydrological and hydro-political characters of the various watercourses.

Riparian State treaties of the 1990's made a breakthrough in integrating the legal regimes. These treaties demonstrate the importance of an integrated approach to the legal regimes of international watercourses, and vindicate our thesis regarding parity of the regimes positively (the 1992 ECE Helsinki Convention, the 1995 Mekong Agreement, the 1995 SADC Protocol and the 1998 Peru-Ecuador Agreement) and by negation (the case study of the Himalayan Basin, including the 1996 Mahakali and Ganges Treaties).

The case study of the international water basins of Europe demonstrates that the 1992 ECE Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes, which by its very title implies both protection and uses, adopts an integrated legal perspective of the respective regimes. The guiding principles of this convention are the core principles of the regime of environmental protection, which include the precautionary principle and the polluter-pays principle, by virtue of which costs of pollution prevention, control and reduction measures are to be borne by the polluter. In addition to these principles, the 1992 ECE Helsinki Conventions takes into account the need of the present generations without compromising the possibility of the future generations to meet their own needs. Principles of protection and uses are to be considered simultaneously with the best environmental practice and best available technology, also defined by the convention. Issues of human health are interconnected with the issue of water uses in this convention.

[1371] See, Section 6.4.
[1372] See, Section 7.2.
[1373] See, Section 4.6.
[1374] See, section 7.3.
[1375] See, Section 8.4.
[1376] See, Section 6.4.
[1377] See, Chapter 9.
[1378] See, Section 4.7.
[1379] See, Chapter 10.
[1380] See, Chapter 12.
[1381] See, Section 4.7.
[1382] See, Chapter 13.

This convention not only integrates the protection and uses of transboundary watercourses and international lakes but also links the legal issues between the transboundary watercourses and the salt waters of the seas. By permitting the non-European States to be parties to this convention, it can be argued that the 1992 ECE Helsinki Convention takes a broader approach than ordinarily continental agreements.

In the case study of the Mekong Basin, it has been demonstrated that the 1995 Mekong Agreement, recognizing the principle of equitable utilization and sustainable development, has established a harmonized regime. The regimes of uses and protection are harmonized through the requirement of mitigation of harm. Even though there is no simultaneous application of the principle of equitable utilization and sustainable development in this Agreement, the parity of the regimes of uses and protection is underscored.

In the case of the Southern African water basins, the important contribution of the 1995 SADC Protocol is that it has established an integrated legal regime through the recognition of the international watercourse as a *system*, governed by the principle of equitable utilization for the purpose of achieving a sustainable development. The protocol is a more progressive document compared to the 1997 UN Convention since it treats shared waters as a system.

The case study of the Amazon water basin shows that the regimes of uses and protection of the basin established in the 1970's progressed further by the 1998 Treaty between Peru and Ecuador.[1383] This treaty establishes a relation between navigational use, trade, tourism and multimode transport. It vindicates the objectives of the study positively, in the sense that navigational use and non-navigational uses are interrelated in terms of economic importance; in this case the economic importance of navigation and tourism are considered as equal. This treaty applies to security interests of the host riparian State, the protection of environment of inland waterways, including pollution caused by vessels.

Since the late 1990's, a similar legal arrangement linking navigation with trade and tourism has been a subject of negotiations between the parties to the Mekong regime, which may lead to the application of the Peru-Ecuador model to the Mekong regime.

Unlike the other selected case studies of the 1990's treaties demonstrating the integrated legal perspective, the 1996 Ganges and the 1996 Mahakali treaties concerning the Himalayan water basin vindicate by negation the assertions of this study.[1384] This case suggests that, as a result of the lack of an integrated legal arrangement for the Himalayan basin, the basin States are unable to benefit from the uses of watercourses and the environment of the region is adversely affected. Apparently, nowhere is the gap between what is possible and what is extant more poignant than the Himalayan basin case. While the 1996 Ganges Treaty has adopted equity

[1383] See, Chapter 13.
[1384] See, Chapter 11.

and fairness principles as to the use allocation of the Ganges River at the Farakka Barrage, which is distinct from the principle of equitable utilization, the 1996 Mahakali Treaty has adopted the equal share principle (which is also different from the principle of equitable utilization). Both the 1996 Ganges and Mahakali treaties failed to take into consideration the concept of sustainable development.

These two treaties represent a piecemeal management paradigm based upon normative security of military defense with strict interpretation of State sovereignty. Negotiations of these treaties are based upon the political positions of the parties rather than actual larger economic needs and environmental protection. Adjustment mechanisms of these treaties are rigid and the sharing of information of watercourse related-data is problematic. Political posturing among basin States appears to be the problem for the legal arrangement of the Himalayan basin.

There is a clear contrast between the potential benefits from uses of waters of the Himalayan basin and the existing poverty of the region. This case clearly demands an integrated legal approach to the use and protection of the basin. In recent years, the regional water-sharing scheme is being discussed at a diplomatic level concerning the Himalayan basin, and it seems that there is a widely perceived need in the region for equitable utilization, sustainable development and integrated management, but a legal arrangement has not yet been negotiated. This is also the case with respect to the "shared vision" on the Nile River.

Against the arbitrary use of the absolute sovereignty in the previous centuries, the 20th century international court practice[1385] initially recognized the community interest of the riparian States as to the regime of navigational use, ensuring the freedom of navigation on international navigable rivers. With respect to the regimes of non-navigational uses and environmental protection, the 20th century jurisprudence eventually recognized the principles of equitable utilization and sustainable development, which are also established in the riparian State treaties.

Just as with the other sources of the law of international watercourses, even the jurisprudence of international courts has underlined the equal importance of the three legal regimes.

While the *River Oder Case* acknowledged the community interest of the riparian States with respect to the navigational use, the *Faber Case* underscored the security interests of the host riparian State in exercising the freedom of navigation on an international river. Furthermore, the *Oscar Chinn Case* spelled out navigational use as a means of transportation, linking the freedom of transportation with that of commerce.

Regarding the diversion of water from an international river, in the *River Meuse Case,* the court touched upon the maintenance of the level of waters in consideration to the environment. In this case, parties were required to

[1385] See, Chapter 15.

negotiate the diversion of water. The *Lake Lanoux Arbitration* emphasized the relative sovereignty of the riparian States with respect to the use and protection of shared waters.

In the *Danube Gabcikovo-Nagymaros Project Case*, the ICJ declared the principle of equitable utilization as the governing principle of the use allocation of international watercourses. Obiter dicta in this case underlined the importance of the integrated legal approach to international watercourse law.

CHAPTER 17: CONCLUSIONS

A general conclusion of the study is that the regimes of uses and environmental protection of international watercourses are intimately related to each other, a connection which is clearly reflected in the development of an integrated legal perspective through the different sources of international law. The legal status and importance of these three regimes – navigational, non-navigational and environmental protection - is now on equal footing. These are the three interrelated legal regimes that have developed over a long period of time, beginning with the cooperation of riparian States, but at the same time conflicting with each other, and eventually leading to legal harmonization. This development as well can be seen in the shift of management modalities - especially since the 1990's, from the classic piecemeal approach towards an integrated management paradigm, aiming at long-term sustainable use of the world's international rivers. This conclusion is based on various factors, which for the purposes of this study are considered to be the main components of the integrated management paradigm.

There are three main factors: the first is the trends of the modern treaties, which have adopted the wider conceptual scope of international drainage basin, instead of the narrow focus of the international river. This shift from a narrow to a wider concept and approach came about with the recognition of the equal value of the regimes of uses and protection; and second perhaps more important is the worldwide endorsement of the substantive principles of uses and protection of international watercourses. From this endorsement, it is clear that the principle of equitable utilization is the general principle of international law, under which the riparian States are required to regulate the uses and/or protection of international watercourses through the negotiation of treaties. In addition, watercourse States are also required to observe this principle even in the absence of treaties.

The legal authority of the principle of equitable utilization, which includes various other principles such as the no-harm rule, precautionary principle, sustainable development and equity, has been clearly established in the 1990's treaty practices and by the decisions of the ICJ. Especially, the three regional framework conventions, i.e. the 1992 ECE Helsinki Convention, the 1995 Mekong Agreement and the 1995 SADC Protocol, have clearly recognized the principle of equitable utilization, which is defined by the 1997 UN Convention.

The principle of equitable utilization has also found a significant place in the relevant jurisprudence of the ICJ. In the *Danube Gabcikovo-Nagymaros Project Case*, the Court referred to the principle of equitable utilization as a norm of customary international law, endorsing it as the substantive principle and recognizing the equal value of the regimes of uses and

protection. Given the *travaux préparatoires* of the 1997 UN Convention with respect to the principle of equitable utilization, the relevant ICJ practice and international watercourse treaties of the 1990's, it is submitted that this principle is now generally recognized and may even be considered as a general principle of law.

The third factor, leading to the main conclusion of this study, is that modern law of international watercourses is equipped with effective implementation mechanisms of the legal regimes. These mechanisms provide for cooperation, consultation, information sharing, participation, and institutional cooperation. The classic international watercourse treaties used to focus more on the dispute settlement rules rather than institutional mechanism of compliance. This was due to the presumed inevitability of non-compliance. The modern international watercourse treaties have instead in most cases adopted both dispute settlement and institutional mechanisms for verifying compliance.

It is a postulate of contemporary international watercourse law that no regime is more or less important than the other. The recent development of the law indicates a reconciliation of the positions of developmentalists and environmentalists regarding the exploitation of natural resources. One of the objectives of the 1972 Stockholm Declaration was to bridge these opposing positions, but it was first in 1987, through the Report of the World Commission on Sustainable Development, that an attempt at reconciliation was officially articulated. In reconciling the contradictions of development and environmental protection, the principle of equitable utilization acknowledges the uniqueness of each international watercourse and provides for the equitable - sustainable - utilization taking into account the relevant factors in a given case.

The present law of international watercourses requires riparian States to work out an integration between the uses and environmental protection with due regard to three main agenda items: 1) sufficient water for navigational use; 2) consideration of the impact of navigational use to non-navigation uses and vice versa; and 3) compensation for damage caused by the uses - aiming at protection, improvement and restitution of the watercourse.

As regards the present state of the legal regime of navigational use, international rivers are governed by the principle of equitable sharing, taking into account the community of interest of the riparian States. However, the security interests of the host State needs to be respected by the State exercising the freedom of navigation on a shared international river. Freedom of navigation is generally a matter of regulation through treaties between riparians in accordance with the principle of equitable utilization. Nonetheless, the uniformity of rules regarding navigational safety, policing and the collection of dues, must be maintained. Non-riparian States are generally not granted the freedom of navigation.

However, through mutual consent or reciprocity, States are free to provide freedom to non-riparians.

Regarding the present state of the legal regime of non-navigational uses of international watercourses, use allocation is to be determined with due regard to the rules on State responsibility, the law of treaties, the principle of equitable utilization and no-harm rules. Projects which cause serious human and environmental harm are proscribed. This may also mean that treaties the implementation of which may have some adverse effects on the environment or human health might perhaps have to be renegotiated. There can be no priority of any water use over another. However, existing use with respect to drinking and irrigation is to be particularly taken into consideration when determining the equitability of a certain utilization.

The jurisprudence of the courts underlines that the doctrine of community interest of the riparian States, initially recognized concerning navigational use (*River Oder Case* 1929), has been extended recently to also include non-navigational uses (*Gabcikovo-Nagymaros Project Case* 1997). The international community interest as a whole may also be relevant to the protection and use of national or international rivers. However, the content and scope of the international community interest is not clearly defined.

As to the present state of the legal regime of environmental protection, it can be said that the law of international watercourses takes into account the human environment and ecology, recognizing the relationship between water resources and other resources, e.g. soil and air. An ecological unit consists of living and non-living components that are interdependent and function as a symbiotic community. In terms of the regime of protection, this symbiotic community is a concept, which encompasses all dynamic relationships between flora, fauna, and the geographical elements, which sustain them. The key principles that emerged concurrently with the idea of the ecological unit are the concept of equitable utilization and the no-harm rule, and these serve as the two lynchpins of the balance between the regimes of uses and protection. Thus, the protection of ecosystems concerning international watercourses is subject to the principle of equitable utilization and no-harm rules. This also includes protection against cross-media (e.g. soil, water and air) pollution, and an obligation of States to prevent, control and abate such pollution.

The regime of environmental protection aims at prevention, improvement and restitution, governed by the polluter-pays principle, precautionary principle and liability to compensate for losses. The sustainable development is the objective of equitable utilization, which is the corner stone of the regime of environmental protection.

According to the principle of equitable utilization, a particular use is to be determined on a case-by-case basis taking into consideration vital human needs, i.e. drinking water and irrigation. This means that the pre-1997 treaties, for example the 1909 Boundary Treaty between the United States and Canada, which prioritize domestic use, irrigation,

hydroelectricity, navigation, fishing and others, may remain compatible with the 1997 UN Convention. The treaties establishing no-priority of uses, for example the 1995 Mekong Agreement, are equally compatible with the 1997 UN Convention. The pre-existing treaties are to be adjusted with the principles of the 1997 UN Convention. New treaties are required to be concluded in line with the notions of the Convention.

The trend in international watercourse treaties indicates the emergence of multiple concepts and approaches within the limited sovereignty of riparian States. With respect to navigation and riparian State boundaries, the international river concept applies; the international drainage basin concept is often used when referring to the regime of environmental protection. The international watercourse concept is also used in terms of qualitative and quantitative use allocation of water.

Both drainage basin and watercourse concepts appear to imply the relevance of the hydrological unit approach, yet only to the extent to which there is a direct connection between surface water and groundwater. However, none of the concepts developed so far seems to comprise the whole hydrological cycle, which includes atmospheric water, including cloud seeding and diversion of cloud and rain. It remains unregulated or partly regulated. This study has shown that an integrated and harmonized comprehensive approach is needed to include even the neglected elements of hydrological cycle in the legal order related to international watercourses.

With respect to efforts for approximation of various theories relating to water rights and duties of the riparian States, the general conclusion of the study is that the principle of equitable utilization provides for a basis of rights and duties of the riparian States. Theories of law governing international watercourses were controversial since the time of their inception. One of the classic controversies concerned the absolute sovereignty of States. This is now substituted by the substantive principle of equitable utilization,[1386] which underpins the classical theories and determines the legitimacy of water use by balancing all relevant factors for each particular case.[1387]

The principle of equitable utilization and the no-harm rule have also given rise to some controversies. At present, there seems to be two schools of thought with regard to the applicability of the principle of equitable utilization. Some argue that the equitable principle as a separate and distinct legal principle is ambiguous.[1388] Others argue that the principles of equity have long been treated as a part of international law, and applied by the courts of law; thus, they must still apply.[1389] Still others argue that to resort to the concept of equity, which developed through case law, in order

[1386] Article 5, 6 and 7 of the 1997 UN Convention.
[1387] For example, climate, population, prior uses and alternative resources - Article 6.
[1388] Nollkaemper, 1993.
[1389] *Elsalvador/Hundarus Case, ICJReports*, 1992, p.35

to modify an established frontier of law, would be quite unjustified.[1390] In order to settle this controversy the 1997 UN Convention defines the equitable utilization as a process and equity is confined to compensation for damages.

Even though there are a number of watercourse treaties that recognize the principle of equity, the 1997 UN convention is based on the principle of equitable utilization, which is deemed as a process, along with the no-harm rule. Accordingly, the riparian States are required to take into account the risk for significant harm while planning the development of international watercourses. As to the appreciable harm, the concerned States are expected to reach a solution based on equity rather than one based on equitable utilization.

Still, some lawyers appear to be in favor of the principle of equitable utilization because of its vagueness, whereas other jurists are in opposition to any vagueness in the law. Those who support vague laws argue that this will provide flexibility to the watercourse States and a process guided by the principle of equitable utilization, which may ultimately lead to successful negotiations. Those who believe in clearly defined laws argue that vagueness is a constraint on law, since it gives discretion to States to misuse the law.[1391]

Reading together the provisions relating to equitable utilization (Article 5 of the 1997 UN Convention, its criteria (Article 6), the no-significant harm rule (Article 7), sustainable utilization/development (Articles 5 and 24) and the fact finding commission (Article 33), the principle can be considered as a process aimed at sustainable utilization, to be achieved on a case by case basis. This implies that all equitable utilizations may not necessarily be sustainable (Article 5) or result in sustainable development (Article 24). Thus, a use causing significant harm shall be prohibited (Article 7). At the same time, a use causing less than significant harm, both in terms of environment and water related interests may be allowed provided that the States causing harm pay equity damage to the harmed States. The establishment of equitable utilization can be achieved based on the findings of the fact-finding commission.

As the riparian States are always concerned to protect their vested interests, the equitable utilization of shared international watercourses is, ultimately, a political process despite the fact that it is recognized as a legal principle. It is especially evident in the process of determining how to equitably utilize a given resource with due regard to the social and economic needs of the riparian States. The substantive principles of the 1997 UN Convention seem to have due regard to the hydro politics of riparian States, which may foster equitable utilization, but it may also hinder such utilization as long as one State's need is met at the cost of another State, i.e. *unjust enrichment*.

[1390] Shaw, 1997, pp.82-86.

[1391] Nollkaemper, 1993.

Thus, some experts have argued that the principle is based upon the normative security paradigm where the needs and interests of the riparian States are poised against each other,[1392] where there is a danger that one's needs will go unfulfilled because of the cost to other riparians. This *a priori* presumption is countered by several schools of thought, most notably the collectivists, whose approach advocates the collective utilization of watercourses by the watercourse States. The collectivists advocate in favor of participatory water rights, which mean that each individual human being, collectively or individually, has the right to use water resources, provided he/she ensures the conservation thereof.[1393] This is the notion of human rights relating to water with corresponding duties.

The widely perceived need for sustainable development has led to the recognition of equitable utilization as the core principle in public international water law. This has occurred alongside an increasing interest in integrated regimes for water use. The present study has sought to outline why this is not a coincidental occurrence within the law, and to indicate that this has been part of an overall trend in global water issues.

The study has also shown that not all the environmental, technical and political needs have been dealt with by the current regimes. In addition, the principles of equitable utilization and sustainable development are still being put into practice, both in terms of inclusion within the treaties, and in actual implementation. It may be expected that the mutual interests of riparian States should further foster the recognition of the need for integrated management and cooperation concerning international watercourses. An integrated legal regime of the earth's fresh waters based on the consideration of the hydrological cycle will be the ultimate framework for the prudent management of international watercourses.

[1392] Brunnee and Toope, 1997, pp.26-59.

[1393] See, Second International Water Tribunal Declaration, *EPL*/22, 1992, p.120.

APPENDIX : CHRONOLOGY•

1. European Treaties

1804 Congress of Rastadt, abolishing the various tolls on the Rhine River (*navigational use*), *Grotius Society Publications No.1, International Rivers, A Monograph Based on Diplomatic Documents* (Kaeckenbeeck, 1918), Chapter II.

1814 Treaty of Paris, declaring free navigation on the Rhine River (*navigational use*), ibid.

1815 Final Act of the Congress of Vienna, recognizing the concept of international river and the freedom of navigation, establishing the central Commission on the Rhine (*navigational use*), ibid.

1821 Agreement between Prussia and Saxony, applying the freedom of navigation to the Elba River (*navigational use*), ibid, Appendix I.

1829 Treaty of Adrianople, providing Russia the freedom of navigation in the Suline mouth of the Danube River (*navigational use*), ibid.

1840 Treaty of St.Petersburg between Austria and Russia (*navigational use*), ibid.

1856 Treaty of Paris, establishing the Danube Commission (*navigational use*), ibid, Chapter II.

1857 Convention between Austria, Hungary, Badan, Bavaria, Lechentenstien, Switzerland and Wuttemberg concerning fishing in the Lake Constance, (*non-navigational use*), *ST/LEG/SER.B/12, Legislative series Treaty* No.109.

1868 Revised Convention on Navigation on the Rhine, Mannheim, (*navigational use*), *Grotius Society Publications No.1, International Rivers. A Monograph Based on Diplomatic Documents* (Kaeckenbeeck, 1918), Chapter II.

1871 Treaty of London, regulating navigational use of the lower Danube (*navigational use*), ibid.

1878 Treaty of Berlin, reaffirming the legal position of the Danube Commission (*navigational use*), ibid.

1883 London Conference, providing navigation on the Danube from Braila to Iron Gates (*navigational use*), ibid.

1885 Convention between Switzerland, Germany and the Netherlands regulating Salmon fishing in the Rhine River, (*non-*

• This chronology is based on the following sources: Oakes, A and Mowat, RB ed, *The Great European Treaties of the Nineteenth Century* 1918; Kaeckenbeeck 1918; *ST/LEG/SER.B/12*; Hyperlinks, see <http://www.internationalwaterlaw.org/> (revisited Nov.11, 2004);<http://www.dundee.ac.uk/cepmlp/water/>(revisited Nov.11, 2004); <http://www.un.org/law/cod/watere.htm>(revisited Nov.11, 2004).

navigational use and fish stocks), *ST/LEG/SER.B/12, Legislative series Treaty* No.112.

1919 Treaty of Sant-German-en-Laye with Austria, Treaty of Trianon, Sant-German-en-Laye with Hungary *ST/LEG/SER.B/12, Legislative series Treaty* No.116.

1921 Barcelona Convention on the Regime of Navigable Waterways of International Concern, the Definitive Statute of the Danube, declaring the river open to all flags (*navigational use*), 7 *LNTS*, 35.

1922 Statute for Navigation in the Elba River, (*navigational use*) 26 *LNTS*, 219.

1922 Convention between the Republic of Finland and the Russian Socialist Federal Soviet Republic concerning the maintenance of river channels and regulations of fishing on watercourses forming the parts of the frontier between Finland and Russia (*non-navigational use*), *ST/LEG/SER.B/12, Legislative series Treaty* No.173.

1922 Convention between Finland and the Russian Socialist Federal Soviet Republic, (*floating timber*), *ST/LEG/SER.B/12, Legislative series Treaty* No.174.

1924 Agreement between Belgium and Holland regarding navigation on the maritime Scheldt (*navigational use*) see, in Colombos, 1967, p.242.

1924 Convention Instituting the Definitive Status of the Danube River, (*navigational use*) 26 *LNTS*, 173.

1947 Protocol Concerning Amendments to the Regulations for Lake Inari in connection with the use of the Niskakoski Dam (*non-navigational use*), *ST/LEG/SER.B/12, Legislative series Treaty* No.120.

1948 Convention concerning the Regime of Navigation on the Danube (with annexes and supplementary protocol), Union of Soviet Socialist Republics, Bulgaria, Czechoslovakia, Hungary, Romania, Ukrain Soviet Socialist Republics and Yugoslavia (*navigational use*) 52 *RGDIP*, 560.

1950 Protocol to Establish a Tripartite Standing Committee on Polluted Waters, Belgium, France and Luxembourg (*environmental protection*) *ST/LEG/SER.B/12, Legislative series Treaty* No.122.

1952 Agreement Between the Government of the Republic of Austria and the Government of the Federal Republic of Germany and of the Free State of Bavaria Concerning the Donaukraftwerk-Jochenstein-Aktiengesellschaft, Danube Power Plant and Jochenstein Joint-Stock Company, (*non-navigational use*) see, http://www.internationalwaterlaw.org/.

1955 Agreement Between the Government of the Federal People's Republic of Yugoslavia and the Government of the Hungarian People's Republic Together with the Statute of the Yugoslav-Hungarian Water Economy Commission (*non-navigational uses*), *ST/LEG/SER.B/12, Legislative series Treaty* No.228.

1956 Convention on the Canalization of the Mosel River (*navigational and nonnavigational uses*), *ST/LEG/SER.B/12, Legislative series Treaty* No.123.

1957 Agreement Between the Government of the Federal People's Republic of Yugoslavia and the Government of the People's Republic of Albania Concerning Water Economy Questions, Together With the Statute of the Yugoslav-Albanian Water Economic Commission and the Protocol Concerning Fishing in Frontier Lakes and Rivers (*non-navigational uses*) *ST/LEG/SER.B/12, Legislative series Treaty* No.128.

1958 Agreement between the Government of the Czechoslovak Republic and the Government of the Polish People's Republic Concerning the Use of Water Resources in Frontier Waters (*non-navigational uses*) see, http://www.internationalwaterlaw.org/.

1958 Convention (with annex) Concerning Fishing in the Waters of the Danube, Union of Soviet Socialist Republics, Yugoslavia, Bulgaria and Romania (*non-navigational uses*) *ST/LEG/SER.B/12, Legislative series Treaty* No.125.

1959 Agreement between the Union of Soviet Socialist Republics, Norway and Finland concerning the Regulations of Lake Inari by means of the Kaitakoski Hydroelectric Power Station and Dam, (*non-navigational use*), *ST/LEG/SER.B/12, Legislative series Treaty* No.126.

1960 Convention on the Protection of Lake Constance Against Pollution (*environmental protection*), *ST/LEG/SER.B/12, Legislative series Treaty* No.127.

1960 Agreement between the Republic of Finland and the Soviet Socialist Republics concerning the regime of the Finnish-Soviet State Frontier and procedure for settlement of frontier incidents (*environmental protection*), *ST/LEG/SER.B/12, Legislative series Treaty* No.177.

1963 Agreement on the International Commission for the protection of the Rhine against pollution (with protocol of signature), Switzerland, Federal Republic of Germany, France, Luxembourg and Netherlands (*environmental protection*), *FFCS* II, 1963; also see, http://www.internationalwaterlaw.org/.

1963 Supplementary Agreement to the 1963 Agreement on the International Commission for the Protection of the Rhine against Pollution (*environmental protection*) see,

http://www.internationalwaterlaw.org/.

1964 Convention on the International Commission for the Protection of the Oder (*environmental protection*), ibid.

1965 Agreement Between the Government of the Polish People's Republic and the Government of the Union of Soviet Socialist Republics Concerning the Use of the Water Resources in Frontier Waters (*non-navigational uses*), ibid.

1966 Agreement Regulating the Withdrawal of Water from Lake Constance (with Final Protocol) Switzerland, Austria and Federal Republic of Germany (*non-navigational use*), ibid.

1967 Convention to amend the Revised Convention on the Navigation of the Rhine River (*navigational use*), ibid.

1968 Agreement Between the Peoples Republic of Bulgaria and the Republic of Turkey Concerning Co-operation in the Use of the Waters of Rivers (*non-navigational uses*) Flowing Through the Territory of Both Countries (Maritsa/Marica, Tundzha, Veleka, Rezovska Rivers), ibid.

1969 Convention between the French Republic and the Federal Republic of Germany Concerning Development of the Rhine River between Strasbourg/Kehl and Lauterbourg/ Neuburweier (*non-navigational use*), ibid.

1970 Agreement Between the Government of the French Republic and the Spanish Government Relating to Lake Lanoux (*non-navigational use*), ibid.

1971 Agreement Between Finland and Sweden Concerning Frontier Waters (*non-navigational use and environmental protection*) 825 *UNTS*, 272.

1972 Regulation for Procedures before the Appeal Board of the Moselle River Commission (*navigational use*) see, http://www.internationalwaterlaw.org/.

1973 Convention concerning navigation on Lake Constance (with annex and additional protocol), Austria, Federal Republic of Germany and Switzerland (*navigational use*), ibid.

1974 Protocol Amending the Convention on the Canalization of the Mosel River, (*navigational use*), ibid.

1975 Additional Protocol to the Revised Convention on Navigation on the Rhine River (*navigational use*), ibid.

1976 Convention on the protection of the Rhine against Chemical Pollution (with annexes), Switzerland, European Economic Community, Federal Republic of Germany, France, Luxembourg and the Netherlands (*environmental protection*) 16 *ILM*, 1977, 242.

1976 Convention on the protection of the Rhine against Pollution by Chlorides, 16 *ILM*, 1977, 265.

1977 Treaty between the Hungarian Republic and the Czechoslovak Peoples Republic concerning the construction and operation of the Gabcikovo-Nagymaros System of Locks (*multiple uses and protection*), 32 *ILM*, 1993, 1247.

1982 Additional Protocol No. 2 to the Revised Convention on Navigation on the Rhine (*navigational use*) see, http://www.internationalwaterlaw.org/.

1983 Second Protocol Amending the Convention on the Canalization of the Mosel River (*navigational use*), ibid.

1988 Third Protocol amending the Convention on the canalization of the Mosel River (*navigational use*), ibid.

1989 UN/ECE Charter on Ground-Water Management 1989, (*environmental protection included*), ibid.

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1938 Agreement between Argentina and Uruguay concerning the Uruguay Rivers (*non-navigational uses*), see, *ST/LEG/SER.B/12, Legislative series Treaty* No.39.

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1979 Agreement on Parana River – Argentina, Brazil and Paraguay (*non-navigational uses*), ibid.

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1998 Treaty of Trade and Navigation between Peru and Ecuador (*navigational and non-navigational uses* included), 38 *ILM*, 1998, 266.

5. North American Treaties

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1884 Treaty between the United States and Mexico concerning the boundary line following the Rio Grande River bed and the Colorado River (*non-navigational uses*), ibid.

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1906 Agreement between the United States and Mexico concerning the equitable distribution of Waters of the Rio Grande for irrigation purposes (*non-navigational uses*), ibid, *Legislative series Treaty* No.75.

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