



Economic Commission  
for Africa

# Water in Africa

*Management Options to  
Enhance Survival and Growth*

UN system-wide support to AU/NEPAD

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# Water In Africa: Management Options to Enhance Survival and Growth

Our planet Earth, seen from space, is an almost perfect beautiful blue sphere. The blue color shows the vast amounts of water found on earth but this apparent abundance is a mirage. Indeed, only about 2 percent of the blue landscape visible is fresh water with the rest being salt water, which is useless for normal human consumption. To amplify the limitations of freshwater, only about half of it is available for use by the ever-increasing population of the world that is approaching six billion.

## *Water stress and scarcity*

A third of all nations are suffering from **water stress** (between 1000 and 1500 cubic meters per capita). Since 1950, world population doubled while water use tripled. Water scarcity, in both its quantitative and qualitative manifestations, is emerging as a major development challenge for many countries. In countries racing toward their physical limits to fresh water expansion, the amount of water available is a key concern. In other countries with expanding urban settlements, industrial sectors, and commercialized agriculture, water quality is a major concern.

## *Will water scarcity spark wars?*

Until recently, **water scarcity** (less than 1000 cubic meters per capita) generally had been conceptualized as a simple natural resource scarcity, a commodity scarcity, much like a scarcity of strategic minerals. If water scarcity were a simple commodity scarcity, then there would be a seemingly obvious high risk of conflict between countries who share a common water resource. How could one hope to get more water by going to war with another nation? This concept, which has been in vogue for a long time, however is not supported by facts.

The empirical evidence shows that there were very few, if any, water wars in history. While there have been tension around water, there have also been innumerable treaties prepared to accommodate the conflicting interests of nations sharing common water resources.

## *Societal responses to water scarcity*

In a very simplified sense, a society that is subjected to water scarcity responds in three progressive steps. **First**, it attempts to get and store more water. This is the water storage (dam-building) or harvesting phase of tradi-

tional water engineering. **Second**, it realizes that it has to conserve water in order to get more use out of every drop, for example through efficient irrigated agriculture. In the **third**, and most advanced, phase the society begins to realize that it must do things differently with the water it has, in order to get more value out of every drop. This last phase is exemplified by urbanization in which industries and cities, which produce much more value per water drop than agriculture, become the predominant users of the scarce water and provide greater proportion of the means of livelihood.

## **Key issues in Africa**

The key issue is the application of water resources management to the concept of water scarcity in Africa. Water is a crucial resource with great implications for African development. The freshwater situation in Africa, however, is not encouraging. Of the estimated 800 million who live on the African continent, more than 300 million live in water-scarce environment.

The importance of water for socio-economic development is well recognized globally, but with increasing population and industrialization and their demands for water for various uses, water scarcity is looming in many countries of the world. Lack of water hampers development through constraining food production, health and industrial development

Using the simplified model of society's response to water scarcity as a guide, the key issues in Africa are investing in the development of Africa's potential water resources, reducing drastically the number of people without access to safe water and adequate sanitation, ensuring food security by expanding irrigation areas and protecting the gains of economic development by effectively managing droughts, floods and desertification.

## **Investing in the development of Africa's potential water resources**

In order to increase access to safe drinking water and sanitation, as well as increase the size of irrigated areas, enough water must, obviously, be available. Availability of water in an area mainly depends on two interlinked factors: rainfall and internal renewable resources: the renewable resources are replenished by rainfall, and if the rains fail, the groundwater stocks are not replenished. For water management to be sustainable, withdrawals must be carefully managed to ensure that water is not overused. Actual withdrawals for agriculture, community water supply and industry in all but the Northern sub-region, are low as proportions of available water. Continentally, less than four percent of Africa's renewable water resources are withdrawn for agriculture, domestic supply and sanitation and industry. There are, therefore, ample water resources available that if developed and managed sustainably,

will enable Africa reach its water-related goals set within the framework of the MDGs and the Africa Water Vision 2025.

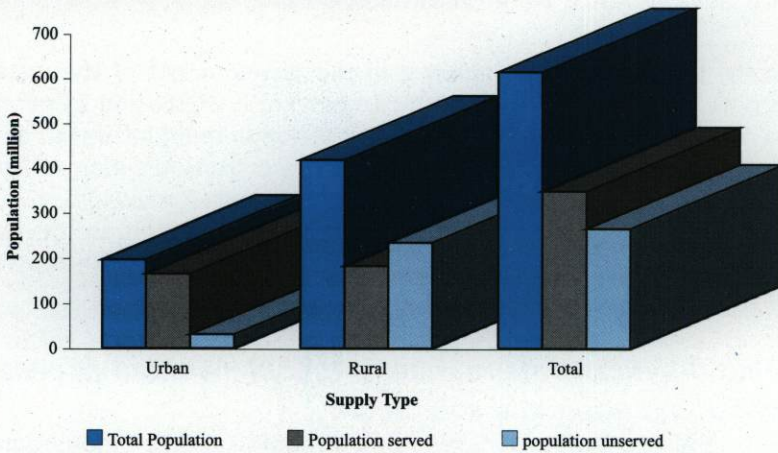
Specifically, this calls for an increase in the development of the water resources potential by 5 percent in 2005, 10 percent in 2015, and 25 percent in 2025 as recommended in the African Water Vision to meet increased demand from agriculture, hydropower, industry, tourism & transportation at national level. Currently less than 5 percent of Africa's internally renewable resources, and about the same percentage of its hydropower potential are developed. It is estimated that on aggregate, US\$ 20 billion per year will be required to achieve the targets of the Africa Water Vision 2025.

### ***Reducing drastically the number of people without access to safe water and adequate sanitation***

The MDGs and the WSSD Johannesburg Program of Implementation sets the target of halving the number of people without access to safe water and sanitation by 2015 while the Africa Water Vision ambitiously aims to reduce the number by 70 per cent by the same year.

Water supply and sanitation services are inadequate across Africa. About two-thirds of the African population live in rural areas, where water supply and sanitation services coverage is the poorest (refer to Figure 1). Urban areas, with generally more developed infrastructures, are better served but a significant proportion of urban dwellers also lack access to safe water and adequate sanitation. The problem of water supply and sanitation facilities for the urban poor is very complex. First and foremost, a distinction must be made between urban centres with declining water distribution systems due to inadequate, aging and overloaded networks and the issue of peri-urban dwellers. An estimated 82 per cent of urban residents in Sub-Saharan Africa have access to safe water and 55 per cent to sanitation facilities (Joint Monitoring Programme, 2002).

**Figure 1: African Water Supply Coverage**



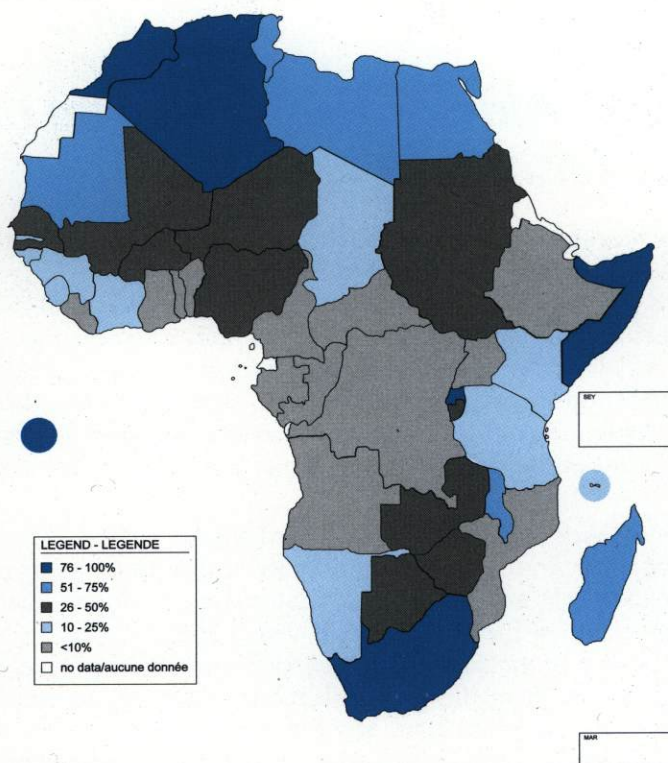
Source: Adapted from WHO/UNICEF JMP, 2005-[http://www.wssinfo.org/en/332\\_san-africa](http://www.wssinfo.org/en/332_san-africa)

However, the urban statistics combine the richest and poorest residents in a single average, thereby disguising the daily reality of the poor majority in large slums who lack reasonable access to safe water. For their small share of water, the urban poor pay an unfair price, usually from four to 10 times more per litre than the metered rates of those living in elite residential areas (Global Environment Outlook, 2000).

### **Achieving food security by expanding Irrigation**

Irrigation is key to achieving increased agricultural production that is important for economic development and for attaining food security. Presently, as Figure 2 shows, the vast majority of African countries are not tapping into the potential of irrigating agriculture. Barriers to this include lack of financial and human resources to build infrastructure and acquire technology.

**Figure 2: Water managed areas as percentage of irrigation potential**



Source: FAO, AQUASTAT

### **Protecting gains of economic development by effectively managing droughts, floods and desertification**

Water-related aspects of climate, such as droughts, floods and desertification have serious implications for African countries' development.

The single worst African drought disaster killed 300,000 people in Ethiopia in 1984. In 2002, 14.3 million people were affected by drought in the same country. In economic terms, the cost of droughts in Africa is enormous. For example, the economic impacts of the 1991/92 drought in Southern Africa resulted in a GDP reduction of \$3 billion, reduced agricultural production, increased unemployment, heavy government expenditure burden and reduced industrial production due to curtailed power supply.

A decade later, the 1992-2001 El Nino-related drought in Eastern Africa cost the Kenya economy alone about \$2.5 billion.



The Africa Water Vision aims at effective management of droughts, floods and desertification in half of African countries by 2015 and in all countries by 2025.

## ***UN-Water/Africa's role in helping to achieve Africa's water goals***

The major achievements in the water resources field stem from the formulation of the African Water Vision 2025 by all stakeholders under the leadership of ECA, AfDB and the OAU. This Vision was developed as part of the preparatory processes to the 2nd World Water Forum and has served as the framework for all activities by the major stakeholders in the water sector in Africa. Of crucial importance was the decision at a meeting of the three African regional bodies to map out a division of labor between them as a follow-up to the Hague Forum at the direction of the Chief Executives represented there.

This division of labor can be summarized as follows:

- Organization for African Unity (now African Union) was to mobilize political will and provide political guidance for the overall implementation of the African Water Vision 2025.
- ECA was to mobilize the UN system and other technical bodies in Africa (i.e. River Basin Organizations, IGOs etc) to provide technical analysis, information and other tools for the execution of programmes/projects for achieving the goals and targets of the Vision which were set out in a detailed Framework for Action.
- African Development Bank was to mobilize financial resources and set up instruments for funding programmes/projects towards the implementation of the African Water Vision 2025.

The major achievements which have resulted from this coordinated approach to tackling Africa's water issues are the formation of the African Ministers' Council on Water (AMCOW); the development of a "Portfolio of Sub regional Projects/Programmes" at the seminal Pan-African Implementation and Partnership Conference on Water (PANAFCON); the setting up of the African Water Facility with a funding target of US\$ 600 million, the institutionalization of a biennial African Water Development Report (AWDR) as a monitoring tool and the development of the African Water Information Clearing House (AWICH) which can be visited at [www.uneca.org/awich](http://www.uneca.org/awich).

