



MACROECONOMICS OF POVERTY REDUCTION:
THE CASE STUDY OF BHUTAN

The Asia-Pacific Regional Programme on
Macroeconomics of Poverty Reduction
UNDP Regional Centre in Colombo
August 2007



UNDP Bhutan
UN House Post Box - 162
Dremton Lam, Thimphu, Bhutan
Tel.: (975) 2 322424
Fax: (975) 2 322657
www.undp.org.bt

UNDP Regional Centre in Colombo
23, Independence Avenue,
Colombo 07, Sri Lanka
Tel.: +94 11 4526400
Fax: +94 11 4526410
Email: rcc.registry.lk@undp.org
www.undprcc.lk

Layout, Design & Printing by Bhutan Times

MACROECONOMICS OF POVERTY REDUCTION : THE CASE STUDY OF BHUTAN

S. R. OSMANI
B. B. BAJRACHARYA
SONAM TENZING
TASHI WANGYAL

August, 2007
2nd edition

A report prepared for UNDP under its regional project on the 'Macroeconomics of Poverty Reduction'

CONTENTS

Foreword	XI
Executive Summary	1
Chapter 1 Introduction	17
Chapter 2 Overview of the Economy	21
2.1 Growth and Structural Change	21
2.2 Savings and Investment	25
2.3. The Macroeconomic Environment	29
Chapter 3 POVERTY, HUMAN DEVELOPMENT AND EMPLOYMENT	37
3.1 Poverty and Human Development	37
3.2 The Regional Dimension	44
3.3 Employment and Unemployment	48
Chapter 4 Fiscal Policy	53
4.1 Major Features of the Fiscal Regime	55
4.2 Recent Budgetary Trends	57
4.3 Financing of Budgetary Expenditure	59
4.4 Domestic Resource Mobilization	65
4.5 Trends and Structure of Budgetary Expenditure	69
Chapter 5 Monetary and Financial Policies	73
5.1 Evolution of the Monetary and Financial System	73
5.2 Financial Institutions	74
5.3 Monetary Policy Framework and Policy Reforms	76
5.4 Analysis of Monetary and Financial Developments	78
5.5 Provision of Microfinance	86
Chapter 6 Trade Policy	89
6.1 The Background	89
6.2 The Trade Regime	90
6.3 The Trade Policy Regime	98
Chapter 7 Macroeconomic Policy and Poverty Reduction	105
7.1 Fiscal Policy and Poverty Reduction	105
7.2 Monetary and Financial Policy and Poverty Reduction	109
7.3 Trade Policy and Poverty Reduction	112
Chapter 8 Agriculture: Resources and Policies	119
8.1 Importance of Agriculture for the Bhutanese Economy	119
8.2 Structure of the Agricultural Sector	122
8.3 Food Crops: Trends, Potential, Constraints and Policies	128
8.4 Cash Crops: Trends, Potential, Constraints and Policies	135
8.5 Livestock: Trends, Potential, Constraints and Policies	140
8.6 Evaluation of Policy	145
8.7 Concluding Observations	149
Chapter 9 Forest Resources: Prospects and Constraints	153

9.1 General Overview	153
9.2 Current Policy Framework	154
9.3 Economic Significance of the Sector	157
9.4 Subsistence Use of Forest Resources	160
9.5 Commercial Use of Forest Resources	169
9.6 Policy Analysis	175
Chapter 10 Water Resources and Hydropower	181
10.1 Water Resources and the Bhutanese Economy	181
10.2 Development of the Hydropower Sector	183
10.3 Domestic Consumption of Electricity	191
10.4 Macroeconomic Impact of Hydropower Development	194
10.5 Further Development: Potential and Constraints	200
Chapter 11 The Industrial Sector: Prospects and Constraints	207
11.1 Introduction	207
11.2 Overview of the Industrial Sector	208
11.3 Trends and Structure of Manufacturing Industry	211
11.4 Employment Implications of the Industrial Sector	218
11.5 Constraints to Industrial Development	218
11.6 Tourism Industry	224
11.7 Policies for Industrial Development	227
Chapter 12 Toward a Pro-Poor Development Strategy for Bhutan	235
12.1 The Setting	235
12.2 The Need for a Two-Stage Strategy	237
12.3 Elements of the Transitional Strategy	238
12.4 Hard Choices in the Transitional Strategy	242
References	247
Annexures	253
Annex 1 Decentralization in Bhutan	253
Annex 2 Fiscal Subsidies	261
Annex 3 Microfinance in Bhutan	267
Annex 4 Cottage and Small Enterprise Sector in Bhutan	275
Annex 5 Hydropower and the ‘Dutch Disease’	281

Tables

Table 2.1	Average Annual Growth Rates: 1980-2004	22
Table 2.2	Sectoral Contribution to GDP Growth at Constant Prices	23
Table 2.3	Sectoral Share of Output at Constant Prices	23
Table 2.4	Growth Rates of Major Subsectors	24
Table 2.5	Contribution of Major Sectors to GDP Growth	26
Table 2.6	Compound Growth Rates of Savings and Investment	25
Table 2.7	Rates of Savings and Investment: 1981=2003	27
Table 2.8	Components of Investment: 1991=2003	29
Table 3.1	Prevalence and Incidence of Poverty: 2003	40
Table 3.2	Educational Attainment of Household Head by Poverty Statu: 2003	41
Table 3.3	Poverty Incidence, by Gender of Household Heads	41
Table 3.4	Health Status Indicators	42
Table 3.5	Enrolment and Completion Rates	42
Table 3.6	Proportion of Children Not Attending School by Reasons	43
Table 3.7	School Participation Rate by Poverty Status	43
Table 3.8	School Participation Rate Across Regions by Poverty Statu	44
Table 3.9	Regional Distribution of Government Expenditure	47
Table 3.10	Sectoral Distribution of Employment: 1998=2004	48
Table 3.11	Unemployment in Bhutan: 1998=2004	49
Table 3.12	Incidence of Unemployment by Age Groups	50
Table 3.13	Incidence of Unemployment by Educational Level 2004	50
Table 4.1	Budgetary Trends: 1990/91=2003/04	55
Table 4.2	Financing of Budgetary Expenditure	58
Table 4.3	Contribution to Revenue by sector	61
Table 4.4	Composition of Domestic Revenue	62
Table 4.5	Sources of Tax Revenue	62
Table 4.6	Shares of Current and Capital Expenditure	65
Table 4.7	Sectoral Pattern of Budgetary Expenditure	66
Table 4.8	Sectoral Allocations of Budget Outlay: 2003/04=2004/05	67
Table 4.9	Sectoral Expenditure at Different Levels of Government: 2003/2004	68
Table 4.10	Public Spending in Social Priority Sub Sectors	69
Table 4.11	Public Debt Burden	70
Table 5.1	Monetization of the Bhutanese Economy: 1981=2004	79
Table 5.2	Inflation Trends	79
Table 5.3	Comparative Inflation in Bhutan and India	80
Table 5.4	Growth of Money Supply and Inflation	80
Table 5.5	Trends in Interest Rates	81
Table 5.6	Expansion of Domestic Credit: 1992=2004	83
Table 5.7	Allocation of Advances by Economic Sectors	84
Table 5.8	Sectoral Distribution of Private=Sector Credit	85
Table 6.1	Trade Penetration Ratios: 1981=2003	90
Table 6.2	Current Account Balance: 1995/96=2003/04	91
Table 6.3	Direction of Bhutan's External Trade	92
Table 6.4	Composition of Bhutan's External Trade	93
Table 6.5	Import of Capital Goods into Bhutan: 1993=2003	94
Table 6.6	Bhutan's Current Account Balance with India and the Rest of the World	95
Table 6.7	Bhutan's International Reserves	97
Table 8.1	Share of Renewable Natural Resources (RNR) in GDP	120
Table 8.2	Sub Sectoral Breakdown of Agriculture's Contribution to GDP	120
Table 8.3	Agricultural Exports: 1998 and 2003	121

Table 8.4	Land Cover and Area	122
Table 8.5	Land Use by Farm Households	123
Table 8.6	Agricultural Landholding of Farm Households	124
Table 8.7	Wet and Dry Land Area by Land Tenancy Status	125
Table 8.8	Production Systems by Agro-Ecological Zones	125
Table 8.9	Production and Yield of Major Cereals	128
Table 8.10	Agricultural Exports and Imports: 1998 and 2003	130
Table 8.11	Production and Yield of Major Tree Crops	137
Table 8.12	Production and Yield of Major Vegetables and Spices	137
Table 8.13	Export of Major Cash Crops	139
Table 8.14	Livestock Population 1990=2003	141
Table 8.15	Production and Consumption of Dairy and Livestock Products in 2000	141
Table 8.16	Livestock Imports and Exports to India	143
Table 8.17	Trends in Registered Land Use	146
Table 8.18	Five Year Plan Outlays for the RNR Sector	147
Table 9.1	Contribution of Forestry and Logging to GDP	157
Table 9.2	Revenue Contribution of the FDCL	157
Table 9.3	Export of Wood Products	158
Table 9.4	Income from Migratory Livestock for Households in Haa	163
Table 9.5	Rural Timber Royalty Rates	165
Table 9.6	Amount of Timber Allotted for Rural House Construction	166
Table 9.7	Supply of Rural Timber	166
Table 9.8	Production Potential and Estimated Wood Demand by 2014	167
Table 9.9	The Pattern of Forest Use	169
Table 9.10	Average Auction Price of Timber	173
Table 10.1	Hydropower Plants in Bhutan	183
Table 10.2	Capacities and Generation of Major Hydropower Plants	184
Table 10.3	Cost and Financing of Major Hydropower Projects	185
Table 10.4	Comparative Power Tariffs	187
Table 10.5	Increase in the Electricity Export Tariff (EET)	188
Table 10.6	Electricity Generation, Consumption, Exports and Imports	190
Table 10.7	Projected Domestic Energy Demand 2005=2020	191
Table 10.8	Selected Potential Major Hydropower Projects	201
Table 11.1	The Size of the Industrial Sector	208
Table 11.2	Ownership of Industries	208
Table 11.3	Size Classification of Industries	209
Table 11.4	Government Share in Industries as of June 2002	210
Table 11.5	List of Public Sector Enterprises Corporatized	211
Table 11.6	The Structure of Industries	211
Table 11.7	Cost of Power in the Power-Intensive Industries	213
Table 11.8	Differential Power Tariff for Domestic Industry and Export	213
Table 11.9	Direction of Sales of Power-Intensive Industries	214
Table 11.10	Sales and Exports of Major Agro Industries Products	217
Table 11.11	Average Monthly Salary of Bhutanese and non-Bhutanese Workers	220
Table 11.12	Costs of Starting a Business	223
Table 11.13	Costs of Enforcing Contracts	224
Table 11.14	Overall Contribution of the Tourism Sector	225
Table 11.15	Tourism Arrivals and Receipts	225
Table A1.1	Types of Rural Taxes and their Rate Structure	256
Table A1.2	Rural Tax Collection for 1997/98 and 1998/99 Dzong Khag.	257
Table A1.3	Actual Government Expenditures (Total of Current and Capital) at Different Government Tiers (2003/04)	259

Table A2.1	Summary of Fiscal Subsidies	262
Table A2.2	Subsidy on Power Tariff	264
Table A3.1	BDFC Loan Schemes	269
Table A4.1	Programmes and Activities related to CSE Development	276
Table A4.2	Classification of Enterprises	277
Table A5.1	Shrinking Agriculture Relative to Other Sectors	282

Figures

Figure 2.1	GDP Growth Rate per Annum: 1981=2004	22
Figure 3.1	Bhutan's HDI Relative to South Asia	38
Figure 3.2	Trends in HDI in Bhutan: 1984=2004	38
Figure 4.1	Government Tax and Non-Tax Revenues and Power Exports	60
Figure 4.2	Comparison of Domestic Revenue and Hydropower Revenue Performance	158
Figure 9.1	Trends in Internal Consumption of Timber and Exports 1996=2002	189
Figure 10.1.	Sale of Energy 2003-2004 by category	197
Figure 10.2	Comparison of Total Expenditure Outlay to Total Export Hydropower Revenues 1992/93=2004/05	199
Figure 11.1	Industries Classified by Size	209
Figure 11.2	Regional Distribution of Business Licences 2003	210
Figure A4.1	Industries Classified by Size	278
Figure A4.2	Industries and Size of Employment 1997	278
Figure A4.3	Average Growth rates 1998-2003	279

Boxes

Box 9.1.	Definitions of Timber Products	156
Box 10.1.	Domestic Power Tariff Revisions since 2000	187
Box A5.1.	The 'Dutch Disease'	282

Acronyms

AAC	Allowable annual cut
ADB	Asian Development Bank
ALD	Agricultural Lending Department
AMC	Agricultural Machinery Centre
AMS	Agricultural Marketing Section
BAFRA	Bhutan Agriculture Food Regulatory Authority
BCCI	Bhutan Chamber of Commerce and Industry
BCCL	Bhutan Carbide and Chemicals Limited
BDFC	Bhutan Development Finance Corporation
BEA	Bhutan Electricity Authority
BFAL	Bhutan Ferro Alloys Limited
BHU	Basic Health Unit
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BIT	Bhutan Income Tax
BNB	Bhutan National Bank
BOB	Bank of Bhutan
BOOT	build, operate, own and transfer
BPC	Bhutan Power Corporation
BRER	bilateral real exchange rates
BST	Bhutan Sales Tax
BTC	Bhutan Tourism Corporation
CAL	Commercial Agricultural Loans
CDM	Clean Development Mechanism
cft	cubic feet
CHPC	Chhukha Hydro Power Corporation
CIT	Corporation Income Tax
CPI	Consumer Price Index
CSE	cottage and small enterprises
CSMEs	cottage, small and medium enterprises
DBA	Department of Budgetary Affairs
DOE	Department of Energy
DOF	Department of Forestry
DOT	Department of Tourism
DSC	Druk Seed Corporation
DYT	Dzongkhag Yargay Tshogchung
EDP	Entrepreneur Development Programme
EET	electricity export tariff
FAI	forest and agriculture interface
FAO	Food and Agriculture Organization
FCB	Food Corporation of Bhutan
FDCL	Forestry Development Corporation Limited
FDI	Foreign Direct Investment
FEZAP	First Eastern Zone Agricultural Project
FMU	forestry management unit
FTA	Free Trade Agreement
FY	Financial Year
FYM	farm yard manure
FYP	Five-Year Plan
GDP	gross domestic product
GGLSS	Group Guarantee Lending and Saving Scheme

GLC	Gewog Loan Committees
GLOF	Glacial Lake Outburst Floods
GNH	gross national happiness
GNP	gross national product
GWh	Gigawatt hours
GYT	gewog yargay tshogchungs
ha	hectare
HDI	Human Development Index
ICOR	incremental capital-output ratio
ICSA	Individual Compulsory Saving Account
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IHDP	Integrated Horticultural Development Project
IMF	International Monetary Fund
IRRI	International Rice Research Institute
Kcal	kilo calories
KFAED	Kuwait Fund for Arab and Economic Development
kWh	kilowatt-hour(s)
LDCs	Least Developed Countries
LPG	liquid petroleum gas
m	metre
m ³	cubic metre
MAI	Mean Annual Increment
MDG	Millennium Development Goal
MOA	Ministry of Agriculture
MT	million tonnes
MW	Megawatt(s)
NEC	National Environmental Commission
NGO	non-governmental organization
NPB	National Pension Board
NRTI	Natural Resources Training Institute
NTFP	Non-Timber Forest Products
Nu.	Ngultrum
OECD	Organisation for Economic Cooperation and Development
OPGW	optic ground wires
OPGW	overhead fibre optic ground wires
PAAR	Poverty Assessment and Analysis Report
PCAL	Penden Cement Authority Limited
PPA	Power Purchase Agreement
PPP	purchasing power parity
PRSP	Poverty Reduction Strategy Papers
PTA	preferential trade agreement
REER	real effective exchange rate
RGOB	Royal Government of Bhutan
RICBL	Royal Insurance Corporation of Bhutan Limited
RMA	Royal Monetary Authority
RNR	Renewable Natural Resources (RNR)
RSPN	Royal Society for Protection of Nature
SAARC	South Asian Association for Regional Cooperation
SAFTA	South Asian Free Trade Agreement
SAPTA	South Asian Preferential Trade Association
SARI	South Asia Regional Initiative for Energy Cooperation and Development programme

SARS	Severe Acute Respiratory Syndrome
SBI	State Bank of India
SFTP	semi finished timber products
SIL	Small Individual Loans
SME	small and medium enterprise
SNV	Netherlands Development Organization
t	tonne
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme
UTB	Unit Trust of Bhutan
WFP	World Food Programme
WRMP	Water Resources Management Plan
WTO	World Trade Organization
YDF	Youth Development Fund

FOREWORD

Bhutan is in many ways an exceptional developing country. Its geographic location between two economic powerhouses, India and China, opens many opportunities but also imposes challenges both economically and politically. After centuries of isolation Bhutan's socio-economic development in little more than a generation has been remarkable. To a large extent this achievement can be owed to His Majesty the Fourth King of Bhutan and his unique development philosophy of Gross National Happiness (GNH). The philosophy, which is underlined by four pillars, namely equitable socio-economic development; conservation of environment; preservation of culture; and promotion of good governance, seeks to pursue the broader forms of well-being beyond material.

The Case Study of Bhutan is prepared with these special considerations in mind, making it the first comprehensive work in the area of poverty reduction in Bhutan. In addition to reviewing the macroeconomic framework, the report highlights the key features of the Bhutanese economy, acknowledging the country's high dependency on renewable natural resources in achieving the elimination of extreme poverty while needing to balance this with the goals of GNH.

The study also highlights the excellent progress that Bhutan has made in terms of human development. According to the Human Development Report 2006, Bhutan ranks 135th among 177 countries and is placed in the group of medium human development countries. Commendable progress has been made in achieving the Millennium Development Goals (MDG), especially in improving the basic health care, primary school education and water supply and sanitation. Given its sustained commitment and progress towards achieving the MDGs, Bhutan was amongst the first pilot countries to commit to the preparation of MDG based national development plans in 2006 as part of the MDG Initiative in the Asia and Pacific Region. The nationally led MDG Needs Assessment and Costing exercise that commenced in June 2006, identified and costed sectoral interventions needed to achieve the MDGs in Bhutan by 2015 to support the mainstreaming of the MDGs into the country's Tenth Five Year Plan, which is considered a critical plan period to achieve the goals by the Royal Government.

In analyzing the macroeconomic framework, the study sheds light on the various constraints faced by the Bhutanese economy. While the growing hydropower sector continues to serve as the main driving force of the economy, Bhutan's successful development has been underpinned by extensive overseas development aid. However, as the study points out, the hydropower exports, currently only to India, do not ease the hard currency constraint faced by Bhutan and hence, without significant increases in domestic resource mobilization, dependency on development aid will remain high in the immediate future.

Furthermore, as evidenced by the study, the hydropower sector does not generate employment

for the country's growing labor force and thus has limited impact on income poverty reduction. Recognizing the growing inequality in the country, any pro-poor development strategy must therefore aim to raise productivity of the poor people dependent on agriculture. Given the restricted absorptive capacity of the sector, however, the strategy must be to target sectors other than agriculture. As recommended by the study, this should be done with a focus on exploring possibilities for more efficient use of renewable natural resources. In order to create a genuine private sector in the country, an enabling environment for the rural micro and small enterprises needs to be established, facilitating access to resources and markets.

The study was conducted under the Regional Program on the "Macroeconomics of Poverty Reduction" based at the UNDP Regional Centre in Colombo. I would like to convey my appreciation to Mr. Hafiz Pasha, UNDP Regional Director, Mr. Minh Pham, Regional Manager, Mr. Omar Noman, Chief of Policy and Program, and Mr. T. Palanivel, the Program Coordinator as well as the staff of the Regional Program for their support in bringing out this important study. I would also like to take this opportunity to commend the authors for providing a concise description of the specific challenges to poverty alleviation in Bhutan, thereby providing recommendations for informed policy making. As a first of its kind on Bhutan, we hope that this publication will provide useful analysis for the Royal Government in the preparation and implementation of its Tenth Five Year Plan, which targets poverty reduction as its main goal, at a time the country has embarked on an ambitious program of decentralization and democratization, culminating in the introduction of parliamentary democracy in 2008.

Nicholas Rosellini

UN Resident Coordinator and
UNDP Resident Representative in Bhutan

EXECUTIVE SUMMARY

Chapter 1: Introduction

Bhutan is a small country located in the foothills of the Himalayas, confronted with the physical constraint of being landlocked, home to a difficult terrain as well as the demographic constraint of a small, scattered population. After centuries of isolation, the country has emerged into the modern world only in the last half -century. Over the last decade and a half, the country's socio economic development has been guided by a an indigenously developed philosophy called Gross National Happiness (GNH), advocated by King Jigme Singye Wangchuck, who turned over the throne to his son Jigme Khesar Namgyel Wangchuck in December 2006. This approach is a holistic philosophy that seeks to go beyond the pursuit of material well-being by embracing concerns for equity, environment, spiritual development, and good governance.

The majority of Bhutanese still live in rural areas and derive their livelihood from agriculture. However, the driving force of the Bhutanese economy has so far been neither agriculture nor manufacturing but rather export of hydropower to India. While the economic structure that has emerged in the process has served Bhutan well by raising national income and sustaining a welfare state, for which the country can be justly proud, the elimination of poverty remains a challenge. A reorientation of the development strategy is needed to address the problem of poverty. This can be achieved by providing the poor with expanded opportunities for rewarding work, which they do not have at present.

This report examines the Bhutanese economy, with special focus on the impact of macroeconomic policies on poverty in an effort to identify elements of a macroeconomic framework conducive to poverty reduction. The macroeconomic framework is located within a broader strategy for pro-poor development in Bhutan that is respectful of the country's commitment to GNH as the guiding philosophy of development.

The proposed development strategy contains a long-term component and a short-to medium-term component, called here the transitional strategy. Pro-poor macroeconomic policies are viewed in this report both as an essential component of the transitional strategy (the other components being sectoral policies) and as helping to lay the foundations for the long-term strategy.

Chapter 2: An Overview of the Economy

Bhutan's Gross Domestic Product (GDP) has grown at an average of 7 percent per annum in the quarter-century leading up to 2004. Using a rough estimate of population growth of around 3 percent, per-capita income would have grown at the highly respectable 4 percent per annum during this period. The driving force of the economy has been hydroelectricity and related activities, such as construction and some energy-intensive industries.

Rapid growth has not, however, transformed the Bhutanese economy into a modern industrial society in the sense of creating a strong manufacturing base. Manufacturing has, in fact, been the weakest link of the industrial sector, especially in recent years. On the whole, the stimulus to growth provided by hydroelectricity has largely bypassed the agricultural sector and only marginally benefited manufacturing. Infusing dynamism into agriculture and manufacturing remains a major challenge for Bhutan in the years ahead.

The high growth rate of the Bhutanese economy has been underpinned by exceptionally high rates of savings and investment. Over the last two and a half decades, gross investment has grown at an average rate of 10 percent per annum, compared with 7 percent growth in GDP, and has led to a high incremental capital output ratio (ICOR).

Such a high rate of capital formation, and the attendant high ICOR, is partly explained by the dominance of hydropower, which is highly capital-intensive. But it can also be explained as a consequence of a highly scattered population living in very rugged mountainous terrain. The cost of the physical infrastructure necessary to connect people in different parts of the country and to provide essential services to them is bound to be quite high.

On the surface, the macroeconomic environment of Bhutan can be described as solid in the conventional sense. Bhutan has a low budget deficit, low and stable inflation, a highly open trade regime and a current account surplus (including grants from abroad) in its external transactions. Detailed scrutiny, however, reveals a number of weaknesses as well as strengths (discussed in Chapters 4-7).

Unlike many other developing countries, Bhutan did not have to undergo a formal structural

adjustment programme, because it did not face the serious macroeconomic imbalances that warrant such a programme. Nonetheless, the country has undertaken a wide range of liberalization programmes since the early 1990s, especially in the realms of financial policy and trade and industrial policy, allowing a greater role of the market mechanism in resource allocation and encouraging a shift of economic activities from the public to the private sector.

Chapter 3: Poverty, Human Development and Employment

Compared to other Least Developed Countries, Bhutan enjoys a relatively high level of human development, thanks to the conscious effort made by the Royal Government to look after the people's basic needs. Nonetheless, in 2003 nearly one-third of its population were found to live under the poverty line.

Poverty is significantly more widespread and severe in rural Bhutan than in urban areas. As many as 38 percent of the rural people live below the poverty line, compared to only about 4 percent of those living in towns. Poverty also varies widely by region, with eastern districts notably poorer than the rest of the country.

Because of the absence of comparable household-level data, it is not possible to judge how poverty has changed over time. However, other indicators, such as those related to health and education, reveal considerable improvement in the standard of living. Thus, life expectancy at birth has risen spectacularly from 48 years in 1984 to 66 years in 1994. In just one decade, between 1990 and 2000, gross enrolment rate at the primary level has jumped from 55 percent to 72 percent.

Despite such progress, many rural families are caught in an inter-generational poverty trap. Children born to poor families cannot always avail of the educational opportunities open to them, and lack of education condemns them and their future children to a life of poverty. For these people to escape the poverty trap, it is essential to provide productive employment opportunities to adults so that they are able to educate their children, who will in turn be able to use that education to transcend poverty.

Despite serious efforts to achieve regionally equitable, distinct development in the east remains a concern. One reason for the persistent disparity relates to the fact that parts of the country still suffer from lack of connectivity, especially to the centres of administration and commerce in the west and south. It also must be said that unequal allocation of government expenditures has contributed to this disparity.

Overall unemployment is not yet a serious problem in Bhutan, although it has risen steadily from an official 1.4 percent in 1998 to 2.6 percent in 2004. Youth unemployment in urban areas is, however, assuming quite alarming proportions. Yet it must be acknowledged that, important as it is to tackle the problem of youth unemployment, finding jobs for unemployed youth will barely put a dent in the overall problem of poverty.

Indeed the key to tackling poverty in Bhutan lies not so much in creating jobs as in improving the quality of employment. In a country where the population is small (634,982) and labour is scarce, what really matters is making the work more rewarding for the labourer. It is this understanding that informs the evaluation of macroeconomic policies and the formulation of a long-term development strategy attempted in this report.

Chapter 4: Fiscal Policy

The fiscal regime of Bhutan has acquired a number of distinctive features: (a) the size of fiscal operations is exceptionally large by South Asian standards; (b) the large Government budget is sustained to a considerable degree by foreign assistance, primarily from India; and (c) despite a high level of expenditure, budget deficits have been kept within non-inflationary range.

Hydropower projects are the most important source of domestic revenue for the Royal Government. Their average share in total domestic revenues was 30 percent for 1992/93-2001/02 and it was expected to rise to 42 percent following the revision of power export tariff in January 2005. It was again expected to rise even higher after the impending commissioning of Tala, the largest hydropower project in Bhutan so far.

The fiscal stance of the Royal Government has been prudent in the sense that the budget deficit has largely been kept within control. This has been achieved by consciously adopting a two-pronged fiscal strategy that (a) tries to finance current expenditure almost entirely from domestic revenue and (b) adjusts capital expenditure in accordance with the availability of foreign resources.

The fiscal regime of Bhutan likewise exhibits a number of distinctive pro-poor features. Prominent examples include: (a) high levels of expenditure on social sectors such as health and education, which absorbs more than a quarter of total expenditure; (b) a serious attempt at fiscal decentralization, which enables locally elected bodies to spend nearly one fourth of budgetary resources at the local level in accordance with locally determined priorities; and (c) dedicated trust funds for health, culture and environment.

Over time, expenditure on social services have continued to increase, mainly because of the significant allocation to local level administrations, who have chosen to devote the largest share of resources to education, followed by health, agriculture and roads.

At the same time among the economic sectors the allocation for agriculture has fallen steeply, from around 15 percent in the early 1990s to 10 percent in the Ninth Five Year Plan period (2002/03-2006/07).

Overall, public debt has remained manageable. The debt-GDP ratio stood at 75 percent in 2003/04, very high by South Asian standards, but the redeeming feature is that much of it is rupee loan, which can be serviced comfortably by earnings from hydropower export.

It is however the convertible currency loan that requires serious monitoring. The outstanding

amount of such loans has declined from 34 percent of GDP in the late 1990s to 28 percent in recent years; during the same period the debt-servicing ratio has fallen from 34 percent of hard currency exports to 21 percent. Even so the debt burden remains well above the norm for South Asia and is likely to go up further, as donors increasingly switch from grants to loans.

Chapter 5: Monetary and Financial Policies

The overall monetary policy framework of Bhutan can be characterized as close to a currency board system. The domestic currency, ngultrum (Nu.), is pegged to the Indian rupee at a 1-to-1 exchange rate, guaranteed by at least 100 percent reserve backing of all ngultrum issued.

Impressive progress has been made in the speed of monetization of the Bhutanese economy, especially over the last decade. The rapid increase in money supply has not, however, led to rapid inflation, as a large proportion of additional money has integrated an increasing proportion of the barter economy into the cash nexus.

The inflation rates fluctuated around an average of 8 to 9 percent in the 1980s and 1990s. However, since 2000, the average inflation rate has been cut almost in half and now stands at less than 5 percent. Low inflation has been achieved not primarily through active monetary or fiscal policy, but through the exchange rate policy that keeps the ngultrum pegged to the Indian rupee. Inflation in Bhutan is thus essentially imported—tracking closely the inflation in India, which has remained relatively low by international standards.

Interest rates were liberalized in the late 1990s and have declined from an average 8.8 percent in 2000 to 5.7 percent in 2005. By contrast, the average lending rate was reduced marginally from 14.2 percent to 13.2 percent. As a result, the average interest spread, which already was high at 5.4 percent in 2000, soared to 7.5 percent by 2005.

The widening spread in the interest rate can be attributed to the non-competitive nature of the financial market in Bhutan, which is characterized by a leader follower type of duopoly. Moreover the fundamental reason why the financial sector is non-competitive in Bhutan lies in the tension between the scale economies of financial intermediation and the exceedingly small size of the market.

Domestic credit has expanded rapidly following financial liberalization, although the expansion has probably more to do with extraneous factors than liberalization as such. Most additional credit has gone to the construction and trade sectors. It is a matter of concern, however, that the surge in private-sector credit has not greatly benefited the manufacturing sector—on which the country pins much hope for spurring productivity growth—or agriculture and small enterprise, both of which have seen declining shares.

With farmers no longer able to rely on subsidies for modern inputs, the need for rural credit is considered essential for agricultural development. To meet this need, a microcredit programme was launched, administered by the Bhutan Development Finance Corporation (BDFC). The impact

of this programme on poor farmers has thus far been limited, in part because the programme is still small, and a disproportionate share of loans has gone to relatively well-off regions.

Chapter 6: Trade Policy

From being a virtually closed economy around 1960, Bhutan has completely transformed itself into a classical case of a small open economy. The trade-GDP ratio reached nearly 74 percent in the second half of the 1990s; though the ratio has declined slightly since then it is likely to go up again with the imminent commissioning of the Tala project. Despite a wide volume of exports, the trade gap has remained large, financed by generous grants mainly from India and abroad.

India is by far the most important trading partner with Bhutan, and its role has increased over the years. In the early 1990s, about 88 percent of all exports were destined for India; a decade later, that proportion has risen to 95 percent. During the same period, India's share in imports increased from 74 percent to 81 percent. Bangladesh is the second largest export market for Bhutan, with a share of about 4 percent, and Japan is the second largest source of imports, also at 4 percent.

The dominance of bilateral trade with India reflects Bhutan's limited ability to diversify its export markets. This creates a problem in its trade with third countries, as nearly 16 percent of imports are denominated in convertible currency, while less than 5 percent of exports earn convertible currency. This mismatch between the earning and spending of hard currency leads to a severe foreign exchange constraint, which continues to plague the Bhutanese economy even as trade with India flourishes.

Nearly three fourths of all export earnings are derived from activities based primarily on indigenous natural resources, such as electricity generated by hydropower, foodstuff originating from land and wood products based on forest resources and minerals.

The most important category of imports is capital goods, which over the last decade have accounted for 40 to 50 percent of all imports. However, while the aggregate import of capital goods has increased, the amount from countries other than India has declined in relative terms. This is a matter of some concern, as Indian capital goods are not close substitutes for capital goods from elsewhere.

Meanwhile a large amount of resources are tied up in the reserves instead of being used to import essential machinery and intermediate goods required for manufacturing activities. Clearly a trade-off exists between current needs and future contingencies, and authorities will have to constantly re-evaluate this trade-off, lest excessive caution unduly holds back the pace of industrial progress.

The trade regime of Bhutan has been characterized by an extremely high degree of openness, buttressed by a bilateral Free Trade Agreement with India for three decades.

The non-Indian part of Bhutan's import trade, which has varied from 20 to 30 percent of total

imports, was until recently subject to severe quantitative restrictions. However, since the early 1990s this part has also begun to be gradually liberalized, as the country moved away from such restrictions toward taxes and tariffs, allowing the market mechanism a greater role in the allocation of resources.

Trade liberalization has, however, only had the limited effect of converting quotas into tariffs but not of reducing tariffs as such. On the contrary, the rates of sales tax and customs duty on imported goods were revised upward in 2004 by an average of 30 percent.

By far the most important source of restrictions on free trade lies in the limitations imposed on the use of convertible currency. These restrictions are prompted, however, not by a conscious design to protect a set of targeted industries—chosen by some criterion such as infant industry protection or externalities. Rather, their sole objective is to ration the use of limited supply of convertible currency.

Chapter 7: Macroeconomic Policy and Poverty Reduction

This chapter analyzes the impacts of all three components of macroeconomic policy—fiscal policy, monetary/financial policy and trade policy—on poverty in Bhutan.

Two aspects of fiscal policy are particularly relevant for poverty reduction in the country, namely the overall fiscal stance and sectoral allocation of budgetary expenditure.

The overall fiscal stance of Bhutan has been characterized by a cautious approach toward budget deficits. This, together with the policy of pegging the ngultrum to the Indian rupee, has helped keep inflation down. The poor in Bhutan have benefited from this in two ways: First, since inflation acts like a regressive tax, lower inflation has benefited the poor proportionately more than the rich. Second, low inflation has the potential to create more employment opportunities for the poor by fostering a stable environment for investment.

A low deficit may, however, harm the poor, if it is achieved by pursuing an excessively contractionary policy that depresses aggregate demand and thereby restricts the growth of productive employment. However, this does not seem to have been the case in Bhutan. Deficits have primarily been kept low in part due to the help of generous budgetary support from India.

The most ostensibly pro-poor aspect of fiscal expenditure in Bhutan is the high proportion of resources allocated to health and education. During 2004/05, the education and health sectors together received 28 percent of total expenditure, which is a much higher percentage compared to that typically observed in developing countries. It is worth noting several aspects of this emphasis on social sectors.

First, in a bid to ensure that the benefits of social sector spending can spread far and wide, the Royal Government has closely tied such spending to its initiatives for administrative and fiscal decentralization. Second, expenditure on social sectors is heavily biased toward the priority

subsectors that are especially important for the poor, that is to say primary education and primary health care. Third, in order to protect essential health services from cuts in spending that may be necessitated by unforeseen shortfalls in resources; the Royal Government has recently set up a dedicated Health Trust Fund.

There are a few aspects of fiscal expenditure, however, that are not so favourable to the poor. First, the regional allocation of expenditure has generally tended to favour the more prosperous regions of the country, at the expense of the poorest ones. Second, allocation for agriculture has declined sharply over time, with potentially harmful consequences for the majority of poor people who still subsist on agriculture. Third, more than half of the additional revenue generated by recent upward revisions of power export tariffs has been absorbed by pay raises for civil servants and elected representatives, leaving little, on a per capita basis, for the benefit of the poor.

Monetary and financial policies have also had positive effects on the poor. The most favourable effects have arisen from two sources: First, the rapid pace of monetization has helped the poor to rid themselves of the inefficiencies of barter. Second, by keeping down the price of non-tradables, the slow growth of money supply has prevented significant appreciation of the real exchange rate, which in turn has prevented the structure of incentives from tilting against tradable sectors. This is beneficial for the poor since they are more likely to find opportunities for productive employment in tradable, rather than non-tradable, sectors such as construction, which is highly capital intensive.

By contrast, the impact of financial liberalization does not seem to have particularly benefited the poor. Liberalization has had two major consequences for the financial sector: Leading to a widening of the spread between lending and deposit rates, and resulting in significant changes in the allocation of credit. Both consequences have worked against the interests of the poor: The widening spread of interest rates threatens financial disintermediation, which has negative consequences for creation of productive employment opportunities for the poor. Whereas the reallocation of credit has worked against agriculture and small enterprises—precisely the sectors in which the majority of the self-employed poor are engaged.

Microfinance has the potential to somewhat redress the balance, but the programme is still new, small, and has so far favoured relatively well-off regions of the country. Moreover, the necessary conditions for a successful operation of a microfinance programme do not, as yet, appear to be in place in Bhutan.

The most important aspect of Bhutan's trade policy—that is relevant in the context of poverty reduction—is its completely open trade policy with India, by far its largest trading partner. The open trade regime has, on the one hand, created greater scope for specialization in production, while it has on the other hand, increased the availability of a wide range of consumption goods. As far as the poor are concerned, however, the most immediate benefit has come not so much from the greater scope for specialization in production as from the latter from the increased availability of consumption goods, including essential foodstuff.

The large volume of imports of rice and other essential foodstuffs from India has particularly helped the Bhutanese poor, both directly and indirectly. Directly, it has assisted them by keeping the cost of living down; indirectly, it has helped by removing the wage-good constraint, which has allowed faster growth and thus faster expansion of opportunities for productive employment.

On the other hand, increasing specialization promoted by the open trade regime has not been of considerable help to the poor because Bhutan's comparative advantage lies in natural resource-intensive activities, which do not employ much labour; moreover most of the workers they do employ come from India.

This does not, however, imply that the poor of Bhutan will gain from the opposite policy of trade restriction and inward orientation. The future of the poor clearly lies in an outward-oriented strategy, but one in which the unskilled workers of today will be able to become skilled workers, engaged in the production of low-volume, high-value products destined for the world market. In order for this future to materialize, however, a range of policy measures is recommended to create the necessary dynamic comparative advantage. (This issue is discussed further in Chapter 12.)

Chapter 8: Agriculture: Resources and Policies

Bhutan is a predominantly agrarian economy. The agricultural sector, or the Renewable Natural Resources (RNR) sector as it is called in Bhutan, consists of arable agriculture, horticulture, livestock and forestry. Together, these sectors employ 79 percent of the population and accounted for 33 percent of GDP in 2003. Agriculture's share of GDP is declining, however, especially the contribution of cereals and livestock, while the contribution of tree crops has increased, reflecting an ongoing process of specialization within agriculture.

Food crops do not have much export potential in Bhutan. However, a minimal amount of subsistence production still must be ensured, especially since transportation costs make imported food crops expensive for poor people in remote areas. The Royal Government aims to maintain domestic self-sufficiency of food (up to at least 70 percent) and to cover the costs of imports by exporting other agricultural products. The first part of the objective has nearly been met, but not the second part.

While the Royal Government has focused a great deal of effort on improving the quality of agricultural inputs, pricing and distribution policies have not been conducive to rapid adoption. Evidence suggests that reduction of input subsidies and Royal Government's partial withdrawal from seed distribution have had a negative impact on usage of agricultural input in many areas.

Livestock production has increased and research and development in breeds and fodder have brought rich dividends. However, pasture development has lagged, for a variety of reasons, including withdrawal of subsidies on fertilizer.

Commercialization of agriculture has been a major goal of agricultural policy. Yet the production

of horticultural products, both field cash crops and tree crops, has fallen between 1995 and 2003. Part of this decline may be artificial though, since production figures for 1995 appear inflated. During 2000-2003, production increased for oranges, apples and potatoes; on the other hand, most kinds of fruit trees and acreage under almost all field cash crops have declined since 1995.

The development of cash crops is constrained by land use policy and the Forest Act, which limits horticultural plantations to dry land due to environmental concern. It is also officially acknowledged that horticulture did not grow as fast as it might have because the objective of regional equity was given primacy, resulting in resources being spread thinly over a wide base. The Royal Government may have to reconsider trade offs between efficiency and environment, on the one hand, and between regional equity and efficiency, on the other.

This reconsideration is especially necessary in view of the fact that current policies are not helping to provide the right kind of incentives or opportunities for productive absorption of labour in agriculture. Indeed, labour scarcity is emerging as a major problem in Bhutanese agriculture, as rural people, especially young males, migrate in large numbers to urban areas. While the absence of educational opportunities is considered the major reason for migration, a significant proportion of people migrate because they no longer find agriculture a rewarding enough occupation.

Chapter 9: Forest Resources: Prospects and Constraints

Bhutan has a constitutionally mandated policy of keeping at least 60 per cent of land under forest cover. Present coverage is estimated to be at about 72 per cent, which is a great asset for the people of Bhutan. Free access to forest products, especially for the rural people, effectively helps to avert situations of extreme poverty, destitution and homelessness. Timber and wood-based products derived from the forests are an important source of export earnings. Forests are also vital for maintaining water catchment areas to support agriculture (the main source of livelihood for the people) and the hydropower sector (which is the largest source of revenue and growth).

Present estimates show that the production potential to supply logs for subsistence rural use is sustainable. In fact, rural supply of logs shows an excess capacity of more than 60 per cent of projected demand. Although rural people have access to subsidized timber, there are several constraints that limit their full utilization. One of the major constraints is the cumbersome procedure for obtaining timber, which on average takes about two months.

Use of timber for commercial purposes is also underutilized from both stocks as well as harvests perspective. The annual cut is only 50 per cent of the allowable annual cut (AAC) consistent with sustainability. Moreover, an additional 6 per cent of the total land area is available for timber production, which if utilized, would further enhance the annual allowable cut. Hence, immense potential exists to increase commercial timber production without adversely affecting the environment or compromising the stringent conservation policies.

A major reason for underutilization of timber is that the Royal Government has banned the export of raw timber as well as of semi-finished timber products in order to promote finished wood

products with a greater degree of value added. While the desire to move toward higher value-added products is understandable, it also must be recognized that because these industries remain small and negligible, Bhutan loses valuable foreign exchange by prohibiting the export of timber and semi-finished timber products. What matters for economic efficiency is that encouragement be given to produce products with comparative advantage. But products with higher value added do not necessarily have comparative advantage over those with lower value-added. If the market reveals that Bhutan has a comparative advantage in raw timber and semi-finished timber products rather than finished products, then the efficiency loss from current policy restrictions must be justified on other grounds.

One such ground is the environment. It is possible that the Royal Government does not want to encourage large-scale exports of raw timber and semi-finished timber products for environmental reasons—even if they were found to have comparative advantage. From a long-term perspective, the precautionary stance taken by the Royal Government is laudable since pressures arising from population growth and commercialization could lead to a rapid depletion of forests and overall environmental degradation. However, as noted above, vast potential exists still for increasing timber extraction without compromising the concern for sustainability.

Apart from timber products, Bhutan also has a range of non-timber products such as lemongrass oil, matsutake mushrooms and Cordyceps sinensis, a well known and valued traditional medicine. These products can be developed into the kind of low-volume, high-value exports that Bhutan aspires towards.

For the sake of both meeting subsistence needs and earning badly needed foreign currency, it is imperative to move from passive conservation to more active and sustainable use of forest resources. Bhutan must transform its natural comparative advantage in forest resources into a competitive advantage in order to boost growth, generate employment and diversify exports.

Chapter 10: Water Resources and Hydropower

Bhutan's mountainous topography and fast-flowing rivers have endowed the country with an estimated hydropower potential of 23,500 megawatts (MW) with a mean annual energy production capability of 99,200 gigawatt hours (GWh).

The first major hydropower project, the 336 MW Chhukha plant, was fully commissioned in 1988, followed by the 60 MW Kurichhu project in eastern Bhutan. The third major hydropower project, Basochhu, was developed in two phases and was fully commissioned in 2005 with an installed capacity of 62 MW. Construction of the largest hydropower project to date, Tala, with an installed capacity of 1020 MW, was started in 1993 and resulted in its commissioning in July 2006.

Before Tala, only 467.35 MW or 1.98 percent of the country's estimated identified hydropower potential was developed. The commissioning of Tala will more than treble the country's current installed capacity and increase annual generation by about 1,500 GWh.

Most of the major projects have been developed with Indian assistance, based on a 60 percent grant 40 percent loan financing model. Apart from the Government of India, Austria, Japan and the Netherlands have also been involved in the development of Bhutan's hydropower potential. The Basochhu project, the biggest undertaken with third-country assistance (Austria), was commissioned in 2005.

Since the commissioning of the Chhukha project in the 1980s, hydropower has emerged as the driving force of the economy. It looms large in almost every aspect of the economy—as a major contributor to GDP, as the single largest source of Government revenue and as, by far, the most important item of export. More over the contribution of hydropower to the economy of Bhutan has increased over time, not just because of the commissioning of new projects, but also because of periodic revision of export tariffs, which have more than doubled in real terms since 1988.

Hydropower has made it further possible to establish a number of power-intensive industries, helped by generous subsidies on electricity tariffs. It has helped sustain a large programme of heavily subsidized rural electrification—whose beneficial impact on the rural poor has been substantial. The only shortcoming of hydropower, from the perspective of poverty reduction, is that it is very capital-intensive (as is the case with power-intensive industries), and as such does not directly create many employment opportunities for the poor.

Because the revenue received from electricity exports are much larger than annual repayments of loans incurred for hydropower projects, the impact of hydropower on total debt is, under the present circumstances, mostly statistical; as it does not add any net burden to the existing loan repayment obligations. Moreover, there is an added advantage, because 71 percent of the total loans are denominated in Indian rupees, to which, as we have already observed, the ngultrum is pegged, it thus reduces considerably any exchange rate and liquidity risks since export revenues are also in Indian rupees.

Clearly Bhutan has a comparative advantage in hydropower, given that its costs of production are substantially lower than the current market price in India. Bhutan also has the advantage of possessing an institutional framework that enables export-oriented hydropower projects to be implemented more easily than in India, where hydropower development is hampered by interstate water disputes and rehabilitation controversies. The same is true to a lesser extent for Nepal as well, where opposition by non-governmental organizations (NGOs) to large hydropower projects has been a serious issue.

Although India is currently the only market for Bhutanese hydropower, the risk of reduced demand from India is very small. Northern India faces chronic power shortages, and the estimated shortage of roughly 10,000 MW is projected to rise to 20,800 MW by 2010. Bhutan now supplies less than 0.5 percent of India's demand, which can presumably absorb all the hydropower that Bhutan might develop over the next twenty years.

A potential danger arising from rapid expansion of hydropower—much discussed of late in Bhutan—is the possibility of the so called 'Dutch disease', the phenomenon in which the exploitation of natural bounty may render the rest of the economy uncompetitive. This discussion has not yet

reached any conclusions, but most analyses show the risk to be small.

In view of the vast unexploited potential for the production of hydropower in Bhutan and an equally vast potential market in India, Bhutan should strengthen efforts to make even more use of its water resources. Yet constraints exist here too, not least of which is the potential environmental hazard of a glacial lake outburst flood, lurking in the Himalaya as a consequence of global warming. Yet Bhutan needs its hydropower, not just for short-term gains but also for providing the resources with which the country can build a future based on human skill and technology, in which dependence on natural resources, including water resources, would be greatly diminished.

Chapter 11: The Industrial Sector: Prospects and Constraints

This chapter examines the prospects and constraints of the manufacturing sector and the tourism industry of Bhutan. The manufacturing sector includes three major groups: power-based, forest-based and agro-based industries. All three are highly capital-intensive and generate very little employment. However, the proportion of the labour force engaged in industry (including hydropower) has increased in recent years in Bhutan from 6 percent in 1998 to 10 percent in 2004.

As in most developing countries, the public sector was dominant in the early days of industrialization. Since the late 1980s, however, control has gradually been transferred to the private sector. Sometimes this has taken the form of outright privatization, but in many instances it has led to corporatization of public enterprises, retaining some share of government ownership but granting a greater degree of management autonomy. Very recently, attempts have been made to attract foreign private investment as well.

While the majority of enterprises are in the private sector, these are mostly small and cottage enterprises, accounting for only a minute proportion of output. The public sector, defined broadly to include the corporations, still dominates the industrial scene in terms of output and value added. Most large-scale private firms are those that have been privatized previously. Independent growth of large-scale private enterprise is still a rarity.

The manufacturing sector is dominated by power-intensive industries that engage in processing raw minerals. These industries enjoy access to domestic mineral sources and cheap and reliable electricity. The main minerals found in Bhutan are coal, gypsum, limestone and dolomite. Gypsum, dolomite and limestone are used as input for the large mineral-based industries such as cement, ferro silicon, calcium carbide and plaster of Paris. Most of these industries were established in anticipation of, or after the commissioning of, the Chukha hydropower project in 1988.

Wood-based industries form the single largest group of manufacturing industries, comprising 46 percent of total enterprises. These firms are all privately owned. Their comparative advantage lies in the availability of cheap timber at prices ranging from US\$65 per cubic metre (m³) to US\$102 per m³ compared to international prices ranging from US\$126 per m³ to US\$238 per m³.

Agro-based industries constitute an increasingly important component of Bhutan's industrial scene. A total of 126 licensed agro-processing industries exist, of which by far the two largest are Bhutan Fruit Products Limited and Bhutan Agro Industries Limited.

All such industries are export-oriented to varying degrees, with India being the largest market, although a substantial number of agro-products are exported to Bangladesh as well. A Free Trade Agreement with India and preferential trade agreement with Bangladesh have greatly facilitated the growth of manufacturing industries. Their main advantage, however, lies in their access to domestic raw materials, derived from plentiful natural resources and bolstered by access to generously subsidized electricity.

Manufacturing industries face a range of constraints too. Apart from the usual shortages of skills, technology and capital that afflict the industry of most developing countries, Bhutan faces some additional constraints. The most serious is the combination of a small domestic market and landlockedness; this combination implies that the industries of Bhutan cannot aspire to either inward orientation or outward orientation (beyond India) on a large scale. Two other problems currently restricting growth are environmental restrictions on the supply of natural resources (timber, for instance) and a shortage of convertible currency that limits the inflow of necessary capital goods and technology. Indeed a lack of convertible currency would appear the most limiting constraint to industrial development in Bhutan at present.

In this context, the tourism industry assumes special significance, because it is currently the biggest earner of convertible currency in Bhutan. This industry has been fully privatized in order to bolster competition and upgrade the quality of service.

The biggest constraint facing the tourism industry is the administered pricing system that requires the tour operators to charge a minimum daily rate, which is quite high and a substantial part of which goes to Government coffers. This pricing policy is intended to serve the 'high-value, low-volume' tourism policy adopted by the Royal Government, but it limits incentives for tour operators to compete and upgrade their services. The need to use integrated packages also confines spillover effects of the industry to a few hotels and restaurants and has little impact on the local or rural economy, even if tourists visit villages and trek in remote areas.

In view of Bhutan's pressing need to ease the hard currency constraint, the restrictive policy toward tourism needs to be reviewed urgently. As in most other cases (such as the timber and wood-based industry) where the Royal Government has adopted a restrictive policy, a principal reason behind these structures is a concern for the environment. But as this report argues (see Chapter 12), in order to move toward a future in which the economy's demands on the environment would be minimized, Bhutan must invest in skilled technology that would require a much greater access to hard currency. This hard currency will have to be earned through a more vigorous approach toward tourism as well as greater export of natural resource-based products. This implies an inter-temporal trade-off. In order to have an environment-friendly future it may be necessary to make some compromises with environmental concerns at present.

Chapter 12: Toward a Pro-Poor Development Strategy for Bhutan

A pro-poor development strategy for Bhutan that is respectful of the GNH philosophy and cognizant of constraints emanating from demography and geography needs to be conceived in two stages: long-term and transitional. The long-term strategy is about the kind of economy Bhutan would ideally like to have in future. The transitional strategy is about how to get as close to the long-term strategy as possible and as soon as possible.

The essentials of the long-term strategy may be summarized as follows: An outward-oriented development strategy that relies on exporting low-volume, high-value goods and services based on skilled manpower and modern technology, in return for imports of most consumer goods, except for some basic foodstuffs.

The virtue of this strategy is that it is perhaps the only pro-poor strategy that is fully respectful of the demands of the GNH philosophy on the one hand, and consistent with Bhutan's demographic and geographical constraints, on the other. The pro-poor nature of this strategy consists in the fact that it attacks directly the problem of low productivity of labour, which lies at the root of poverty in Bhutan. Specialization in high-value products using skilled manpower and modern technology is bound to raise the productivity of labour, helping the poor to escape poverty. The consistency of the strategy with the GNH approach depends partly on its pro-poor nature and partly on the fact that respect for the environment will be maintained by minimizing the economy's dependence on natural resources. At the same time, the focus on low-volume products that use skilled manpower rather than plenty of unskilled labour renders the strategy consistent with Bhutan's physical and demographic constraints.

Since the long-term strategy would depend upon large-scale acquisition of skills and technology, which could take a considerable amount of time, a need for a transitional strategy exists. Formulation of the transitional strategy will have to be guided by two considerations: First, it must support speedy transition to the long-term strategy, and second it must provide the Bhutanese poor with a means of improving their living standards in the short to medium term.

The analysis of macroeconomic and sectoral policies carried out in this report are motivated by these twin requirements of the transitional strategy. One conclusion that has been reached repeatedly is that the transitional strategy will have to be natural resource-based, thus calling for an enhanced use of natural resources. It is only through this strategy that Bhutan will be able to hasten the transition to the long-term strategy by earning the hard currency necessary for the acquisition of skills and technology as well as to provide sufficient opportunities to the poor for improving their living standards during the transitional period.

Admittedly, parts of this resource-based transitional strategy will come into conflict with environmental concerns. However, some compromise with these concerns will be necessary in order to arrive speedily at a future in which the environment-friendly long-term strategy can be pursued and to reduce poverty speedily in the meantime.

These considerations call for the recognition that there exist inescapable trade-offs within the GNH approach. There is an inter-temporal trade-off between cleaner environment today and a cleaner environment in the future, just as there is a contemporaneous trade-off between concern for the environment and concern for the poor today.

It is for the Bhutanese people to decide exactly where to strike the balance between competing concerns. The much anticipated transforming of the Bhutanese polity into a parliamentary democracy in 2008 gives an opportunity to the people of Bhutan to resolve the trade-offs in a democratic and participatory manner.

CHAPTER 1

INTRODUCTION

Bhutan is a small landlocked country situated in the foothills of the Himalayas. Bhutan's rigorous mountainous terrain, its lack of easy access to seaports and its small population all contribute to making the economic life difficult for the Bhutanese people. Yet, although still unnoticed by most of the outside world, the country has quietly made great strides in both the economic and social spheres. The economy has grown at an average rate of close to 7 percent per annum over the last two decades, giving rise to a more than two-and-a-half fold increase of the material standard of living within a single generation. At the same time, a benevolent welfare-oriented state has tried to ensure that each one of its citizens is guaranteed minimum basic needs such as access to land, housing, health and education. As a result of these efforts, mortality has dropped sharply, life expectancy has soared and the goal of universal access to basic education is well within sight. Significantly, Bhutan has achieved all this without the kind of environmental degradation and cultural atrophy that has bedevilled the development efforts of many other countries.

Despite all these achievements, Bhutan still remains a poor country, and by the latest estimates, nearly one-third of its population still lives below the poverty line. Evidently, the current development strategy that has served Bhutan so well in spurring a rapid rate of growth and achieving significant human development has not yet succeeded in providing adequate opportunities for productive employment for a large number of people. This raises the question of what kind of reorientation may be needed to successfully address poverty without jeopardizing the all-round social gain the country has made so far. This report seeks an answer to that question.

The Royal Government of Bhutan (RGOB) is itself seized with this question. In a document called Vision 2020, it has set out the goals it seeks to achieve by the year 2020 as well as a broad outline of policies it wants to pursue for achieving those goals (RGOB 1999). The current Ninth Five Year Plan was explicitly based on this vision, and subsequent plans are designed to operationalize the vision even further. This report hopes to contribute to the debate and to discussions that already have begun on the future direction of the Bhutanese economy and society.

The majority of Bhutanese still live in rural areas and derive their livelihood from agriculture. But the driving force of the economy is neither agriculture nor manufacturing but export of hydropower. Bhutan is blessed with an enormous potential of clean and cheap energy in the form of hydroelectricity. Only a fraction of the potential has been utilized so far, but even this has been enough to spur a rapid growth in national income and to provide the funds for investment in the social spheres, in particular, health and education. In this sense, the entire material basis of Bhutan's overall achievements to date owes itself largely to the bounties of hydropower.

Bhutan's giant neighbour, India, has played an important role in this regard. India has financed the larger hydropower projects and supplied the technology and labour for setting up these projects, it also provides an assured market for the electricity generated by them. Both the financing of projects and the proceeds of electricity sales take the form of Indian rupees, which is not convertible into hard currency. For this reason, as well as for reasons of geographical proximity, Bhutan's imports come mostly from India. Likewise India provides budgetary support to the Royal Government for carrying out essential public expenditures for which internal revenue is nowhere near adequate. The Bhutanese economy has thus become tied to India in multiple ways.

While the economic structure that has emerged has so far served Bhutan well—by raising national income and sustaining the welfare state—the elimination of poverty, however, remains an enormous challenge. Clearly, some kind of a reorientation is needed in the development strategy to address this problem. The poor require more opportunities for rewarding work, which they do not have at present. However, unlike in the case of the other South Asian countries, the solution does not lie in adopting a labour-intensive development strategy, indeed, the small population of Bhutan and the resulting scarcity, rather than surplus of labour preclude it. What the poor in Bhutan need is to find more rewarding work, that is to say, to raise the productivity of labour. This is not merely a matter of making targeted interventions designed to improve the skills of poor people. The entire macroeconomic policy framework requires a new design to encourage sustained expansion of highly productive activities.

Given the limited size of Bhutan's internal market, most of these activities will of course have to be export-oriented. However, this is rendered difficult by the problem of landlockedness. The presence of India as an enormously large market mitigates the problem somewhat, but it does not solve it entirely. One of the central arguments of this report is that shortages of hard currency are the binding constraint facing the Bhutanese economy. Due to the inconvertibility of the Indian rupee, exports to India will not meet Bhutan's need for hard currency. Bhutan must, therefore, try to diversify its export market and seek to specialize in products that can be sold with profit in the diversified market. This is one of the prime considerations that must guide the choice of a pro-poor development strategy in Bhutan.

Two other considerations are important in the context of choosing a pro-poor development strategy for Bhutan. The first relates to an overarching philosophy that has underpinned Bhutan's development efforts in the past and will continue to do so in the future. The Fourth King of Bhutan, Jigme Singye Wangchuck, enunciated this philosophy in the early 1980s under the rubric of the Gross National Happiness (GNH) approach to development. By deliberately juxtaposing itself against the traditional obsession with the Gross National Product (GNP), this philosophy explicitly shuns purely materialistic approaches to development. While material prosperity does have a place in this approach, the main thrust is to ensure that many non-material values that a society might cherish should not be trampled over in the blind pursuit of material prosperity. In short, it calls for a holistic approach to development, embracing material, environmental, cultural and spiritual goals.

The GNH approach is defined by four pillars. (i) equitable development, ensuring equity between individuals as well as regions, (ii) environmental sustainability; (iii) cultural and spiritual upliftment; and (iv) good governance. Any development strategy for Bhutan must be respectful of these four pillars of GNH.

The other consideration for choosing a pro-poor development strategy emerges from a profound political change the country is poised to experience in the near future. Bhutan is currently ruled under a monarchical system. All power rests in the monarch and the Fourth King who ruled for thirty-five years until November 2006. He actively helped guide the country's economic and social policies. Much of what is good about Bhutan today is attributed to the wisdom and benevolence of the Fourth King. However, the Fourth King himself has decided to keep the monarchy away from the centre stage in future. Monarchy will remain, but as a constitutional monarchy, and from 2008 the centre stage will instead belong to elected politicians operating under a system of multi-party parliamentary democracy. The Fourth King has himself also commanded the drafting of the first constitution, which lays out the rules of the game by which the new political system will have to abide. One of the objectives of this constitution is to ensure that the distinctive approach to development that the Fourth King pioneered survives and thrives. Concerns are nevertheless being expressed in many quarters whether the single-minded commitment to the GNH approach will survive the transition into the new political dispensation. While a system of multi-party parliamentary democracy has its own logic and compulsions, for any development strategy to succeed in the future the logic of the strategy must be consistent with the political economy of the emerging era. Only the future can tell whether the concerns expressed are valid or not.

It is against this backdrop that a strategy for growth and poverty reduction in Bhutan will have to be framed. The pro-poor development strategy proposed in this report can be summarized briefly as a two-stage strategy: a long-term strategy and a transitional strategy. The long-term strategy would work towards a future in which Bhutan specializes in exporting high-value, low-volume products based on skilled manpower and modern technology and imports most of its consumer goods, with the exception of some basic foodstuff. The report argues that this is the best pro-poor strategy for Bhutan and also one that is most consistent with Bhutan's objective constraints and its commitment to the GNH approach. However, the full implementation of this strategy is contingent upon building the skill and technological base of the country, which is a time-consuming process. This is why a transitional strategy becomes important. The objective

of the transitional strategy is two-fold: (a) to prepare the country for the long-term strategy by providing the hard currency that is needed to build up the necessary skill and technological base, and (b) providing the poor with opportunities for more productive employment during the interim period.

The transitional strategy can itself be seen in two parts: (i) macroeconomic policy consisting of standard tools such as fiscal policy, monetary/financial policy, and trade policy, and (ii) sectoral policy. The bulk of this report is devoted to an examination of how macroeconomic and sectoral policy can be best put to the service of the two objectives of the transitional strategy mentioned above. The report argues that both these objectives will be best fulfilled by slightly modifying the natural resource based development strategy that Bhutan has been pursuing so far. The modification involves shifting the emphasis from hydropower to other natural resource based activities such as forestry products, niche agricultural products and tourism.

The pursuit of this transitional strategy will involve some hard choices. The exploitation of natural resources might come into conflict with the GNH concerns with environmental sustainability, cultural values and good governance. In essence, policymakers will be faced with trade-offs within the GNH framework—an inter-temporal trade-off between GNH today and GNH in the future and a contemporaneous trade-off between the equity component and the other components of GNH today. The ushering in of a new era of multi-party democracy will make it politically harder to resolve these trade-offs in the best interests of the Bhutanese people, but at the same time it will also give the people an opportunity to have a say in the manner in which the trade-offs are resolved.

The rest of the report is devoted to developing these arguments. Chapter 2 lays out the background by providing an overview of the Bhutanese economy as it has evolved over the last couple of decades. The issues covered include growth, structural change and the macroeconomic scenario. Chapter 3 looks at the situation of poverty and human development, regional balance and the employment scenario. Chapters 4-6 deal with three major aspects of the macroeconomic regime and the relevant policies, namely fiscal policy, monetary and financial policy and trade policy. Chapter 7 draws upon the analysis of the preceding chapters to examine the relationship between macroeconomic policy and poverty reduction in Bhutan. The report then turns to the sectoral issues—dealing with agriculture in Chapter 8, forest resources in Chapter 9, water resources in Chapter 10 and industry in Chapter 11. Chapter 12 brings the whole discussion together by elaborating on a pro-poor development strategy for Bhutan in the light of the country's prospects and constraints and its philosophy of development discussed in the preceding chapters.¹

¹ There are also five annexes dealing with a number of specific issues that are useful for informing a strategy of poverty reduction in Bhutan but could not be dealt with fully in the text so were put elsewhere so as not to clutter the main arguments. These annexes are on decentralization, fiscal subsidies, microfinance, cottage and small enterprise sector, and hydropower and the 'Dutch disease'.

CHAPTER 2

OVERVIEW OF THE ECONOMY

2.1 Growth and Structural Change

The economy of Bhutan has grown strongly in recent decades. Starting in 1980—the year systematic and consistent national accounts data became available—GDP has grown at an average rate of 7 percent per annum in the quarter century leading up to 2004. No other country in the South Asian region, and not many in the developing world, has achieved such a high rate of growth over such an extended period of time. Indeed, in terms of at least the rate of growth, Bhutan almost belongs in the same league as the high performing Southeast Asian economies. Although a more detailed analysis shows that unlike the Southeast Asian countries, Bhutan has not been able to translate its high rate of growth into fundamental structural change of the economy capable of ushering in an era of modern industrialization. Its growth has been underpinned mainly by export of hydropower to India and activities related to hydropower, but the resulting growth has yet to lay the foundations of a modern industrial economy.

Nonetheless, sustained high growth has led to a substantial improvement in the living standards of the Bhutanese people. In the absence of reliable data on population growth, it is difficult to be sure about the magnitude of improvement in terms of per capita income. However, using a rough estimate of population growth of around 3 percent (based on fragmentary evidence), per capita income increased at the highly respectable rate of around 4 percent per annum for the

past quarter century. This implies that the current generation of the Bhutanese people is on the average more than two-and-a-half times richer than the immediately preceding generation. To achieve so much in just one generation is highly commendable by any standard.

Growth has, however, been far from steady. The rate of growth of GDP has fluctuated throughout the period, sometimes quite markedly, as can be seen from Figure 2.1. These fluctuations have mostly to do with the discrete and lumpy nature of large hydropower projects, which tend to drive the economy. The period immediately preceding the commissioning of such projects is often characterized by a high level of construction and related activities, while the ensuing period experiences a boom from the earnings of the project. By contrast, the intervening period between large projects can exhibit a lull or slowdown in growth. The first major spike in growth occurred in the mid-1980s with the commissioning of the Chhukha hydropower project and another major spike is imminent with the expected commissioning of the Tala project in 2006.

Figure 2.1: GDP Growth Rate per Annum: 1981-2004



The growth in GDP slowed down considerably after the hectic activities surrounding the Chhukha project died down in the early 1990s, although since then the growth rate has followed an accelerating trend. In the first half of the 1990s, growth slowed to just 3.9 percent per annum, but rose sharply to 6.6 percent per annum in the second half of the decade and further to 7.8 percent per annum in the first four years of the current century (Table 2.1). With the commissioning of the Tala project in 2006, further acceleration is expected in the coming years.

Table 2.1 Average Annual Growth Rates: 1980-2004

(Periodic annual average: figures in percentage)

Period	Agriculture	Industry	Services	All
1980–1985	5.5	18.0	4.6	6.8
1985–1990	5.6	23.1	8.5	10.2
1990–1995	0.4	7.2	4.6	3.9
1995–2000	2.9	7.6	9.6	6.6
2000–2004	3.2	12.3	5.9	7.8
1980–2004	3.6	13.5	6.5	7.0

Source: Estimated from NSB (2004) and RMA (2005).

Sectoral breakdown of growth rates and sources of growth clearly demonstrate that the driving force of the Bhutanese economy has been industry, broadly defined to include both energy and construction sectors in addition to manufacturing. In the quarter century before 2004, industry was the fastest growing sector with an annual average growth rate of over 13.5 percent. Services came a distant second, with a growth rate of about 6.5 percent (half that of industry), while agriculture was a long way behind with a growth rate of just 3.6 percent (Table 2.1). Agriculture did particularly poorly in the early 1990s, and while it has since recovered somewhat, it still remains the weakest sector of the Bhutanese economy.

The direct contributions made by different sectors to the growth of the economy can be seen in Table 2.2. Over the period 1980-2004, industry's contribution amounted to over half of the growth in GDP, whereas services contributed slightly less than a third and agriculture a paltry 17 percent. In recent years, the relative importance of industry has increased while agriculture has fallen, as evidenced by the fact that industry contributed nearly two thirds of incremental GDP during the period 2000-2004 while agriculture contributed just over one tenth.

Table 2.2 Sectoral Contribution to GDP Growth at Constant Prices
(Periodic annual average: figures in percentage)

Period	Agriculture	Industry	Services	All
1980–1985	41.9	37.1	21.1	100
1985–1990	25.4	49.9	24.7	100
1990–1995	4.1	62.5	33.4	100
1995–2000	13.7	42.0	44.3	100
2000–2004	11.1	64.7	24.2	100
1980–2004	16.9	52.9	30.2	100

Source: Estimated from NSB (2004) and RMA (2005).

These differential patterns of growth have resulted in significant structural shifts in the economy (Table 2.3). In 1980, agriculture accounted for over half the total GDP; but by 2004 its share came down to barely a quarter. By contrast, the situation of industry has been almost a mirror image of that of agriculture. Its share of GDP has shot up from only 14 percent in 1980 to as high as 45 percent in 2004. The service sector in the meanwhile has just about held its own with a share of around 30 percent of GDP throughout the period.

Table 2.3 Sectoral Share of Output at Constant Prices
(Percentage)

Year	Agriculture	Industry	Services	All
1980	52.3	14.3	33.4	100.0
1985	49.4	20.6	30.0	100.0

1990	40.3	31.6	28.1	100.0
1995	34.1	36.9	29.0	100.0
2000	28.5	38.3	33.2	100.0
2004	24.0	45.1	30.9	100.0

Source: Estimated from NSB (2004) and RMA (2005).

These structural changes have not, however, transformed the Bhutanese economy into a modern industrial society in the sense of creating a strong manufacturing base. By decomposing the broad sectors into their constituent parts, one can observe that manufacturing has, in fact, been the weakest link of the industrial sector, especially in recent years (Table 2.4). Over the longer period between 1980-2004, energy was the dominant subsector, far outstripping the growth of manufacturing, while in recent years construction has taken over the leading role. In fact, over the decade 1995-2004, construction has been the most dynamic sector of the Bhutanese economy, growing at nearly 20 percent per annum, compared to just 5 percent for manufacturing. During this decade, as much as a quarter of GDP growth has come from the construction sector, much of it being energy-related. Another 16 percent has come directly from the energy sector, while only 10 percent of GDP growth has come from manufacturing (Table 2.5).

Table 2.4 Growth Rates of Major Subsectors
(Periodic annual average: figures in percentage)

Period	Crop	Livestock	Forestry	Manufacture	Energy	Construction
1980-1985	6.7	6.0	3.1	28.4	19.8	15.4
1985-1990	4.6	5.6	7.4	22.5	356.3	-7.5
1990-1995	1.9	-0.5	-0.8	7.6	4.0	13.3
1995-2000	3.0	3.6	2.0	4.8	0.8	20.8
2000-2004	2.7	4.1	3.3	5.9	7.0	19.2
1995-2004	2.8	3.8	2.6	5.3	3.6	20.1
1980-2004	3.8	3.7	3.0	14.2	80.5	11.9

Source: Estimated from NSB (2004) and RMA (2005).

During the decade 1995-2004, the energy sector's direct output also grew relatively slowly (at less than 4 percent per annum). It should be noted that a large amount of the construction activity that has occurred in recent years is related to the Tala hydropower project, while another portion is due to an unprecedented housing boom. Moreover, a large part of the manufacturing activities are also dependent on hydropower as they specialize in power-intensive products such as cement, calcium carbide and ferro alloys. Thus, one way or the other, it is the energy sector that has provided the major stimulus to growth to the Bhutanese economy.¹

However, this stimulus has largely bypassed the agricultural sector and has only marginally

¹ The importance and future prospects of hydropower in particular, and water resources in general, are discussed more fully in Chapter 6.

benefited manufacturing. The situation with agriculture is particularly precarious as it currently contributes to only one fourth of the GDP while absorbing as much as 63 percent of the labour force. On the other hand, the reason why many rural people are stuck in agriculture, despite its lack of dynamism, is because manufacturing does not provide an alternative source of employment for most of them. The classical pattern of development whereby productivity growth in agriculture allows labour to be released from land so that they can be absorbed into an expanding manufacturing sector has so far eluded Bhutan. Infusing dynamism into agriculture and manufacturing remains a major challenge for Bhutan in the years ahead.²

2.2 Savings and Investment

The high growth rate of the Bhutanese economy has been underpinned by exceptionally high rates of savings and investment. Over a period of nearly two and a half decades (1981-2003), gross investment (gross domestic capital formation) has grown at the average rate of 10 percent per annum, while GDP has grown at an average rate of about 7 percent per annum. Capital stock has thus grown faster than the rate of output. Moreover, the gap between capital growth and output growth has widened over time. Thus, compared to the 1980s, the rate of capital growth increased nearly four-fold in the post-1990 period, rising from an annual average growth of 4 percent in the 1980s to an average of 15 percent in the post-1990 period (Table 2.6). By contrast, the average GDP growth has remained fairly steady at around 7 percent per annum.

Table 2.6 Compound Growth Rates of Savings and Investment
(Periodic annual average: figures in percentage)

	1981–1990	1991–2003	1981–2003
Gross domestic capital formation	4.2	15.0	10.3
Net capital inflow	-11.6	25.8	9.8
Gross domestic saving	62.7	24.2	40.7
Government saving	37.8	14.5	24.5
Private saving	69.8	40.8	53.2

Note: Figures before and after 1990 are not strictly comparable.

Source: Estimated from NSB (2000, 2004).

These figures suggest that the incremental capital-output ratio (ICOR) is rising fast in Bhutan, that is to say, more and more capital is being used to produce the same output at the margin. Normally, rising ICOR would be a matter of concern, as it indicates falling productivity of capital. However, in the case of Bhutan, changes in ICOR as normally measured should be interpreted with caution. Much of the recent rise in ICOR is explained by the fact that a great deal of physical infrastructure is being created in connection with the massive Tala hydropower project, but the output of the project has yet to materialize. Once the project is commissioned and output begins to flow, ICOR will drop immediately and remain low until another massive hydropower

² The problems and prospects of agriculture and manufacturing in Bhutan are analysed at length in Chapters 8 and 11 respectively.

Table 2.5 Contribution of Major Sectors to GDP Growth
(Periodic annual average: figures in percentage)

Period	Crop	Livestock	Forestry	Manufacture	Energy	Construction	Trade	Transport	Others	All
1980–1985	21.58	14.31	5.98	10.42	0.80	22.32	3.58	7.97	13.03	100
1985–1990	9.01	8.17	8.24	12.57	44.14	-7.46	0.98	9.27	15.09	100
1990–1995	7.83	-1.59	-2.17	15.97	16.82	23.29	10.20	15.92	13.72	100
1995–2000	6.42	5.18	2.15	6.40	1.53	33.66	12.80	13.03	18.84	100
2000–2004	4.07	4.43	2.68	6.49	11.17	45.11	11.68	6.54	7.83	100
1980–2004	7.8	5.7	3.5	9.2	15.3	26.4	8.8	10.0	13.3	100.0

Source: Estimated from NSB (2004) and RMA (2005).

project is undertaken. Since in the context of these massive projects, capital formation occurs over several years preceding the flow of output, the appropriate concept of ICOR is the lagged one, which relates current capital growth with future output growth. As normally measured, by relating contemporaneous increases in capital and output, ICOR would necessarily rise in the build-up period of a major project and fall afterwards especially given the huge size of these projects relative to the overall size of the Bhutanese economy. Not much can be inferred about the productivity of capital from such rise and fall of the contemporaneous ICOR in Bhutan.

What is known, however, is that the rate of capital formation, and the ICOR, are exceptionally high in Bhutan compared to other countries at similar levels of income. Already in the early 1980s, gross domestic capital formation accounted for over 40 percent of GDP. After a slight dip in the second half of the decade, the rate went up again to close to 45 percent of GDP in the 1990s, and in the last few years, this proportion has risen to nearly two thirds (Table 2.7). While such a high rate of capital formation is partly explained by the hydropower projects, as noted above, it is also a consequence of Bhutan’s sparsely populated rugged mountainous terrain. The cost of physical infrastructure necessary to connect people in different parts of the country and to provide essential services to them is bound to be high under these conditions. Yet, despite the inevitable high cost, the Bhutanese government makes a serious effort to develop the necessary infrastructure—in keeping with its commitment to regionally balanced and equitable development—as one of the pillars of the GNH approach to development. High rates of capital formation and a high ICOR are thus expected to remain persistent features of the Bhutanese economy in the years ahead.

Table 2.7 Rates of Savings and Investment: 1981-2003
(Periodic annual average; as percentage of GDP)

	1981–1985	1986–1990	1991–1995	1996–2000	2001–2003
Gross domestic investment	41.7	33.3	44.8	43.7	63.7
Net capital inflow	46.8	18.8	17.1	23.3	24.9
Gross domestic saving	-5.2	14.5	29.0	22.2	40.8
Public saving	-12.6	2.3	5.5	2.5	3.6
Private saving	7.4	12.3	23.5	19.7	37.2

Note: Figures before and after 1990 are not strictly comparable.

Source: Estimated from NSB (2000) and NSB (2004).

High rates of capital formation and a high ICOR have important implications for the development challenges facing Bhutan. First, a high rate of capital formation implies that high rates of GDP growth are not necessarily translated into equally high rates of growth for personal income and consumption, as a lot of output is diverted into capital formation. Rapid growth may not necessarily lead to a commensurate reduction in poverty in the short run. Second, the Bhutanese government will have to find the resources necessary to finance the high rate of capital formation.

So far, a combination of high domestic savings rates and generous inflow of foreign assistance, mostly from India, have sustained the high rate of capital formation—although the relative contributions of these two sources have changed dramatically over the last two and a half decades. In the early 1980s, gross domestic savings was actually negative, to the tune of nearly 5 percent of GDP (Table 2.7). Thus, net capital inflow from abroad not only financed the whole of investment, it even added to national consumption. The negative savings can be attributed to the large dis-saving in the public sector. This was caused by the enormous budget deficits that the government was running at that time in order to build up essential infrastructure in the face of very limited domestic resources. Private savings were positive, but low, at only 7 percent of national income.

Since then, private savings have grown at a rapid rate. At the same time, public savings have turned positive—albeit at a much lower level compared to private savings—as the Chhukha hydropower project brought in unprecedented revenue for the government after 1986. As a result, domestic savings gradually became large enough to eclipse foreign capital as the major source of investment finance. By the second half of the 1990s, the two sources became almost equal, each amounting to about 22-23 percent of GDP. After 2000, domestic savings became exceptionally high at 41 percent of GDP, while the contribution of foreign capital rose to 25 percent (Table 2.7). It is rare for countries at Bhutan’s level of per capita income to save such a high proportion of national income. It is more often the corporate sector, rather than households, that generates the bulk of the savings. The reason why the corporate sector generates so much saving is that they need to reinvest their own surplus in the absence of a well-developed system of financial intermediation—the banking system of Bhutan is still very small and the capital market rather rudimentary.

The main reason why the financial sector remains underdeveloped is that the market, relative to the scale economies of financial intermediation, is simply too small. As the fixed costs are too high relative to the size of the market, the financial sector operates virtually in a situation of natural monopoly (or rather duopoly, in the case of Bhutan). As a consequence, the interest rate remains high despite financial deregulation and exhortation on the part of the central bank to bring the interest rate down. The high interest rate, in turn, inhibits the growth of the credit system and gives impetus to the corporate sector to finance capital formation through reinvestment of surplus. But the fact that financial intermediation plays a small role in converting savings into investment means that even though the rate of savings may be high the efficiency of its use is still rather low. In particular, new profitable investment opportunities, despite an overall high level of savings, may be starved of necessary finance. The development of the financial sector is, therefore, an essential prerequisite for sustaining a high rate of growth in the years ahead.³

One other aspect of capital accumulation in Bhutan that deserves special mention, relates to the composition of investment. Table 2.8 shows the composition of investment during the two periods 1991-1993 and 2001-2003 and annual rates of growth of the various components between these two periods. The striking feature of this table is the growing importance of construction, relative to machinery and equipment, in the portfolio of investment. During 1991-1993, machinery and equipment accounted for a larger share (59 percent) of capital formation compared to construction

³ The financial and monetary situation of Bhutan is discussed more fully in Chapter 4.

(45 percent), but within one decade their roles reversed completely. During 2001-2003, construction accounted for 77 percent of all investment, while machinery accounted for only 24 percent.

Table 2.8 Components of Investment: 1991-2003
(In constant 1980 prices)

Component of investment	1991–1993		2001–2003		1991–1993 to 2001–2003
	Amount (Nu. million)	Share (%)	Amount (Nu. million)	Share (%)	Growth rate (%)
I. Construction:	1935.4	45.3	11156.1	76.9	19.1
1. Government	1300.6	30.4	3077.7	21.2	9.0
2. Non-government	634.8	14.8	8079.1	55.7	29.0
II. Machinery & equipment	2527.4	59.1	3537.9	24.4	3.4
1. Government	920.2	21.5	1277.4	8.8	3.3
2. Non-government	1607.2	37.6	2260.5	15.6	3.5
III. Change in stocks	-185.9	-4.3	-192.7	-1.3	0.4
1. Government	0.0	0.0	0.0	0.0	0.0
2. Non-government	-185.9	-4.3	-192.7	-1.3	0.4
IV. Total	4276.9	100.0	14502.1	100.0	13.0
1. Government	2220.8	51.9	4355.2	30.0	7.0
2. Non-government	2056.1	48.1	10146.9	70.0	17.3

Source: Estimated from NSB (2004).

The rising importance granted to construction might be expected in view of the spurt in construction activities associated with the Tala hydropower project as well as the housing boom in and around Thimphu. What is worrying, however, is the fact that the growth of machinery and equipment has been quite slow—only 3.4 percent per annum compared to 13 percent for overall investment and 19 percent for construction. Moreover, a large part of the new machinery and equipment was meant for the construction sector, which means that the rest of the economy, especially the manufacturing sector, has gained very little from the exceptionally high rate of capital accumulation that Bhutan has experienced in the recent past.⁴

2.3 The Macroeconomic Environment

On the surface, the macroeconomic environment of Bhutan can be described as quite sound in the conventional sense. It has a low budget deficit, a low and stable inflation, a highly open trade regime, and a current account surplus (including grants from abroad) in its external transactions. Detailed scrutiny, however, reveals a number of weaknesses as well as some strengths. Unlike many other developing countries, Bhutan did not have to undergo a formal structural adjustment programme because it never faced serious macroeconomic imbalances to warrant such a

⁴ The problem of capital accumulation in the manufacturing sector is further indicated by the pattern of import discussed in Chapter 6. Its implications are analysed in Chapter 11.

programme. Nonetheless, Bhutan has undertaken a wide range of liberalization programmes—especially in the realm of financial policy and trade and industrial policy—that allow for a greater role of the market mechanism in resource allocation and encourage a shift of economic activities from the public to the private sector. Some of the major trends in the macroeconomic scenario of Bhutan are discussed below.⁵

2.3.1 The Fiscal Regime

Given the low level of development of the private sector, the government plays an important role in the Bhutanese economy—not only in providing infrastructure and social services but also in producing economic goods and services. Of the various production activities undertaken by the government, the expenditure on large hydropower projects are kept outside the budget (although the dividends and taxes earned from the projects are included in the revenue side of the budget). In spite of this exclusion, government expenditure has accounted for over 40 percent of GDP in recent years, making the relative size of the government in Bhutan by far the largest in South Asia.

The size of government revenue relative to GDP, averaging around 22 percent in the recent years, is also quite high in Bhutan compared to other South Asian countries. However, in regards to this point a few qualifications are in order. First, most of the revenue comes from non-tax sources, such as dividend from various corporations in which the government has the majority share. By contrast, the tax effort is very weak. Tax revenue as a percentage of GDP is actually one of the lowest in South Asia, even though the tax effort is improving slowly over time. Second, government revenue provides less than half of the resources devoted to public expenditure. The remainder comes mainly in the form of grants from donor countries, India being the single largest contributor.

Government revenue is just about adequate to meet its current expenditure. In fact, it is a conscious government policy to meet all current expenditure from internal revenue. In this, the government has largely succeeded; most years it has been able to generate a small revenue surplus. However, almost the entire capital expenditure is financed through foreign aid, which starkly demonstrates the extent to which Bhutan is dependent on the external world, especially India.

In recent years, the government found it increasingly difficult to maintain the overall level of expenditure. Internal revenue has fallen slightly as a percentage of GDP, whereas the relative grant size has fallen quite rapidly, with the result that the overall budget deficit has increased sharply from just over 1 percent of GDP in the second half of the 1990s to close to 7 percent during 2000/01-2003/04. The deficit was financed by taking increasing recourse to foreign loans, which increased from about 2 percent of GDP to over 5 percent. Loans, however, have not been able to bridge the gap entirely. As a result, domestic deficit financing has also increased sharply. In the second half of the 1990s, the government actually had, on average, a domestic surplus, but in the years 2000/01-2003/04 the deficit has shot up to 1.5 percent of GDP, most of which

⁵ *The macroeconomic environment as well as macroeconomic policies and their reforms are discussed in detail in Chapters 4, 5 and 6. This section, therefore, provides only a brief overview.*

has been monetized. A deficit of this magnitude is still not very high when compared with other developing countries. Moreover, one redeeming feature is that with the implementation of the Tala hydropower project government revenue is expected to increase greatly, which should help rein in the budget deficit.⁶

The donor community has shown a clear tendency to replace grants with low-cost loans in recent years. This substitution of loans for grants has potential implications for the debt burden, which ought to make the government as well as the donors wary. The overall debt burden has increased significantly in the last decade and a half. In recent years, the outstanding external debt has amounted to almost two thirds of GDP, which is a high figure by international standards.

In order to appreciate the real burden of debt in the context of Bhutan, it is necessary to make a distinction between a ‘rupee loan’ and a ‘convertible currency loan’. A ‘rupee loan’ is the loan owed to India that can be repaid in rupees earned from export of hydropower and other items to India, whereas the ‘convertible currency loan’ is a loan from all other sources that have to be repaid in convertible currency. Since Bhutan has very limited capacity to earn hard currency, it is the convertible currency loan that is the major source of concern for Bhutan.

In this context, it is worth noting that the recent increase in the debt burden is solely on account of rupee loans. The outstanding amount of convertible currency loans have actually declined from where they stood at 34 percent of GDP from the first half of the 1990s to the first half of the present decade, and debt-servicing ratio has declined over the same period from 32 percent of hard currency earnings to 21 percent. However, even after the fall, the debt-servicing ratio remains well above the norm for South Asia, where, with the sole exception of Pakistan, the ratio ranges from around 5 percent to 15 percent of export earnings. Furthermore, the ratio will tend to rise in Bhutan in the years ahead as the donor community increasingly substitutes grants for loans. In view of the inherent difficulties Bhutan faces in increasing its hard currency earnings,⁷ any rise in the debt-servicing ratio for convertible currency loans will be a matter of serious concern.

2.3.2 The Monetary and Financial Regime

The situation on the monetary front has remained well under control so far. Inflation has remained within single digit figures for most of the years during the last decade and has in fact declined somewhat in the recent years compared to the early 1990s when the average inflation rate was just above 10 percent. The main reason for price stability is that Bhutan adopts a fixed exchange rate policy with India, its main trading partner, and maintains a one-to-one parity between the ngultrum and the Indian rupee. Adoption of a fixed exchange rate with by far the largest trading partner ensures that inflation in Bhutan is essentially one of imported inflation variety, tracking closely the inflation in India. As inflation in India has remained relatively low by international standards, so has the imported inflation in Bhutan.

⁶ However, the pressure to spend the new-found resources on essential infrastructure and social services will also be high, especially in view of the possibility that the donors might scale down their grants, which have so far been the main source of capital expenditure. In that event, the pressure on budget deficit might even mount rather than ease.

⁷ The constraints to hard currency earnings are discussed more fully in Chapter 6.

The adoption of a fixed peg with the India rupee makes the current monetary system in Bhutan closely resemble a currency board system, which implies that Bhutan has very little scope for conducting an independent monetary policy. This does not, however, mean that monetary policy has no role to play in the Bhutanese economy. One of its main functions is to sterilize any excess liquidity that might arise from balance of payments operations attempting to maintain the parity with rupee. This function is very important because although the prices of tradables are determined largely by inflation in India, the prices of non-tradables can still be influenced by domestic money supply. Rapid growth of money supply may push up the real exchange rate by causing a higher rate of inflation for non-tradables relative to tradables. This could worsen the foreign exchange constraint which is already proving to be a serious handicap for the Bhutanese economy.

The financial system of Bhutan has been liberalized since 1997, allowing the banks to set their own interest rates and to choose their own allocation of credit among competing sectors. Subsequent reforms have liberalized the system further by allowing the banks to determine the spread between deposit and lending rates depending on the forces of supply and demand. Two major consequences have followed from these reforms.

First, although deposit rates have come down in line with inflation, lending rates have fallen very little, resulting in a rising interest rate spread in the post-liberalization period. The expectation behind liberalization was that it would unleash the forces of competition, which in turn would help reduce the spread—by raising the deposit rate and lowering the lending rates—and thereby stimulate the process of financial intermediation. In fact, the opposite has happened. The reason for this lies in the fact that the very small size of the financial market makes it almost a natural monopoly—or rather a natural duopoly in the case of Bhutan, where the larger of the two existing commercial banks sets the price and the smaller one follows suit. The monopolistic character of the financial market had remained dormant in the era of administrative control, but liberalization has helped to bring it out into the open. It is the exercise of monopoly power that has resulted in a rising interest rate spread following liberalization, thereby inhibiting rather than stimulating the growth of financial intermediation.

Second, the allocation of credit has shifted heavily towards construction and trade services, and away from manufacturing. This should be a matter of serious concern for the policy makers, as this trend goes counter to their avowed policy of stimulating private sector led growth of manufacturing. The credit allocation system also does little to favour farmers and small entrepreneurs. A programme of microfinance has been initiated with the objective of helping small farmers. Special programmes do now exist for small entrepreneurs as well, but the scope and reach of these initiatives are still very limited.

2.3.3 The Trade Regime

Bhutan is a classical case of a small open economy characterised by a high degree of dependence

on trade. In the second half of the 1990s, Bhutan exported roughly one third of its GDP and its imports amounted to nearly 40 percent of GDP, resulting in an overall trade ratio of nearly 75 percent. The ratio has declined slightly in recent years, but even now, with a trade ratio of more than 60 percent of GDP, Bhutan is by far the most open economy in South Asia.

Ever since planned economic development began in Bhutan in the 1960s, India has been by far the most important trading partner of Bhutan. Currently, India accounts for more than 90 percent of Bhutan's exports and more than 80 percent of its imports. India's predominance in Bhutan's external trade can be traced to India's geographical proximity, the landlockedness of Bhutan, a bilateral Free Trade Agreement (FTA), a free current account convertibility between the ngultrum and the India rupee and generous grants from India.

Sale of electricity comprises almost 44 percent of the exports to India. Other major exports include mineral and chemical products, wood and wood products, fresh fruits and vegetables. Imports from India include chemicals, minerals and heavy machinery used in the industries and construction of hydropower plants. Bhutan also imports most of the consumer goods from India.

To some extent, the predominance of bilateral trade with India signifies Bhutan's limited ability to diversify its export markets. This creates a mismatch between the import from and export to third countries, as nearly 16 percent of imports are denominated in convertible currency, while less than 5 percent of exports earn convertible currency. Tourism also contributes to the earnings of hard currency. But even after taking its contribution into account, the mismatch between the earning and spending of hard currency remains very large. The consequence is a severe foreign exchange constraint which continues to plague the Bhutanese economy even as trade with India flourishes and is expected to continue to flourish with the commissioning of the Tala hydropower project in 2006.⁸

The current account deficit (excluding grants from abroad) is large and continues to widened over time. Generous external grants, especially from India, have helped sustain this deficit. In fact, the grants have been so large that even after meeting the current account deficit, they have added to the stock of international reserves held by the Royal Monetary Authority of Bhutan (RMA). In the recent past, reserves have been large enough to finance more than 20 months' imports.

Since over 80 percent of Bhutan's import trade is with India, with whom Bhutan has a FTA (signed first in 1974 and subsequently revised on several occasions), it is inevitable that the trade regime of Bhutan would be exceptionally open by the standards of developing countries. Trade with the rest of the world was, however, subject to rigid quantitative controls until the early 1990s, when in the wake of a general move towards economic liberalization, quantitative restrictions were replaced by trade taxes. The replacement of quotas by tariffs was justified on both efficiency grounds, insofar as the price mechanism would have a greater role to play in determining the pattern of imports, and on revenue grounds, in that tariffs would yield revenues for the government whereas quotas did not do so. Thus, unlike in many other developing countries, trade liberalization in Bhutan did not have any potentially adverse revenue implications. This has

⁸ *The implications of the foreign exchange constraint for the long-term development of the Bhutanese economy are analysed in Chapter 12.*

remained true till today as there has been no move to reduce tariffs; in fact, the tariff rates were revised upward very recently.

There are two main trade taxes in Bhutan, that is to say, the Bhutan sales tax and customs duty. The sales tax is actually a trade-neutral tax as it falls equally on imported and domestically produced goods, although the reality is that there are very few domestic substitutes of imported products. Customs duty is the only trade-distorting tax. However, it falls on such a small proportion of total imports (namely on imports from countries other than India) and there are so many exemptions and leakages that neither its distortionary effect nor its revenue-raising effect is of much significance.

The real restriction to trade comes from the policy of administered allocation of hard currency. Restrictions on capital account transactions exist for all countries, including India. However, current account transactions are restricted only for countries other than India that is to say, for trade in hard currency. The stated reason for not allowing convertibility for hard currency transactions is the limited availability of hard currency. This is understandable. However, it needs to be pointed out that even as the availability of hard currency has remained limited, an increasing amount of it has been set aside by the RMA to build up a huge reserve of hard currency that is adequate to finance over 13 years' of hard currency imports (at the current rate of import)! While the desire to have a large enough reserve in the face of uncertain supply of hard currency is perfectly understandable, the opportunity cost of holding too high a reserve cannot be ignored either. There is surely a delicate balance to be struck here by the Bhutanese policymakers.

2.4 Summary

Bhutan's GDP has grown at an average rate of 7 percent per annum in the quarter century up to 2004. Using a rough estimate of population growth of around 3 percent based on fragmentary evidence, per capita income would have increased at the highly respectable rate of around 4 percent per annum during this period. The driving force behind the economy has been hydroelectricity and its related activities such as construction and some energy-intensive industries.

Rapid growth has not, however, transformed the Bhutanese economy into a modern industrial society in the sense of creating a strong manufacturing base. Manufacturing has, in fact, been the weakest link of the industrial sector, especially in the recent years. On the whole, the stimulus to growth provided by hydro-electricity has largely bypassed the agricultural sector and only marginally benefited manufacturing. Infusing dynamism into agriculture and manufacturing remains a major challenge for Bhutan in the years ahead.

The high growth rate of the Bhutanese economy has been underpinned by exceptionally high rates of savings and investment. Over the last two decades and a half, gross investment has grown at the average rate of 10 percent per annum, as compared with 7 percent growth in GDP, leading to a high incremental capital-output ratio.

Such a high rate of capital formation, and the attendant high incremental capital-output ratio, is partly explained by the dominance of hydropower, which is a highly capital-intensive activity. But partly this is also a consequence of the low density of population living in a rugged mountainous terrain. The cost of physical infrastructure necessary to connect people in different parts of the country and to provide essential services to them is bound to be high under these conditions.

On the surface, the macroeconomic environment of Bhutan can be described as quite sound in the conventional sense—it has low budget deficits, low and stable inflation, a highly open trade regime, and a current account surplus (including grants from abroad) in its external transactions. Detailed scrutiny, however, reveals that along with these strengths there are also a number of weaknesses (discussed in Chapters 4-7).

Unlike many other developing countries, Bhutan did not have to undergo a formal structural adjustment programme, because it did not face serious macroeconomic imbalances to warrant such a programme. Nonetheless, Bhutan has undertaken a wide range of liberalization programmes since the early 1990s, especially in the realm of financial policy and trade and industrial policy, so as to allow a greater role of the market mechanism in resource allocation and to encourage a shift of economic activities from the public to the private sector.

CHAPTER 3

POVERTY, HUMAN DEVELOPMENT AND EMPLOYMENT

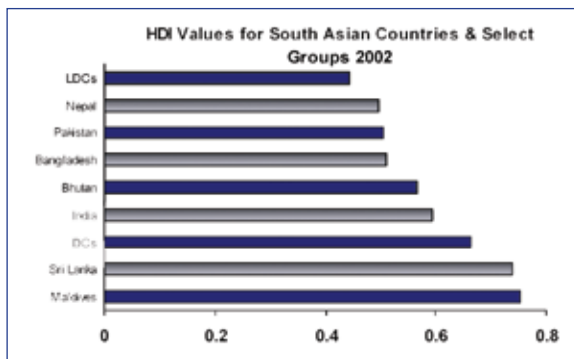
3.1 Poverty and Human Development

Unlike most other countries in the developing world, Bhutan did not (until recently) attempt to measure its level of poverty through the standard procedure of estimating a poverty line and then finding out through household surveys how many peoples income or expenditure fell below that line. This was partly because Bhutan has traditionally adopted a broader view of poverty than the narrow concept of income poverty that underlies the standard estimation procedures. This broader view of poverty encompasses various aspects of an individual's standard of living such as access to food, land, housing not to mention access to health and educational services. Although most of these aspects were not systematically measured in order to arrive at a judgement about the prevalence of the multi-dimensional concept of poverty implicitly adopted by Bhutan, casual empiricism suggests that poverty was not a serious problem in the country. This presumption was based on the existence of a kind of welfare state instituted by the King of Bhutan that was unique among the developing countries.

Evidence to support the benevolent nature of the welfare state in Bhutan can be found in the measures of human development recently estimated by RGOB (2005a). These estimates show that Bhutan's human development index (HDI) for 2002 was 0.597, which reflects a medium level of human development. In terms of the worldwide ranking of HDIs, Bhutan is ranked at 131 among 177 countries and is placed in the group of medium human development countries. Bhutan enjoys

relatively higher human development levels in comparison to the least developed countries to which it belongs. Its HDI value stands at 85 percent of the average for all developing countries and 62 percent for all developed countries. In South Asia, it has a higher HDI than Bangladesh, Nepal and Pakistan. Only India, Maldives and Sri Lanka are better placed than Bhutan in terms of HDI (Figure 3.1).

Figure 3.1 Bhutan’s HDI Relative to South Asia



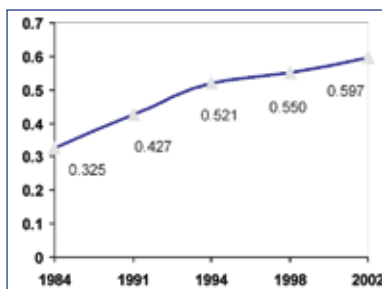
Source: RGOB (2005a)

Among the components of HDI, Bhutan fares best on account of life expectancy. At 66.1 years, the average life expectancy in Bhutan is comparable with that of Indonesia, Kazakhstan, Maldives and Russia—all countries that have much higher HDI values—and higher than the South Asian average life expectancy of 63 years.

Bhutan also fares reasonably well in the per capita income index. At the market exchange rate, Bhutan’s per capita income of US \$835 compares favourably with income levels in Indonesia and Sri Lanka. However, in purchasing power parity (PPP) dollars, at US \$2100, this is at par with countries with much lower GDP per capita, reflecting the high cost of living compared to that in other countries in the region.

Figure 3.2 charts the progress in human development for the period 1984-2002, and shows a rapid and sustained improvement in human development during this period. From a low value of 0.325 in 1984, HDI went up to 0.597 in 2002—almost doubling within a space of just two decades. The gains, however, appear to be gradually slowing down since the mid 1990s. This apparent slowing down could be largely due to the fact that the earlier gains were made from a smaller base.

Figure 3.2 Trend in HDI in Bhutan: 1984-2004



Source: RGOB (2005a).

A disaggregated analysis of the progress of HDI over time demonstrates that improvements in health and income have played a more important role than educational attainments in raising the value of HDI. This is largely due to the continuing low levels of adult literacy and low enrolment rates at the tertiary level, both of which constitute critical areas that need priority attention. Due to the slow rate at which health and educational attainments are progressing at present, and after exhausting the possibilities of rapid progress from a small base, it appears likely that most of the future gains in HDI will derive mainly from increases in per capita income.

The perception of a moderately high level of human development in Bhutan goes hand in hand with a common perception that acute and endemic hunger is not as serious a problem in Bhutan as it is in most other South Asian countries. This perception is based on the presumption that no one could possibly suffer from endemic hunger in Bhutan, because under the provisions of the welfare state everybody is entitled to a minimum amount of agricultural land, given freely by the state, on which to grow food for oneself. Similarly, lack of housing could not be a serious problem either because the State not only gave everyone a piece of land as homestead but also provided them with timber at heavily subsidized prices to build modest houses for themselves. Welfare state provisions existed in the health and education sectors as well. The government has always prided itself on bringing free health care services to people living in remote areas of the country and providing free universal education at all levels, despite the high cost of providing universal services in a sparsely populated country like Bhutan. Over the years, nearly a quarter of all budgetary expenditure of the government of Bhutan has been devoted to health and education, which is a far greater share than what can be observed in most other countries of South Asia. For all these reasons, the general presumption has been that poverty is not a serious problem in Bhutan. As a result, since the problem has not been perceived as a serious one, there was no felt need to measure it either.

However, with the Poverty Reduction Strategy Papers (PRSP) process initiated by the Bretton Woods institutions and the compulsion to monitor the attainment of Millennium Development Goals (MDGs) adopted by the United Nations, the need for measuring poverty has become more compelling in recent years. With that purpose in mind, a large-scale household income and expenditure survey was conducted for the first time on a pilot basis in the year 2000. Based on the experiences gained from the pilot phase, a more sophisticated household survey, called the Bhutan Living Standard Survey, was subsequently conducted in the year 2003. Using the data generated by this survey and by applying the standard procedures for estimating poverty developed by the World Bank and others, the government of Bhutan has for the first time come up with official estimates of poverty. According to these estimates, 32 percent of the people living in Bhutan were counted as poor in the year 2003.

This estimate surprised many, including the government itself. For a nation, confident in its belief that its welfare state has mostly conquered poverty, learning that one in three people lives in poverty was shocking, to say the least. All kinds of questions have been raised about the reliability of the data and the appropriateness of the methodology of estimation used. A proper scrutiny of the data and the methodology has yet to be undertaken, however. While one must await such a scrutiny before making a final judgement about the quality of the estimate, for the time being one can only go by what estimates are available.

According to these estimates poverty is much more widespread and more severe in rural Bhutan as compared to the urban areas (Table 3.1). As many as 38 percent of the rural people are poor, compared to only about 4 percent of the urban population. There is also a great deal of regional variation in poverty. The Eastern region has the largest incidence of poverty, with almost half the population living below the poverty line. By contrast, the Western region has the lowest incidence of poverty with a headcount ratio of just 19 percent. The Central region, with a ratio of 30 percent, is somewhere in the middle.

Table 3.1 Prevalence and Incidence of Poverty: 2003

	Head Count Ratio (%)	Share of the Poor (%)	Poverty Gap Index	Poverty Severity Index
Bhutan	31.7	100	0.085	0.031
Rural	38.3	97.4	0.105	0.038
Urban	4.2	2.6	0.007	0.002
Region				
Western	18.7	23.6	0.047	0.016
Central	29.5	24.2	0.066	0.021
Eastern	48.8	52.3	0.147	0.056

Source: NSB (2004b).

But it is not just poverty that is an issue, inequality is also surprisingly high in Bhutan. The Gini index of expenditure distribution was estimated at 0.42 for the country as a whole, 0.37 in urban areas and 0.38 in rural areas in 2003 (NSB 2004b). To put it another way, the richest 20 percent of the population of Bhutan enjoys nearly half (48.7 percent) of the total consumption expenditure while the poorest 20 percent receive a share of only 6.5 percent. These figures indicate a high degree of inequality according to the standards of South Asia, especially for rural areas.⁹

A high degree of rural inequality is also indicated by the distribution of land. Less than 10 percent of the households owning 10 acres or more of land account for over 30 percent of the total agricultural land available. On the other hand, nearly 14 percent of the total agrarian households owning less than an acre account for only 1.4 percent of the available land (see Table 8.6 in Chapter 8). The problem of landlessness is not as acute, however, as in other South Asian countries—only 2.6 percent of households are estimated to be landless in Bhutan.

Analysis of the poverty profile shows that, apart from the region in which a person lives, there are several other variables that are closely correlated with poverty. Two such important variables are physical infrastructure and educational level of the household. Greater proximity to roads is associated with a lower incidence of poverty. Lack of education is more pervasive among the poor, and the education difference between the poor and the non-poor is especially sharp in urban areas (Table 3.2). Some demographic characteristics of the households are also relevant. First, households with a higher dependency ratio tend to be poorer. Second, gender of the household head has an effect, although not a very pronounced one. Female-headed households have been found to have a slightly higher level of poverty than male-headed households (Table 3.3).

⁹ By way of comparison, the Gini index based on consumption expenditure in Bangladesh was only 0.30 in rural areas in 2000, while in the urban areas the index, 0.38, was similar to that in Bhutan.

Table 3.2 Educational Attainment of Household Heads by Poverty Status: 2003
(Figures in percentages)

Educational level	Urban		Rural	
	Poor	Non-Poor	Poor	Non-Poor
No schooling	62.8	35.0	93.9	86.6
Primary	24.2	18.5	5.7	7.7
Lower secondary	7.7	11.3	0.2	1.5
Middle secondary	4.6	19.9	0.1	3.3
Higher secondary	0.0	8.6	0.0	0.9
College and above	0.7	6.8	0.0	0.1
Total	100	100	100	100

Source: NSB (2004b).

Table 3.3 Poverty Incidence by Gender of Household Heads

	Male	Female
Per capita monthly expenditure (Nu)	1790	1623
Poverty ratio (%)	23.9	26.3
Poverty gap index	0.062	0.071
Poverty severity index	0.021	0.025

Source: NSB (2004b).

Because of the absence of comparable household-level data at different points in time, it is not possible to judge how poverty has changed over time.¹⁰ However, other indicators, such as those related to health and education, reveal considerable improvement in the standard of living.

Nationwide health surveys carried out in 1984, 1994 and 2000 reveal a strong trend of improvement in a number of different health indicators (Table 3.4). Crude death rate has fallen from 13.4 in 1984 to 8.6 in 2000. During the same period, infant mortality has declined sharply from 103 to 61 and under-five mortality fell from 162 to 84. Maternal mortality has also declined continuously, from 7.7 in 1984 to 3.8 in 1994 and still further to 2.6 in 2000. These improvements in the health status of the population are reflected in rising life expectancy, which has gone up spectacularly from 48 years in 1984 to 66 years in 1994.

¹⁰ An estimate for the year 2000, available from the Pilot Household Income and Expenditure Survey carried out in that year, shows a poverty rate of 36 percent for the country as a whole, with rural poverty at 41.3 percent and urban poverty at 6.5 percent (CSO 2001). However, these figures are not comparable with the figures for 2003 quoted in Table 3.1 because of differences in the methodology of constructing the poverty line.

Table 3.4 Health Status Indicators

	1984	1994	2000
Crude death rate	13.4	9.0	8.6
Infant mortality rate	102.8	70.7	60.5
Under-5 mortality rate	162.4	96.9	84.0
Maternal mortality rate	7.7	3.8	2.6
Life expectancy	47.5	66.1	
Male	45.8	66.0	
Female	49.1	66.2	

Sources: MOHE (1994, 2000) and NSB (2005).

There has also been significant improvement in educational attainment in terms of both enrolment and completion rates (Table 3.5). In just one decade, between 1990 and 2000, gross enrolment rate at the primary level jumped from 55 percent to 72 percent. At the same time, the proportion of students completing grade 7 has doubled from 35 percent to nearly 70 percent.¹¹

Table 3.5
Enrolment and Completion Rates

	1990	2000
Gross primary enrolment rate	55	72
Proportion of pupils starting grade 1 who reach grade 5	73	86
Proportion of pupils starting grade 1 who reach grade 7	35	69

Source: RGOB (2002a).

It is evident that despite rapid progress made in the past, Bhutan is still somewhat behind in its goal of universal primary education. Reaching educational services to a scattered population living in remote mountainous regions is one of the problems encountered. However, great strides have been made to build schools in remote areas and provide free boarding facilities to students who do not have easy access to a school near their homes.

As a result, when the recent Living Standard Survey enquired about the reasons for children not attending school in Bhutan, distance of the school did not figure as a major problem (NSB 2004c). In fact, none of the urban respondents cited it as a cause and only 8 percent of rural respondents did so (Table 3.6). A much more important reason was economic compulsion. As much as 44 percent of all absences were explained by the fact that either the child could not “afford to go to the school” or “the child needed to work”. It would appear that persistent poverty of the household rather than access to schooling facilities now remains the major stumbling block towards achieving the goal of universal primary education.

¹¹ In Bhutan, the primary education cycle is defined as grades 1-7.

Table 3.6 Proportion of Children Not Attending School by Reasons
(Percentage)

	Rural	Urban	Bhutan
Not interested	7.5	16.3	7.6
Cannot afford	26.1	39.2	26.3
Needs to work	18.0	1.2	17.8
Did not qualify	5.8	9.2	5.8
School is too far	8.3	0.0	8.2
Illness	2.5	7.7	2.6
Too young/old	5.5	1.6	5.5
Problems at home	9.9	8.0	9.9
Caring for sick relative	0.2	0.0	0.2
Others	16.0	16.7	16.1

Source: NSB (2004b).

The importance that poverty plays as a barrier to education is confirmed by comparing the rates of school attendance among the poor and the non-poor. In the age-group of 6-12 years, only 58 percent among the poor attended school as against 77 percent among the non-poor. In the higher age group of 13-19 years, the difference is less marked, especially in urban areas, but a big gap still exists among the poor and the non-poor in rural areas (Table 3.7). It should be noted that differential rate of access to education among the poor and the non-poor is not simply a consequence of the fact that most of the poor people live in less developed areas where providing educational services is inherently more difficult. Wide gaps in attendance exist among the poor and the non-poor in all three regions of Bhutan (Table 3.8). The problem thus lies not just in regional features, but also in poverty at the household level.

Table 3.7 School Participation Rate by Poverty Status
(Percentage)

	Poor	Non-Poor
Age-group 6–12 years		
Urban	79.7	89.5
Rural	56.9	71.3
Bhutan	57.7	76.8
Age-group 13–19 years		
Urban	77.0	77.3
Rural	39.2	51.2
Bhutan	40.1	58.5

Source: NSB (2004b).

Table 3.8 School Participation Rate across Regions by Poverty Status (Percentage)

	Poor	Non-Poor
Age-group 6–12 years		
Western	37.4	77.8
Central	53.8	70.7
Eastern	68.1	80.9
Age-group 13–19 years		
Western	25.2	63.5
Central	41.9	53.2
Eastern	45.1	49.5

Source: NSB (2004b).

When the impact of poverty on educational achievement is observed alongside the observation made earlier that households whose heads have lower levels of education suffer from higher levels of poverty (Table 3.2), it is evident that many rural families in Bhutan are caught in an intergenerational poverty trap. Children born into poor families cannot always avail the educational opportunities open to them, as a result a lack of education condemns them to a life of poverty for themselves and their own children in future. For these people to come out of the poverty trap, it is not enough to bring educational services closer to their doorstep. It is essential to provide productive employment opportunities to the adults of the households so that they are able to send their children to school. These children will then be able to use their education to lift themselves out of poverty as they become adults.

3.2 The Regional Dimension

Bhutan has consistently emphasized the need for sustainable and geographically balanced development to ensure equitable improvement in the well-being of all Bhutanese people, which is one of the main pillars of the Gross National Happiness (GNH) approach. The regional dimension of development thus assumes special importance in the development strategy of Bhutan. The Vision 2020 document clearly stressed the importance of balanced and equitable development as a means of ensuring that the benefits of development are shared equitably between different income groups and regions. Equitability will help promote social harmony, stability and unity and contribute to the development of a just and compassionate society. This goal is especially relevant in Bhutan because of its demographic and geographic characteristics: A small population scattered over a relatively large area, giving rise to low-density settlements in far-flung areas separated by rugged mountains and poorly connected with each other by roads or other means. In such a situation, the benefits of growth will not automatically percolate to all parts of the country unless special measures are taken to make sure that they do.

The Royal Government of Bhutan has tried to implement the strategy of regionally balanced human development through various policy instruments, including political and fiscal decentralization,

widespread network of primary health care, aiming for universal access to primary education, and creating a wide spread network of physical infrastructure. As a result of the concerted effort to take health facilities to the doorstep of the rural people, as much as 90 percent of the country now has access to these facilities. Health care is delivered through an integrated system with national, regional and district hospitals serving as referral centres, followed by the Basic Health Units (BHU) at the community level. The Units serve remote areas and are staffed by well-trained paramedics who are equipped to treat minor ailments and give advise on preventive measures against communicable diseases. Extended Health Centres (Outreach Clinics) and Mobile Health Units support the BHUs.

In the field of education, the government not only provides free education at all levels (including higher studies abroad), but also operates a system of free boarding and lodging for needy students. Many schools provide boarding facilities for students living in areas far from a school. Children from communities that do not have their own schools enrol in the distant schools either as day scholars or as boarders. This enrolment has been made possible largely through the provision of meals by the World Food Programme (WFP). At higher levels of education, a deliberate decision was made to locate the only college of the country in the eastern region, which has traditionally been the most disadvantaged part of the country, for both geographical and historical reasons. The nascent University system, rather than being located on a single campus, was deliberately designed as a network of institutions of specialized education spread out in different parts of the country.

The system of administrative and fiscal decentralization allows each dzongkhag (district) and gewog (the lowest level administrative unit) to draw up their own local plans, depending on their own priorities and co-ordinated by popularly elected representatives. These local level plans constitute an integral part of the overall national Five Year Plan. These plans are financed to a certain extent by locally mobilized resources, in the form of labour contributions from the local population, but also in part from subventions from the Central government. In recent years, Central subventions have amounted to nearly a quarter of the entire national budget.¹²

The extent to which these and other efforts have succeeded in promoting a regionally balanced pattern of human development cannot be assessed fully due to the lack of sufficiently disaggregated data at the local level. However, some general patterns can be gauged from a countrywide rapid survey carried out by the Planning Commission in 2000 to assess regional indicators of well-being (RGOB 2000). The study, called the Poverty Assessment and Analysis Report (PAAR), covered all 22 townships and 201 gewogs. The study elicited information from both local levels and the concerned ministries regarding achievements in different dimensions of human development. Indicators were developed for ten different aspects of well-being, that is to say income, education, health, access to economic activities, physical facilities, environment, transport links, communication links, position of women and non-material needs. A composite index was also constructed to rank different dzongkhags and gewogs in terms of relative vulnerability.

A major finding of this study is that despite serious efforts made in the past to achieve regional balance, six dzongkhags located in the eastern part of the country (Samdrup Jongkhar, Pemagatshel,

¹² The details of fiscal decentralization are described in Annex 1.

Trashi Yangtse, Trashigang, Mongar and Lhuentse) continue to remain relatively disadvantaged compared to the rest of the country. Several indicators demonstrate this point.

- Of the 33 percent of the households whose incomes were found to be significantly below the national average, some 22 percent were located in the six eastern districts. Thus, as many as two thirds of the poorest households were concentrated in just 6 out of 20 districts. By contrast, two thirds of the most well-off households were concentrated in just two districts, Thimphu and Paro, both located in the western region.
- The six eastern districts contain a disproportionately large number of gewogs and townships with the most severe problems of food insecurity. Out of the 16 gewogs and townships that reported their people suffering from food insecurity more than one month a year, as many as 8 were located in the eastern districts. Thus, the eastern districts, which account for only 28 percent of all gewogs and townships in the country, were found to contain half of the gewogs and townships most afflicted by food insecurity.
- Out of the 61 gewogs and townships where the distance of the nearest hospital was, on average, more than an eight hour walk away, as many as 32 were located in the eastern districts. Thus, as in the case of food insecurity, the eastern districts bore a disproportionately larger burden of inaccessibility to hospitals.
- A composite health index was created by combining information on infant mortality rate, child immunization rate, incidences of child malnutrition, maternal mortality rate, food insecurity, access to Basic Health Units, incidences of noticeable diseases and accessibility to hospital services. Out of the four districts whose overall health index was found to be well below the national average, three were in the east.
- Out of the 45 gewogs and townships where school enrolment at the primary level fell well below the national average, as many as 20 were located in four eastern districts. These four districts, which account for only 22 percent of all gewogs and townships, were thus found to contain as many as 44 percent of all gewogs and townships with the lowest school enrolment.
- Judging by the composite index of well-being, combining all ten dimensions, all six eastern districts were found to fall in the bottom half of the ranking.

It should be emphasized that since the above findings relate to a particular point in time (the year 2000) and no comparable information is available for earlier periods, not much can be inferred from these figures in regards to the success or failure of the policy of balanced regional development. All that can be inferred is that considerable regional disparity persists even after four and half decades of planned development.

One of the reasons for persistent disparity in well-being lies in the fact that parts of the country still suffer from a lack of connectivity to the rest of the country, especially to the centres of administration and commerce. Thus the same report from which the preceding evidence was drawn also shows that the eastern districts are particularly disadvantaged in respect of connectivity.

Nearly half of the gewogs that were not connected even by feeder roads belonged to the eastern districts. Similarly, some 40 percent of gewogs that were more than 8 hours of walking distance away from the nearest highway belonged to these districts.

A significant contributor to regional development is government expenditure at the regional level. However, one major difficulty in assessing the impact of government expenditure at the regional level is that until the results of the recently completed population census become available, no information is available on the dzongkhag-wise distribution of population. However, there are some indicative figures on the number of households, which can be used to assess the extent of regional balance in the distribution of government expenditure. Table 3.9 shows the regional distribution of Central expenditure incurred through dzongkhag administration along with the share of the dzongkhags in the total number of households in the country, for the fiscal year 2003/04. Broadly speaking, the distribution of expenditure across dzongkhags conforms quite well to the distribution of households. There are, however, some conspicuous exceptions. For example, Thimphu, Chhukha, Paro and to a certain extent Bumthang (all in the west-central region of the country) received a far greater proportion of Central government expenditures compared to their proportion of households. By contrast, there are certain other dzongkhags like Gasa, Samdrup Jongkhar, Trashigang, Samtse and Trashi Yangtse (three of them are in the east) for which Central government expenditures are relatively much lower than what would be warranted by their share of households.

Table 3.9 Regional Distribution of Government Expenditure
(Incurred through Dzongkhag Administration: 2003/04)

Dzongkhag	Share in Dzongkhag Administration Expenditure 2003/04 (%)	Share in Total Number of Households (%)	Dzongkhag	Share in Dzongkhag Administration Expenditure 2003/04 (%)	Share in Total Number of Households (%)
1. Bumthang	3.71	2.98	11. Samdrup Jongkhar	5.78	7.76
2. Chhukha	9.02	5.09	12. Samtse	5.28	9.48
3. Dagana	2.38	3.79	13. Sarpang	7.54	6.80
4. Gasa	1.28	3.09	14. Thimphu	9.22	3.37
5. Haa	3.17	1.76	15. Trashi Yangtse	3.91	5.10
6. Lhuentse	2.64	3.88	16. Trashigang	7.41	13.10
7. Mongar	5.20	6.95	17. Trongsa	4.42	2.64
8. Paro	6.84	4.41	18. Tsirang	3.79	4.40
9. Pemagatshel	4.62	3.94	19. Wangduephodrang	4.57	5.05
10. Punakha	3.86	3.10	20. Zhemgang	5.34	3.32

Source: Unpublished data provided by the Department of Budget and Accounts, Ministry of Finance, Royal Government of Bhutan, Thimphu.

Interestingly, these two sets of dzongkhags stand at the opposite ends of the development spectrum, the former being the most developed and the latter the least developed. To what extent unbalanced government expenditure contributes to this unequal status of development and to what extent unequal development itself warrants unequal government expenditure is

difficult to judge without a deeper analysis. But the fact that unequal government expenditure contributes, to some extent, to unequal regional development cannot be denied.

Notwithstanding the exceptions mentioned above, it must be acknowledged that government expenditure has on the whole been reasonably balanced across regions. Worryingly, however, there is a possibility that this balance might be disturbed in days to come. The present balance has been achieved mainly due to the welfare programmes the government has been implementing in the education and health sectors, which are largely in proportion to the population in the regions under consideration. However, as government expenditures are likely in the future to be dominated by investment on physical infrastructures for promoting the competitive advantages of the regions, the possibility of increasing imbalance in the regional development vis-à-vis household distribution pattern could easily arise.

That balanced government expenditure on social services has so far enabled Bhutan to achieve a fairly balanced regional development in several social dimensions is confirmed by the Poverty Assessment and Analysis Report (PAAR). The study finds that while the ranking of dzongkhags in terms of the composite index of development is highly correlated with the index of physical infrastructure—indicating that lack of connectivity has held back overall progress in the backward districts—there is very little correlation between the overall ranking and the ranking in terms of the health index. This suggests that government efforts have helped to redress to some extent the disadvantages of the backward districts at least in the sphere of social sectors. The task that remains is to ensure a more balanced access to productive activities for all people across the country so that the goal of all around balanced development can be achieved.

3.3 Employment and Unemployment

The analysis of the preceding two sections suggests that creating productive employment opportunities for all, especially for people in rural areas, must form the cornerstone of any strategy for poverty reduction in Bhutan. To see what this really involves it is first necessary to lay out the employment scenario in Bhutan. In the absence of population census, the employment pattern of the Bhutanese people can only be gauged from a series of Labour Force Surveys carried out between 1998 and 2004.¹³ The sectoral distribution of employment revealed by these surveys is reported in Table 3.10.

Table 3.10 Sectoral Distribution of Employment: 1998-2004
(Percentage share)

Sector	1998	1999	2001	2003	2004
Agriculture	76.0	74.9	46.5	75.5	63.2
Industry	5.9	4.8	5.6	4.0	9.8
Services	18.1	20.3	47.9	20.5	27.0
All	100	100	100	100	100

Source: CSO (1999), DOE (2001, 2003, 2004).

¹³ In addition, the Bhutan Living Standard Survey of 2003 also contains data on employment, but the sample size is much smaller and not directly comparable to the Labour Force Surveys.

As can be seen from Table 3.10, the distribution of employment fluctuates quite markedly from year to year, calling into question the reliability of these figures. Yet, some broad conclusions can perhaps be drawn. First, the Bhutanese economy remains largely agricultural. The proportion of labour force engaged in agriculture was around 75 percent in the late 1990s and has fallen in recent years to less than 70 percent. Second, the service sector is the second largest employer after agriculture, employing 20-30 percent of the labour force. Third, industrial employment is very small; no more than 6 percent of the labour force was employed in this sector during most of the years surveyed. The figure seems to have jumped suddenly to 10 percent in 2004, but the authenticity of this jump cannot be verified.

According to these surveys, labour force has grown at an annual average rate of about 3.5 percent during the period from 1998 and 2004, while employment has grown at a slightly lower rate of about 3 percent. This means that the rate of open unemployment has gone up over the years—from 1.4 percent in 1998 to 2.5 percent in 2004 (Table 3.11). Although the rate of unemployment remains low by international standards, the recent rise in unemployment has caused serious concern among policy makers and other observers of the Bhutanese society. In order to understand the nature of the unemployment problem, and especially its relationship to poverty, it is necessary to make a more in-depth probe into the profile of the unemployed. Three features of the unemployed stand out.

Table 3.11 Unemployment in Bhutan: 1998-2004
(Percentage)

	1998	2004
Bhutan	1.4	2.5
Urban	3.8	2.0
Rural	1.0	2.6

Source: CSO (1999), DOE (2004).

First, by looking separately at the rural and urban areas, it becomes apparent (see Table 3.11) that the rise in unemployment has been concentrated entirely in rural areas, where the rate of unemployment has gone up from just 1 percent in 1998 to 2.6 percent in 2004. By contrast, urban unemployment has fallen significantly from 3.8 percent to 2 percent during the same period.¹⁴

Second, the age distribution of the unemployed people shows that the rise in unemployment has occurred exclusively among the youth. Those in the age-group of 15-19 years, that is to say, the new entrants in the labour force, have experienced the sharpest increase in unemployment—from 2.5 percent in 1998 to 7.2 percent in 2004 (Table 3.12). The next higher age group of 10-24 years has seen a much smaller rise in unemployment. Overall youth unemployment has more than doubled from 2.6 percent in 1998 to 5.5 percent in 2004, while it has increased only marginally for the older population. The unemployment problem of Bhutan is, therefore, essentially one of youth unemployment.

¹⁴ An alternative estimate, based on the Bhutan Living Standard Survey 2003, gives a comparable rate of overall unemployment of 2.9 percent as well as a comparable rate of rural unemployment of 2.3 percent but a much higher rate of urban unemployment at 6.5 percent (NSB 2004c). These figures cannot be strictly compared, however, with the Labour Force Survey figures quoted in Table 3.10, owing to differences in survey design and sample size.

Table 3.12 Incidence of Unemployment by Age-Groups
(Percentage)

Age-group (years)	1998	2001	2004
15–19	2.5	8.4	7.2
20–24	2.7	3.8	4.0
All	1.4	1.9	2.5

Source: CSO (1999) and DOE (2001, 2004).

Third, the educational distribution of unemployed people shows a contrast between rural and urban areas. In the rural areas, unemployment is concentrated mainly among those with no or little education, whereas in the urban areas unemployment is much higher among the more educated people, especially among those with more than primary level education (Table 3.13).

Table 3.13 Incidence of Unemployment by Educational Level: 2004
(Percentage)

Educational level	Bhutan	Rural	Urban
No education	57.8	65.1	35.7
Primary	8.7	9.3	7.1
Higher	26.3	16.2	57.2
Non-formal	7	9.4	0

Source: DOE (2004).

Two conclusions emerge from these features. First, rising unemployment is primarily a problem of rural youth with little or no education. Second, overall urban unemployment has fallen but remains a serious problem for the educated youth. The nature of the unemployment problem is thus qualitatively different in rural and urban areas, and this difference has a bearing on how one assesses the linkage between unemployment and poverty in Bhutan.

Rising youth unemployment in the rural areas does not indicate the emergence of surplus labour that one typically finds in densely populated developing countries. On the contrary, all the evidence suggests that on the whole labour is actually scarce in rural Bhutan. Various factors such as a small and scattered population, the migration of educated youth to urban areas and a continual demand for labour contribution towards community projects have all combined to create a scarcity of labour in the countryside, leading to the rising cost of labour. The tendency of rising labour cost has been further aggravated by the government policy of paying a high wage rate of Nu. 100 per day for participation in state-sponsored infrastructural activities, which has become a de facto minimum wage for rural labour. Agriculturists have responded to the rising cost of labour either by keeping their land fallow or by resorting to labour-saving devices such as mechanization of agricultural operations. The combination of slow growth of agricultural production (discussed in Chapter 2) and shift towards labour-saving devices has resulted in sluggish growth in the demand for labour within agriculture. Given this scenario, the educated rural youth has tended to migrate to urban areas in search of non-agricultural employment, thereby further aggravating the vicious circle of labour scarcity, rising labour cost and reduced labour absorption in agriculture. It is

the uneducated rural youth, who are not employable in urban occupations that have been left behind to bear the brunt of the reduced demand for labour (MOA 2005b). This explains the rise in unemployment among the uneducated rural youth.

Finding jobs for the unemployed rural youth, though important to tackle the problem of unemployment, will, however, make only a tiny dent into the problem of poverty. The magnitude of rural poverty is too large in relation to rural unemployment. Recall that as much as 38 percent of the rural people were poor in 2004, while only 2.6 percent of the workers were unemployed. Thus, even if every unemployed person was to find a job, it would make very little difference to the problem of poverty.

The same is true of urban unemployment, but for a different reason. Here the problem of poverty and the problem of unemployment are of similar magnitude, but the population groups affected by them are quite different. As noted earlier, urban unemployment is found mainly among the educated youth. The problem for them is not that jobs are not available but that there is a mismatch between the jobs they aspire to and the jobs that are available. The educated youth seek white-collar jobs in both the public and private sectors, whereas most of the new job openings are of the technical type, requiring specialized skills. Most of the educated youth have neither the motivation nor the skills to take up such jobs. They prefer to wait until a well-paid white-collar job comes their way. However, the very fact that they can afford to wait suggests that they do not in general belong to the poorer segment of the population, for the poor cannot afford to remain unemployed waiting for the 'right' kind of job. Solving the problem of urban unemployment is, therefore, quite a different issue from solving the problem of urban poverty, although no less important.

The key to tackling the problem of both rural and urban poverty in Bhutan lies not merely in trying to increase the number of jobs but in improving the quality of employment. In a country where the population is small and labour is already scarce, what matters is not creation of greater number of jobs but making work more rewarding for the labourer. This can be done either by improving the productivity of the activities in which the poor are already engaged or by transferring them to new occupations where productivity and the returns to labour are higher than exist now. In the context of Bhutan, where most of the poor people live in rural areas, this means that poverty reduction must be pursued through a two-pronged strategy of improving the productivity of agriculture, on the one hand, and creating productive employment opportunities outside agriculture, on the other. The remaining chapters of this report explore in depth the macroeconomic and sectoral issues involved in trying to improve the productivity of the Bhutanese economy in a way that will enable the poor to gain from rising productivity.

3.4 Summary

In comparison with other less developed countries, Bhutan enjoys a relatively high level of human development, thanks to the conscious effort made by the government to look after the people's basic needs. Nonetheless, nearly one third of its population was found to live under the poverty line in 2003.

Poverty is much more widespread and more severe in rural Bhutan compared to the urban areas. As many as 38 percent of the rural people are poor, compared to only about 4 percent of the urban population. There is also a great deal of regional variation in poverty, the eastern districts being far poorer than the rest of the country.

Because of the absence of comparable household-level data at different points in time, it is not possible to judge how poverty has changed over time. However, other indicators, such as those related to health and education, reveal considerable improvement in the standard of living. Thus, life expectancy at birth has gone up spectacularly from 48 years in 1984 to 66 years in 1994. In just one decade, between 1990 and 2000, gross enrolment rate at the primary level has jumped from 55 percent to 72 percent.

Despite such progress, many rural families are caught in an intergenerational poverty trap. Children born into poor families cannot always avail themselves of the educational opportunities open to them, and lack of education condemns them to a life of poverty for themselves and their own children in future. For these people to overcome the poverty trap, it is essential to provide productive employment opportunities to the adults of the households so that they are able to send their children to school. These children will then be able to use their education to rise out of poverty as they become adults.

Regionally equitable development is one of the stated objectives of the government. However, despite serious efforts made in the past to achieve regional balance, the districts located in the eastern part of the country continue to remain at a relative disadvantaged compared to the rest of the country. While the persistent disparity is partly due to the fact that parts of the country still suffer from a lack of connectivity to the rest of the country, especially to the centers of administration and commerce, it must be said that the unequal allocation of government expenditure has also played a role in this disparity.

Open unemployment is not yet a serious problem in Bhutan, although it has risen steadily from 1.4 percent in 1998 to 2.6 percent in 2004. Youth unemployment in urban areas is, however, assuming quite alarming proportions. Yet, it must be acknowledged that although it is important to tackle the problem of youth unemployment, finding jobs for the unemployed youth will make only a tiny dent into the problem of poverty.

The key to tackling the problem of poverty in Bhutan lies not so much in creating jobs as in improving the quality of employment. In a country where the population is small and labour is scarce, what really matters is making work more rewarding for the labourer. It is this understanding that informs the evaluation of macroeconomic policies and the formulation of a long-term development strategy attempted in this report.

CHAPTER 4

FISCAL POLICY

4.1 Major Features of the Fiscal Regime

Although planned development commenced in Bhutan with the launching of the First Five Year Plan in 1961, modern public finance practices were developed much later. The first tentative steps towards setting up a modern public finance system in Bhutan were taken in the early 1970s with the launching of the Third Five Year Plan. The budget during that period was, however, almost entirely dependent on Indian grants, supplemented by royalties from the use of forest resources. The taxation system was rudimentary, still emerging from the feudal era of taxation in kind. An important landmark in the development of public finance in Bhutan was the introduction of a corporation income tax in 1982, which marked the beginning of new era in which domestic revenue would become an increasingly important source in financing the budget. This trend was further strengthened with the commissioning of the Chhukha hydropower project in 1986, as the dividends and taxes extracted from the project became the single most important source of domestic revenue.¹⁵

It would be apt to say that it was at that point that fiscal policy and budget management became a serious affair in Bhutan.¹⁶ Since that time, the fiscal regime of Bhutan has come to acquire a number of very distinctive features. First, the size of fiscal operations is exceptionally large by South Asian standards. Given the low level of development of the private sector, the government has traditionally played an important role in the Bhutanese economy—not only in providing infrastructure and social services but also in producing economic goods and services.

¹⁵ *In the second half of the 1980s, dividends yielded by the Chhukha project contributed some 38 percent of all domestic revenue.*

¹⁶ *Coincidentally, the fiscal year of Bhutan was also changed from April-March to July-June at that point in time, in 1987/88, heralding the modern era of public finance.*

Of the various production activities undertaken by the government, the expenditure on large hydropower projects are kept outside the budget (although the dividends and taxes earned from the projects are included in the revenue side of the budget). In spite of this exclusion, government expenditure has accounted for over 40 percent of GDP in recent years, making the relative size of the government in Bhutan by far the largest in South Asia.

Second, the large size of the government budget is sustained to a considerable degree by foreign assistance, of which the major share comes from India. During the last five years, for example, foreign grants and loans (excluding loans for the major hydropower projects) contributed nearly 45 percent of the total budgetary expenditure. In fact, of the remaining 55 percent that was contributed by domestic revenue the majority of this was also derived indirectly from foreign assistance. This is because the bulk of the revenue has come from taxes and dividends of hydropower projects, for which the investment fund came almost entirely from outside Bhutan (in the form of loans, mostly from India). Thus, directly and indirectly, it is foreign grants and loans—essentially, Indian grants and loans—that underpin almost the whole of the government budget.

Third, the government of Bhutan's fiscal stance has been prudent in the sense that the budget deficit has been kept within control most of the time. This has been achieved by consciously adopting a two-pronged fiscal strategy that (a) tries to finance current expenditure almost entirely from domestic revenue and (b) adjusts capital expenditure in accordance with the availability of foreign resources. The first prong of this strategy helps retain control over current expenditure, by taking advantage of the fact that the flow of domestic revenue is fairly predictable, based as it is largely on taxes and dividends extracted from public corporations. The second prong ensures that capital expenditure also remains under control. Any anticipated shortfall in foreign assistance gets absorbed by cutting down capital expenditure. The net result has been, until very recently, a budget deficit of less than 1 percent of GDP. In the last few years, the deficit has risen uncharacteristically to 8-9 percent of GDP—not, however, due to any profligacy on the part of the government, but because of unexpected delays in the disbursement of grants.

Finally, the fiscal regime of Bhutan exhibits a number of distinctive pro-poor features. The most prominent examples include (a) high levels of expenditure on social sectors such as health and education, absorbing over a quarter of total expenditure, (b) a serious attempt at fiscal decentralization, which enables locally elected bodies to spend nearly a fourth of the total budgetary resources at the local level—mostly on education and health—in accordance with locally determined priorities and (c) trust funds dedicated for health, education and environment.

The remainder of this chapter elaborates on the features of the fiscal regime described above. Section 4.2 shows the major budgetary trends over time. Section 4.3 analyses the structure of government revenue and provides a brief description of tax reforms undertaken in recent years. Section 4.4 looks at domestic resource mobilization and the contributions of different economic sectors to total domestic revenue while Section 4.5 deals with the expenditure side of the budget and focuses on sectoral allocation pattern as well as fiscal decentralization. Section 4.6 examines the issues of budget deficit and public debt and Section 4.7 summarizes the main findings.

4.2 Recent Budgetary Trends

The overall budgetary trends for the period 1990/91-2003/04 are shown in Table 4.1. Throughout the 1990s, total revenue (including both domestic revenue and foreign grants) as well as total expenditure remained fairly stable at round 40 percent of GDP. The stability of the budgets size implies that both revenue and expenditure increased rapidly in real terms in tandem with the reasonably rapid growth of GDP that occurred in the 1990s. This was helped by the fact that the inflow of foreign grants, mostly from India, kept pace with the growth of GDP. However, domestic resource mobilization did not lag behind either. It may be noted that domestic revenue as a percentage of GDP also remained stable (at around 22 percent), which implies that a constant fraction of additional income generated by rapid growth was systematically ploughed back into the government exchequer so as to permit rapid growth of public expenditure.

Table 4.1 Budgetary Trends: 1990/91-2003/04
(Periodic average annual figures as percentage of GDP)

	1990/91–1994/95	1995/96–1999/2000	2000/01–2003/04
Revenue and Grants	40.04	41.65	35.24
Revenue	22.24	22.68	20.15
Tax	6.60	8.78	10.17
Non-tax	15.64	13.90	9.97
Grants	17.81	18.96	15.09
Expenditure	40.23	42.69	41.76
Current	21.03	19.91	18.73
Capital	19.20	22.79	23.03
Overall deficit	-0.19	-1.05	-6.52
Foreign loan	0.66	2.02	4.98
Domestic deficit	-0.47	-0.97	1.53
Borrowing	-0.07	-0.10	-0.40
Monetization	-0.39	-0.87	1.62

Source: Budgetary figures are from RMA (2001, 2004) and ADB (2000, 2005a) and GDP figures are from NSB (2004) and RMA (2005).

It is also worth noting that the size of the government's budget, relative to GDP, is exceptionally high in Bhutan when compared to other South Asian countries. The size of a typical budget in other South Asian countries during the same period varied from 15 to 20 percent of GDP, with only Maldives attaining a relatively high figure of around of 30 percent. While generous inflow of Indian grants has undoubtedly helped Bhutan to maintain a large budget, domestic resource mobilization has also played a role. The domestic revenue ratio of around 22 percent of GDP is in fact quite high for a low-income country like Bhutan. In Bangladesh, for instance, the ratio was less than 15 percent throughout the 1990s.

One of the reasons why Bhutan has been able to maintain a high domestic revenue ratio is its ability to draw upon an unusually large source of non-tax revenue. In the 1990s, the better part of

domestic revenue came from non-tax sources, in the form of dividends from various corporations in which the government held the majority share. By contrast, the tax effort was very weak. Tax revenue as a percentage of GDP—averaging about 8 percent in the 1990s—was actually one of the lowest in South Asia. The tax effort has been improving slowly over time, and during the period 2000/01-2003/04 tax revenue went so far as to even marginally exceed non-tax revenue. It should be noted, however, that a part of the tax revenue also came from public enterprises in the form of corporate income tax. In view of the overwhelming importance of the combined tax and non-tax revenue extracted from what are essentially natural resource based public enterprises, it is fair to say that the fiscal system of Bhutan is predicated more on the extraction of rents from the use of its natural resources than on the income generated by its labour and capital.

The overall fiscal stance of Bhutan has been remarkably prudent. The current expenditure ratio, which was maintained at around 20 percent of GDP in the 1990s, closely tracked the domestic revenue ratio, and generally remained slightly below it, yielding a small revenue surplus. This was the outcome of a conscious policy to constrain the growth of current expenditure in line with the availability of domestic revenue, leaving capital expenditure to be financed mostly by foreign resources.

The policy of keeping current expenditure in line with domestic revenue and letting the size of the capital budget be determined by the availability of foreign resources has resulted in a rule-based system of fiscal management, cutting out the scope for discretionary lapses into fiscal irresponsibility. As a consequence of adhering to this rule-based system, Bhutan is able to boast of a much more prudent management of its fiscal regime than is typical of other low-income countries. This is evident from the fact that the overall budget deficit was on average kept below 1 percent of GDP throughout the 1990s.

In recent years, the government has found it increasingly difficult to maintain the overall level of public expenditure. While the absolute size of public expenditure has continued to grow in real terms, its relative size (as share of GDP) has declined slightly from 43 percent in the second half of the 1990s to 42 percent in the subsequent four years. This is because revenues have fallen. Domestic revenue fell slightly as a percentage of GDP, and the relative size of grants fell sharply—from an average of around 19 percent of GDP in the second half of the 1990s to only around 15 percent during the period 2000/01-2003/04. The combined figure of revenues and grants fell well short of expenditure, with the result that the overall budget deficit has increased sharply from just over 1 percent of GDP in the second half of the 1990s to over 6 percent of GDP in the next four years.

Rising overall budget deficits have increasingly been financed with the help of external loan, which have risen from negligible proportions in the early 1990s to almost 5 percent of GDP during the period 2000/01-2003/04. But loans have not been able to bridge the gap entirely. As a result, domestic deficit financing has also increased sharply. In the 1990s, Bhutan actually had a domestic surplus on the average, but during the period 2000/01-2003/04 the deficit shot up to 1.5 percent of GDP.

4.3 Financing of Budgetary Expenditure

Historically, taxes were collected in Bhutan mainly in the form of agricultural produce or as labour contribution, and the burden of both was quite heavy. The levy on produce was on an average one fourth of production of each farming family and labour contribution amounted to about two months' labour for every adult. With the launch of the Five Year Plans, cash taxes were introduced for the first time, based on the type of landholding and livestock. However, taxes in cash remained paltry in the 1960s, contributing only about 1 percent of the total plan outlay of the Second Five Year Plan. However the practice of labour contribution continued and formed a significant input into construction activities in the first two Five Year Plans, although it is difficult to estimate quantitatively its contribution during this period.

A modern taxation system began to emerge at the beginning of the Third Five Year Plan period (1972-1977), but non-tax revenue continued to dominate, accounting for over 80 percent of total revenue. The importance of taxation increased sharply in the 1980s when a corporation income tax of 30 percent was introduced. By that time a number of public sector commercial enterprises were set up in manufacturing, tourism and banking. Taxation of corporate income thus emerged as an important source of revenue.

Yet, despite all of this, domestic resources constituted only a small fraction of budget outlay until the mid-1980s. In the first half of the 1980s, for example, foreign resources (mainly grants from India) underpinned over 70 percent of Bhutan's budgetary expenditure. Such overwhelming dependence on foreign resources followed from the low level of development of the Bhutanese economy, on the one hand, and the geopolitical strategy of India, on the other hand. India hoped to keep Bhutan firmly within its sphere of influence. Over time, however, the preponderance of foreign assistance has come down significantly. The newfound revenue from the Chhukha hydropower project commissioned in 1986 enabled Bhutan to raise the contribution of domestic revenue in total expenditure from less than 30 percent in the first half of the 1980s to over 40 percent in the second half.

The contribution of domestic revenue increased further in the 1990s, as periodic increases in the price of electricity sold to India enabled Chhukha to yield an ever-increasing amount of revenue. Domestic revenue also continued to increase as indirect taxes became an even more important source of revenue with the expanding use of sales tax. In the process, domestic revenue became a bigger source of financing than foreign resources—its contribution to total expenditure rising to an average of 54 percent for the decade as a whole (Table 4.2). Its contribution has dipped to less than half during the period 2000/01-2003/04, due mainly to a relative decline in non-tax revenue, but this is more than likely going to be reversed in the near future by the additional revenue expected from the soon to be commissioned Tala hydropower project.

Table 4.2 Financing of Budgetary Expenditure
(Periodic average annual figures: as percentage of total expenditure)

Source of Financing	1990/91–1994/95	1995/96–1999/2000	2000/01–2003/04
Domestic revenue	55.27	53.13	48.25
Tax	16.39	20.57	24.36
Non-tax	38.88	32.56	23.89
Foreign resources	45.88	49.14	48.08
Grants	44.26	44.42	36.15
Loan	1.63	4.72	11.94
Deficit financing	-1.16	-2.27	3.67
Domestic borrowing	-0.18	-0.23	-0.95
Monetization	-0.97	-2.04	3.89
Total	100.00	100.00	100.00

Source: Estimated from RMA (2001, 2004) and ADB (2000, 2005a)

While the relative importance of domestic and foreign resources has not changed much over the last decade and a half, the relative importance of their respective components has undergone significant changes. Of the two components of domestic revenue—tax and non-tax revenue—taxation has become an increasingly important source of financing the budget, while the relative importance of non-tax revenue has declined. Thus, the contribution of taxes to total budgetary expenditure increased from a mere 16 percent in the first half of the 1990s to 21 percent in the second half of the decade and further still to a little over 24 percent during the period 2000/01–2003/04. Over the same period, the contribution of non-tax revenue declined from 39 percent to just below 24 percent. Thus, for the first time since Chhukha was commissioned in 1986, taxation has overtaken non-tax revenue, albeit marginally, as the more important source of financing the budget. This situation will soon change as the dividends from the Tala project begin to stream in, but there is no doubt about the upward trend in the role of taxation in Bhutan’s fiscal regime.

The relative importance of the grant and loan components of foreign resources has also changed significantly. The contribution of grants to overall budgetary financing has gone down from 44 percent in the first half of the 1990s to just over 36 percent during the period 2000/01–2003/04. Over the same period, the contribution of loans has soared from a meagre 1.6 percent to 12 percent. While this can partly be explained by unexpected delays in the disbursement of grants in recent years, it is mainly a consequence of a deliberate policy on the part of the donor community to replace grants with low-cost loans. This tendency is likely to be strengthened in the coming years given that the donor community has been arguing that in view of the vastly increased revenue expected from Tala, the government of Bhutan should be graduating slowly from exclusive dependence on grants to low-cost loan financing. Despite the fact that these are genuinely low-cost loans, this substitution of loans for grants has a potentially worrying implication for the debt burden, which is discussed more fully below.

Because of the traditionally cautious approach to macroeconomic management, deficit financing has never been an important source of resource mobilization in Bhutan. On the contrary, the budget generated a small domestic surplus in the 1990s, which helped to pay off some old debts and build up cash balances. In recent years, however, deficit financing has emerged as a visible, if as yet not a huge, phenomenon. During the period 2000/01-2003/04, deficit financing has on the average contributed some 3.6 percent of total budgetary expenditure, mostly through monetization (that is to say, by drawing down cash balances) rather than through domestic borrowing.

A deficit of this magnitude is, however, still not very high in comparison with other developing countries. Moreover, the fear that monetization of a growing fiscal deficit will lead to inflationary pressure is less serious in Bhutan than in most other developing countries. This will be explained further below, but is in part because inflation in Bhutan is determined not so much by its money supply as by the inflationary situation in India. However, this is only strictly true for tradable goods. The prices of non-tradables are bound to be influenced by money supply, and to that extent deficit financing may still be a matter of concern. More importantly, excessive money supply might make it hard for Bhutan to maintain the one-to-one parity of its currency with the Indian rupee, which has served Bhutan so well in the past. For that reason the government of Bhutan should be wary of letting the deficit soar beyond the level it has already reached.

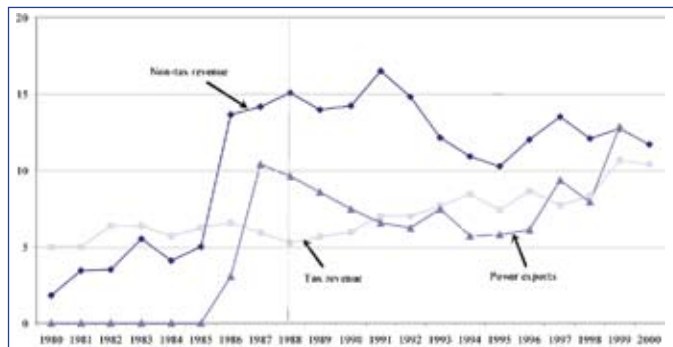
One potentially redeeming feature is that with the implementation of the Tala hydropower project, government revenue is expected to increase greatly, which should help rein in the budget deficit. However, the pressure to spend the new-found resources on essential infrastructure and social services will also be high, especially in view of the possibility that donors might scale down their grants, which have so far been the main source of capital expenditure. In that event, the pressure on budget deficit may even mount rather than ease.

4.4 Domestic Resource Mobilization

The government of Bhutan is fully conscious of its need to reduce excessive dependence on foreign resources and to strengthen its efforts for domestic resource mobilization. The imperative for generating more resources internally is becoming even more pressing as the donor community seeks to substitute loans for grants. With its very limited ability to earn hard currency, servicing of any significant increase in hard currency loans will prove to be extremely difficult for Bhutan. This makes domestic resource mobilization a matter of even greater urgency than ever before.

Traditionally, Bhutan has relied heavily on non-tax revenue as the major source of domestic resource mobilization. Dividends earned from public sector enterprises and royalties from the use of natural resources have been the main source of non-tax revenue. As noted before, with the commissioning of the Chukha hydropower project in 1986, non-tax revenue assumed even greater importance in the second half of the 1980s and the early 1990s. A high correlation between government non-tax revenue and power export proceeds can be seen from Figure 4.1.

Figure 4.1 Government Tax and Non-tax Revenues and Power Exports (as percentage of GDP)

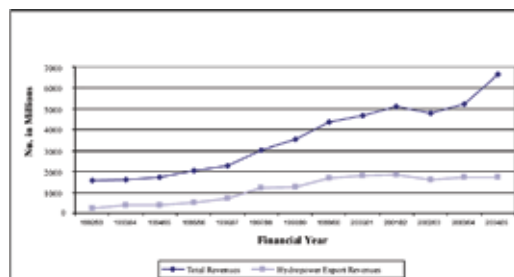


Source: World Bank (2002a).

In addition to non-tax revenue, the hydropower projects also generate a substantial amount of tax revenue through the corporation income tax introduced in 1982. Combining their contribution through tax and non-tax revenue, hydropower projects turn out to be the single most important source of revenue for the government of Bhutan. The statistics on budget operations for the period 1981/82-1986/87 shows that in the financial year 1987/88 following the commissioning of Chhukha, there was a sharp increase in government revenues and, in terms of a percent of GDP, there was a jump of total domestic revenues from around 11.9 to 21.2 percent of GDP. Although the actual extent of the impact of Chhukha on these revenues is not known, it can be assumed that this growth was the result of the commissioning of the Chhukha hydropower plant.

Since then, and over the period leading up to the end of the Eighth Five Year Plan (1996/97-2001/02), for which actual data is available, the energy sector continued to be a major contributor to government revenues; revenue increased in tandem with increases in the export price to India as well as domestic tariff rates. The average share of hydropower revenues to total domestic revenues for the period 1992/93-2001/02 was around 30 percent. Not surprisingly, the growth in hydropower revenues is linked to the revision of the export price of electricity to India. More importantly, as can be seen from Figure 4.2, there has been a strong correlation between the growth of revenues from the export of hydropower revenues and total domestic revenue performance.

Fig 4.2 Comparison of Domestic Revenue and Hydropower Revenue Performance (1992/93-2004/05)



Source: Department of Budget and Accounts, Royal Government of Bhutan.

In the first two years of the Ninth Five Year Plan, the contribution of hydropower revenues to total domestic revenues was marginally higher at 31 percent. It is expected to rise sharply by Nu. 743 million in 2005/06 with the full impact of the recent electricity export tariff hike of around 33

percent, from Nu. 1.50 per kWh to Nu. 2 per kWh. Consequently, the share of contribution of the power sector to total domestic revenues is expected to increase to around 42 percent.

The hydropower sector's contribution to domestic revenues will be further boosted by around Nu. 2.6 billion a year with the commissioning of Tala in March 2006 (at a tariff of Nu. 2 per kWh). At the current export price, total revenue from the hydropower sector is projected to account for around 50 percent of total domestic revenues in 2006/07. In absolute terms, the contribution of the hydropower sector to total domestic revenues is expected to more than double following revenue inflows on account of Tala. As a percent of GDP, domestic revenues are projected to grow from around 19 percent in the financial year 2005/2006 to around 25 percent in the financial year 2007/2008, the first year of the Tenth Five Year Plan.

While hydropower remains the single most important source of revenue, other public sector enterprises also make a sizeable contribution. It is interesting to note that the bulk of the revenue—whether from tax or non-tax sources—comes from the government undertakings. In the form of dividends and corporate income tax, the top ten agencies contributed more than 53 percent to total revenue in 2003/04. The Chhukha Hydropower Corporation (CHPC) alone contributed 37 percent to the total revenue. The second largest contributor is the Department of Tourism (DOT); contributing about 3 percent to the total revenue, primarily in the form of royalties on tourism. By contrast, the private sector is making a negligible contribution, reflecting the low level of development of private enterprise in Bhutan. Currently, the top ten private sector companies are making about a 1.7 percent contribution to total revenue.

Looking at relative contributions of different economic sectors to total domestic revenue, the electricity sector, not surprisingly, easily comes out on top. As can be seen from Table 4.3, electricity's relative contribution has gone down slightly from 44 percent in 1999/2000 to 38 percent in 2003/04. But its share is set to rise to 40 percent in 2005/06 as a consequence of the recent increase in electricity export tariff from Nu. 1.50 per kWh to Nu. 2 per kWh. With the commissioning of the Tala project in 2006, its share is expected to go up even further to 50 percent.

Table 4.3 Sector-Wise Contribution to Revenue
(as percentage of total revenue)

Sector	1999/2000	2000/01	2001/02	2002/03	2003/04
Electricity	44.8	44.6	43.5	35.3	37.8
Trade	21.1	15.4	22.8	31.9	24.1
Service	20.2	16.3	15.3	17.4	17.4
Primary sector	3.2	3.5	3.8	2.4	3.0
Manufacturing	4.9	3.9	5.1	6.4	5.5
Finance	5.8	16.3	8.1	4.4	4.0
Others	-	-	1.4	2.2	8.2
Total	100	100	100	100	100

Note: Figures based on gross collections.

Source: Various Issues of Revenue Reports, Department of Revenue and Customs, Ministry of Finance.

Among the other sectors, trade is emerging as a strong force, contributing 24 percent of total revenue in 2003/04. It includes revenue from Bhutan sales tax, excise duty refund from India, corporate and business income tax and import duty. The growing contribution of the trade sector indicates the rising importance of the private sector, both as an economic actor and as a potential source of expanding the revenue base.

The indication of a slowly expanding tax base is also evident from the changing composition of domestic revenue. As noted earlier, the relative importance of non-tax revenue has come down over the years as the taxation system has developed. Direct taxes, in particular, are playing an increasingly important role. While in the first half of the 1990s, direct taxes accounted for less than 12 percent of total domestic revenue, during the period 2000/01–2003/04 their contribution was as high as 36 percent (Table 4.4). Since much of this direct tax comes from hydropower projects, in the form of corporate income tax, the rising importance of direct tax does not by itself indicate a widening of the revenue base. However, with the emergence of new public and private enterprises outside the power sector the potential for expanding the revenue base is increasing over time.

Table 4.4 Composition of Domestic Revenue
(Periodic average annual figures, as percentage of total revenue)

	1985/86–1989/90	1990/91–1994/95	1995/96–1999/2000	2000/01–2003/04
Tax revenue	41.7	37.0	42.2	53.2
Direct tax	14.1	11.5	26.6	35.4
Indirect tax	27.6	25.5	16.5	17.8
Non-tax revenue	58.3	63.0	56.9	46.8
Total revenue	100.0	100.0	100.0	100.0

Source: Estimated from RGOB (1992), RMA (2001, 2004) and ADB (2000, 2005a).

Table 4.5 provides a detailed breakdown of different sources of tax revenue. In the early part of the 1990s, indirect taxes were more important than direct taxes—their relative contribution to total tax revenue being 62 and 38 percent respectively. One decade later, their ranking has completely reversed. Direct taxes now account for 66 percent of tax revenue and indirect taxes for only 34 percent.

Table 4.5 Sources of Tax Revenue
(Periodic average annual figures, as percentage of total tax revenue)

	1992/93–1996/97	1999/2000–2003/04
Direct tax	38.35	65.98
Corporate income tax	29.41	37.33
Business income tax	5.82	11.15
Personal income tax	1.07	3.21
Others	2.06	14.30
Indirect tax	61.65	34.01

Bhutan sales tax	18.40	15.25
Excise duty	31.48	14.31
Import duty	3.72	3.89
Export tax	1.40	0.31
Others	6.65	0.26
Total tax	100.00	100.00

Source: The figures for 1992/93-1996/97 are from RGOB (1997) and the figures for 1999/2000-2003/04 are from Department of Budget and Accounts, Revenue Reports, various issues.

Direct taxes are, for the most part, of three kinds: corporate income tax, business income tax and personal income tax. Of these, corporate income tax is by far the most important source of revenue, accounting for as much as 37 percent of total tax revenue during 1999/2000-2003/04. By contrast, personal income tax is still a negligible source of revenue in Bhutan, accounting for less than 4 percent of total tax revenue during 1999/2000-2003/04, although its contribution is slowly rising over time.

Personal income tax was introduced for the first time in January 2002, replacing the earlier salary tax, with a view to extending both the coverage and the progressiveness of personal income taxation. The salary tax was a flat rate of 2 percent tax on income earned by way of salaries and wages. By contrast, the reach of personal income tax was extended beyond salaries and wages to cover other sources of income such as rent, interest and dividend income. In addition agricultural income—from three major commercial commodities (apple, orange and cardamom)—has also come under the purview of this tax. No less important, the tax was made significantly progressive by replacing the flat rate of 2 percent with variable rates in the range of 10-25 percent. Recently, however, the potency of the tax has been reduced by scaling down the rates by 40 percent, so that the rates are now in the range of 6-15 percent. This was done in the hope that reduced rates will encourage greater tax compliance and help promote a culture of tax payment. To what extent this hope materializes remains to be seen. One potential problem, however, is that since even the highest marginal tax rate (15 percent) is way below the rate (30 percent) at which both corporate and business incomes are taxed, there might a temptation to convert the latter two into personal income through innovative accounting practices.

Personal income tax has remained low mainly due to the low level of monetization of the economy. As most transactions in rural areas still take place by barter, the amount of cash income earned by individuals has not been deemed large enough to warrant a high rate of personal income taxation. Instead, as befits a barter economy, adult individuals are required to pay a labour tax in the form of two month's labour. Although the flat rate of two month's labour applies to everyone irrespective of one's financial status, there is an inherent element of progressiveness in the tax in the sense that richer people have a higher opportunity cost of time. But from the point of view of the government, this is a flat poll tax, for after all, two month's labour is just two months' labour, no matter who it comes from. The tax is also cumbersome in terms of administration. But whatever the case may be, the tax is fast becoming redundant with the growing monetization of the economy. Already, those who can afford the cash are allowed to commute the labour tax into cash payment. This trend is likely to gather pace in the coming years, paving the way for

replacing the labour tax by a more substantial personal income tax. For the moment, though, the labour tax still remains an important levy. However, as this tax is collected and utilized by local administrations, it does not figure in the budgetary allocations. To that extent, the size of revenue (as well as expenditure) is understated by budget figures.¹⁷ Another category of tax called rural tax, which is levied on certain categories of land and livestock holdings, is also administered at the local level.¹⁸

Along with reducing the rates of personal income tax, the impact of corporate and business income tax has also recently seen a softening. Generous tax holidays have been granted to private enterprises in the budget of the financial year 2002/03. The objective of this move was to promote the development of the fledgling private sector in Bhutan. To this end, further incentives were provided to the private sector through a number of measures that included removal of sales tax and customs duty on plant and machinery; removal of sales tax and customs duty for raw materials used by convertible currency earning businesses; and exemption of corporate and business income tax on income earned in convertible currency by manufacturing industries, Information Technology industries or services and agricultural production.

The quantitative significance of these incentives is quite large in terms of forgone revenue. The revenue that was forgone on account of the tax holidays currently enjoyed by 11 firms in 2004 was estimated at Nu. 32 million. Similarly the forgone revenue on account of customs duty and sales tax exemption on raw materials is estimated at Nu. 327 million and the import duty forgone on import of plant and machinery amounted to Nu. 804 million. Hence the total forgone revenue on account of the exemptions is Nu. 1163 million in 2004 (MOF 2005). This amount is quite significant as it corresponds to 17 percent of total domestic revenue for 2004/05.

Two major indirect taxes are excise duty and the Bhutan sales tax. Excise duty is levied ad valorem only on domestically produced alcoholic beverages—the rate varying in the range of 20-60 percent. The Bhutan sales tax was initially introduced as a compensatory tax on Indian imports that were exempted from custom duties as a consequence of Bhutan's free trade agreement with India. Currently, the tax is imposed on imports from all countries and also on some of the domestic products and services such as cement (5 percent), hotel and restaurant services (10 percent) and entertainment services (30 percent). The authorities are contemplating the feasibility of converting the current sales tax into a general sales tax with the features of a value-added tax.

Traditionally, excise taxes were by far the most important form of indirect tax in Bhutan. In the early 1990s, for instance, its contribution to total tax revenue was 75 percent higher than that of the sales tax, but over time its relative importance has come down. During 1999/2000-2003/04, excise and sales taxes contributed roughly equal amounts of revenue—each accounting for 14-15 percent of the total tax revenue (Table 4.5).

¹⁷ *The Seventh Five Year Plan document made a rough attempt to quantify the contribution of labour tax as follows: 'A typical household with a family size of 8.5 may be liable to a minimum about 40 person-days a year of various forms of labour tax, which represents a substantial in-kind contribution to public revenues. If the value of labour is assumed at Nu. 40 per day and the number of households liable to pay labour tax is about 54,000, the value of labour tax would exceed Nu. 86 m a year' (RGOB 1992: Chapter 2, p. 9). This amount is equivalent to 5 percent of the total domestic revenue or 20 percent of the tax revenue collected in cash in 1992/93, the first year of the Seventh Five Year Plan.*

¹⁸ *These taxes are discussed in more detail in Annex 1 on decentralization.*

Import taxes, by contrast, have contributed less than 4 percent of total revenue over the years. This is in sharp contrast with the experience of most other developing countries where import taxes often constitute the most important source of revenue for the government. The reason for the relative insignificance of import duty in Bhutan is simply that an overwhelming proportion of Bhutan's imports originate from India, with whom Bhutan has a free trade agreement.

It should be noted, however, that the negligible contribution of import duty does not imply that revenue earned from internationally traded goods is equally negligible. As noted earlier, the Bhutan sales tax is essentially a trade tax, imposed originally on Indian imports, designed to offset the corresponding sales tax in India, and subsequently extended to imports from other countries as well. It is difficult to estimate exactly how much of the sales tax is derived from imported goods, but it would certainly amount to a sizeable proportion. In addition, there is also a small amount of export taxes to be taken into account. The share of trade tax in total revenue would, therefore, be more substantial than the 4 percent share attributed directly to import duties alone.

4.5 Trend and Structure of Budgetary Expenditure

Since 1990, total budgetary expenditure has increased in real terms at roughly the same rate as GDP, although there have been some year-to-year fluctuations. As a result, the share of budgetary expenditure in real GDP has remained stable at around 42 percent for the past decade (Table 4.1). This figure excludes, however, the large expenditures incurred for large-scale hydropower projects, which are kept outside the budget, although the revenues earned from them are included in the revenue side of the budget.

The composition of government expenditure in terms of current and capital expenses has shown some significant change in the last decade.¹⁹ While in the early 1990s (as well as previously), current expenditures accounted for a larger share of the budget, the situation has reversed in recent years as proportionately more resources are being allocated to capital expenditure. The share of capital expenditures has increased from an annual average of 48 percent in the first half of the 1990s to 55 percent during 2000/01-2003/04 (Table 4.6). The increasing importance of capital expenditure reflects the increasing emphasis being placed on improving the infrastructure of the country.

Table 4.6 Shares of Current and Capital Expenditure
(Average annual figures; as percentage of total expenditure)

Expenditure	1990/91–1994/95	1995/96–1999/2000	2000/01–2003/04
Current	51.88	46.27	45.40
Capital	48.12	53.73	54.60
Total	100.00	100.00	100.00

Source: Estimated from RMA (2001, 2004) and ADB (2000, 2005a).

¹⁹ Capital expenditure is roughly equivalent to what is known as development expenditure in other countries, except that it includes a small amount of capital lending.

The trend and pattern of the sectoral composition of expenditure is an important indicator of how fiscal policy is being used to foster economic and social development. Such an analysis is rendered difficult, however, by the fact that actual data on sectoral expenditures are not systematically published or collated. Proposed budgetary allocations are available for most years, but actual figures can sometimes diverge considerably from the original allocations. Nonetheless, combining data on actual, revised or planned allocations for different plan periods, Table 4.7 provides a rough idea of how public expenditure has been allocated to different sectors of the economy over the years. The figures in this table include both current and capital expenditure.

Table 4.7 Sectoral Pattern of Budgetary Expenditure
(Percentage of total expenditure)

	6FYP 1987/88–1991/92	7FYP 1992/93–1996/97	8FYP 1997/98– 2001/02	9FYP 2002/03–2006/07
Social Services	16.4	17.9	17.5	15.8
Health	5	6.7	7.3	8.3
Education	10.9	11.2	10.2	7.5
Economic Services	52.3	46.6	50.8	42.1
Agriculture	15.6	15.7	12	10.1
Trade, Industry, Power	16.2	9	17	10.5
Transport/ Communication	11.7	17.3	17.8	17.7
Public Works	8.9	4.6	4	3.8
General Public Services	31.3	35.5	31.7	42.1
Total	100	100	100	100

Note: 6FYP actual; 7FYP and 8FYP plan outlay; 9FYP revised plan outlay. For 9FYP, figures exclude expenditures incurred by the local administration at dzongkhag and gewog levels.

Source: Estimated from RMA (2001, 2004) and ADB (2000, 2005a)

Before commenting on the figures in Table 4.7, it should be clarified that unlike the previous Plans, the Ninth Five Year Plan allocates a large part (about a quarter) of total expenditure to local administrations to be spent according to their own plans in a move to promote balanced regional development through administrative and fiscal decentralization (this is discussed more fully below). The figures shown for the Ninth Five Year Plan period in Table 3.7 refer only to expenditures incurred at the Central level and not overall expenditure at all levels. As a result, the sectoral allocation pattern for the Ninth Five Year Plan is not strictly comparable with the pattern for earlier Five Year Plans. As we shall see below, the major share of local expenditure goes to the social sectors. This should be borne in mind while interpreting the figures in Table 4.7.

In the three Five Year Plans preceding the Ninth Five Year Plan, roughly half of total expenditure was incurred for economic services, as can be expected in a developing country like Bhutan. In the Ninth Five Year Plan, however, the share of economic services in Central government expenditure went down to 42 percent. Considering that most of the expenditures incurred at the local level go

to social rather than economic sectors, the overall share for the economic sectors must have gone down even more. The allocation for agriculture in particular has dropped to just about 10 percent (of Central government expenditure) in the Ninth Five Year Plan period 2002/03-2006/07.

In order to see which sectors have gained at the expense of agriculture, first note that according to Table 4.7 the share of general public services has gone up sharply from around 31 percent in earlier Five Year Plans to 42 percent in the Ninth Five Year Plan. The 42 percent figure, however, refers to the sector's share in Central government expenditure; as share of overall expenditure, this comes to about 32 percent, which is almost identical to the figures for the two preceding Five Year Plans.

The real gains were made in the social sectors, namely in health and education. Considering the Central expenditure alone, some 16 percent of budgetary expenditure was allocated to health and education during the Ninth Five Year Plan. This figure is slightly lower than the share of about 18 percent claimed by health and education in the preceding two Five Year Plans. It must be borne in mind, however, that out of the one fourth of overall expenditure that is allocated to the local level; most of it goes to education and health. Therefore, if Central and local expenditures are combined, the share of the social sectors is bound to be much larger in the Ninth Five Year Plan compared to the earlier Five Year Plans. But exactly how much larger, is difficult to estimate since statistics on actual expenditures incurred for different sectors at different levels of government are not systematically compiled. What is available, however, is overall sectoral allocations—with Central and local levels combined—for a few recent years. These figures are presented in Table 4.8.

Table 4.8 Sectoral Allocations of Budget Outlay: 2003/04-2004/05

Sector	2003/04			
	Nu. million	%	Nu. million	%
Social Services	2856.4	24.76	3788.7	27.81
Health	n.a.	n.a.	1550.2	11.38
Education	n.a.	n.a.	2238.5	16.43
Economic Services	5846.3	50.67	5363.6	39.38
Agriculture	1450.1	12.57	1488.9	10.93
Roads and communication	1885.9	16.35	2081.3	15.28
Others	2510.3	21.76	1793.4	13.17
General Public Services	2835	24.57	4469.4	32.81
Total	11537.7	100.01	13621.7	100.00

Source: Budget Reports.

The most revealing feature of Table 4.8 is that once the Central and local level expenditures are combined, social sectors are found to have received a far greater share of total budgetary expenditure in the recent years compared to the past. Thus during the period 2003/04-2004/05, the education and health sectors have together received 28 percent of the total expenditure, which is a big jump from the average of 18 percent in the Seventh and Eighth Five Year Plans. The really big difference is found in the education sector, whose share has gone up to 16 percent from around 10 percent, while the share of the health sector has also increased impressively from 7 percent to 11 percent.

This change is primarily due to the large allocation made to the local level administration, which has chosen to devote by far the largest share of their resources to education, followed by health, agriculture and roads. The contribution made by local level expenditure is not immediately evident from these figures as they do not separate out expenditures at the Central and local levels. Another limitation of these figures is that they relate to planned expenditure as opposed to actual expenditure. In order to fill this informational gap, a special effort was made for the purpose of the present study to collect actual expenditure data for the two levels separately as well as combined for one year, 2003/04. The results are shown in Table 4.9.

Table 4.9 Sectoral Expenditure at Different Levels of Government: 2003/2004

	Central		Local		Overall	
	Nu. million	%	Nu. million	%	Nu. million	%
Social Services	1442.1	16.22	1161.2	56.82	2603.4	23.81
Health	687.6	7.74	232.7	11.39	920.4	8.42
Education	754.5	8.49	928.5	45.43	1683	15.40
Economic Services	4131.8	46.49	321.6	15.74	4453.5	40.74
Agriculture	1139	12.81	219.9	10.76	1359	12.43
Trade, Industry, Power	1476.9	16.62	---	---	1476.9	13.51
Others	1515.9	17.06	101.7	4.98	1617.6	14.80
General Public Services	3314.4	37.29	560.8	27.44	3875.1	35.45
Total	8888.3	100.00	2043.6	100.00	10932	100.00

Source: Unpublished data provided by the Department of Budget and Accounts.

It is interesting to note that some 57 percent of expenditure incurred at the local level has been allocated to the social sectors, with education alone taking a share of 45 percent. These figures reflect a program in which vastly higher priority is given to the social sectors at the local level compared to the central level. It is thus evident that the spectacular increase in social sector spending that has occurred in recent years is closely tied to the phenomenon of fiscal decentralization. The government of Bhutan has been putting a lot of emphasis on decentralization as a means of ensuring balanced human development across all its regions. The fiscal aspect of decentralization is already bearing fruit in terms of raising the priority of social sector spending.²⁰

In order to make a proper assessment of the pro-poor impact of social sector spending it is necessary to disaggregate further and to look at expenditure on priority subsectors. It is important to examine, in particular, primary health care in the health sector and primary education in the education sector because it is these subsectors that are most beneficial to the poor. Bhutan's fiscal performance has been quite commendable in this respect as well. It is estimated that approximately 60 percent of the education budget has gone to primary education and 75 percent of the health budget has been spent on primary health care facilities (Tenzing 2004). On the assumption of this breakdown and also assuming the country's population at 600,000 with a growth rate of 2.5 percent per annum, per capita government expenses on priority programmes of the education and health sectors have been estimated and are shown in Table 4.10.

²⁰ See Annex 1 for a detailed discussion of the modalities and experience of decentralization in Bhutan.

Table 4.10 Public Spending in Social Priority Subsectors

	1999/2000	2001/02	2002/03	2003/04	2004/05
Total in US\$ million					
Health and Education	31.95	34	40.57	42.36	56.31
Health	-	-	-	-	26.13
Education	-	-	-	-	30.18
Per capita in US\$					
Health and Education	53.24	53.94	62.79	63.97	82.95
Health	-	-	-	-	38.49
Education	-	-	-	-	44.46

Note: Social priority subsectors refer to primary health care in the health sector and primary education in the education sector.

Source: Estimated from figures quoted in Tenzing (2004).

The combined per capita expenditure on priority health and education sector programmes has gone up over time—from US\$53.25 in 1999/2000 to US\$82.95 in 2004/05. This implies a compound growth of 9.3 percent per annum in the last few years, which comfortably exceeds the growth of per capita income during the same period. Separate estimates for health and education subsectors are only available for 2004/05. In this year, per capita expenditure was US\$38.49 for health priority programme and US\$44.46 for education priority programmes comes to. These figures are significantly above the corresponding figures for other South Asian countries.

4.6 Public Debt

It was noted earlier that the donor community has shown an increasing tendency to substitute concessionary loans for grants. This has tended inevitably to push up the national debt burden. However, the main source of debt burden in Bhutan is not budgetary borrowing but extra-budgetary borrowings undertaken in the last two decades for developing large-scale hydropower projects. The debt stock of the country, which was relatively small before the commencement of hydropower projects, shot up in the later part of the 1990s with the disbursement of loans for hydropower projects such Basochhu (by Austria) and Tala and Kurichhu (by India).

As of December 2004, Bhutan's total stock of public debt amounted to around US\$598 million. The stock of debt has three major components—government concessionary borrowings, commercial borrowings and Indian rupee debt. Bhutan entered for the first time into external commercial borrowing in 1998/99 with commercial borrowing to procuring new jet aircraft for Druk Air. Commercial borrowing, however, remains relatively modest, constituting only 1.5 percent of total outstanding debt in 2003/04. Concessionary official borrowings account for just over 39 percent of total outstanding debt while more than 59 percent is Indian rupee debt, which has been incurred for financing three hydropower projects—Chhukha, Kurichhu, and Tala. The borrowings made in the last few years for Tala—by far the largest hydropower project undertaken so far—have pushed up the debt burden enormously. In 2003/04, the debt-GDP ratio stood at 75 percent, which is very high by South Asian standards.²¹

²¹ Total outstanding external debt as percentage of GDP in 2003 was 34.3 percent for Bangladesh, 19 percent for India,

In order to appreciate the real burden of debt in the context of Bhutan, it is necessary, however, to make a distinction between ‘rupee loan’ and ‘convertible currency loan’. ‘Rupee loan’ is the loan owed to India that can be repaid in rupees earned from export of hydropower and other items to India, whereas the ‘convertible currency loan’ is loan from all other sources that have to be repaid in convertible currency. Since the Indian rupee is not yet fully convertible, the two types of loans cannot be seen as substitutes of each other. In particular, even if Bhutan vastly enhances its earnings of the Indian rupee, that would be no help in servicing the convertible currency loan, which must be serviced out of earnings of hard currency. Hence, the two types of loans must be treated separately for both analytical and policy purposes.

Since Bhutan has very limited capacity to earn hard currency, it is the convertible currency loan that is the major source of concern for Bhutan. In this context, it is somewhat reassuring to note that the recent rise in the debt burden has occurred mainly on account of ‘rupee loan’, rising from 14 percent of GDP in the second half of the 1990s to 36 percent during 2000/01-2003/04 (Table 4.11). As noted above, this sharp rise in rupee loan is explained mainly by the loans taken from India for the Tala hydropower project. Once the project begins to export power to India, however, repayment should not be a serious problem. The debt-servicing ratio for the rupee loan is already very low at only 2 percent of rupee exports. This will certainly rise in the years ahead as the repayment of loans incurred for the Tala project falls due. However, since rupee exports will also increase *pari passu*, the debt-servicing ratio is still expected to remain manageable.

Table 4.11 Public Debt Burden
(Annual average figures)

	1990/91–1994/95	1995/96–1999/2000	1999/2000–2003/04
Debt–GDP ratio			
Convertible currency loan	34.3	25.8	27.6
Rupee loan	24.1	13.5	36.1
Total	58.4	39.3	63.7
Debt-servicing ratio			
Convertible currency loan	32.2	34.1	20.5
Rupee loan	7.9	7.4	2.0
Total	12.9	11.3	4.7

Source: RMA (2003, 2004).

It is the convertible currency loan that needs serious monitoring. The outstanding amount of such loans has declined from an average of 34 percent of GDP in the early 1990s to 28 percent in the first half of the present decade. At the same time, the debt-servicing ratio has fallen from 32 percent of hard currency exports to 21 percent during the same period. But, even after the fall, the ratio remains well above the norm for South Asia, where, with the sole exception of Pakistan, the debt-servicing ratio ranges from around 5 percent to 15 percent of export earnings. Furthermore, the ratio will tend to rise in Bhutan in the years ahead as the donor community increasingly substitutes loans for grants. In view of the inherent difficulties that Bhutan faces in

41.3 percent for Maldives, 55.7 percent for Nepal, 45.4 percent for Pakistan and 56.7 percent for Sri Lanka.

increasing its hard currency earnings,²² any further rise in the debt-servicing ratio for convertible currency loans will be a matter of serious concern.

4.7 Summary

The fiscal regime of Bhutan has come to acquire a number of very distinctive features: (a) the size of fiscal operations is exceptionally large by South Asian standards, (b) the large government budget is sustained to a considerable degree by foreign assistance, of which the major share comes from India and (c) despite a high level of expenditure, budget deficits have been kept within non-inflationary range.

Hydropower projects turn out to be the single most important source of domestic revenue for the Government of Bhutan. Their average share in total domestic revenues was 30 percent for the period 1992/93-2001/02, and is expected to go up to 42 percent following the revision of power export tariff in January 2005, and even higher after the impending commissioning of the Tala project, the largest hydropower project so far.

The fiscal stance of the government of Bhutan has been prudent in the sense that the budget deficit was kept within control most of the time. This has been achieved by consciously adopting a two-pronged fiscal strategy that (a) tries to finance current expenditure almost entirely from domestic revenue and (b) adjusts capital expenditure in accordance with the availability of foreign resources.

The fiscal regime of Bhutan exhibits a number of distinctive pro-poor features. The most prominent examples include (a) high levels of expenditure on social sectors such as health and education, absorbing over a quarter of total expenditure, (b) a serious attempt at fiscal decentralization, which enables locally elected bodies to spend nearly a fourth of total budgetary resources at the local level in accordance with locally determined priorities and (c) trust funds dedicated to health, culture and environment.

Over time, the high allocation to health and education has become even higher, mainly because of the large allocation made to the local level administration, which has chosen to devote by far the largest share of their resources to education, followed by health, agriculture and roads.

Among the economic sectors, the allocation for agriculture has dropped steeply from around 15 percent in the early 1990s to just about 10 percent in the Ninth Plan period 2002/03-2006/07.

Overall, public debt has remained within manageable bounds. The debt-GDP ratio stood at 75 percent in 2003/04, which is very high by South Asian standards, but the redeeming feature is that much of it is rupee loan, which can be serviced reasonably comfortably by the earnings from the export of hydropower to India.

It is the convertible currency loan that needs serious monitoring. The outstanding amount of such

²² The constraints to hard currency earnings are discussed more fully in Chapter 11.

loans has declined from an average of 34 percent of GDP in the late 1990s to 28 percent in recent years. At the same time, the debt-servicing ratio has fallen from 34 percent of hard currency exports to 21 percent during the same period. But, even after the fall, the debt burden remains well above the norm for South Asia, and is likely to go up further as donors seem increasingly inclined to switch from grants towards loans.

CHAPTER 5

MONETARY AND FINANCIAL POLICIES

5.1 Evolution of the Monetary and Financial System

The money economy of Bhutan is historically young. Until about 1960, domestic transactions, especially in rural areas, were carried out almost entirely in barter. Even the transactions between the people and the government (in the form of taxes and transfers) took place in kind. External trade, which was limited mainly to Tibet, was also conducted mainly in barter. It was only in the early 1960s after the border with Tibet was closed in the north and trade links opened with India in the south that money began to be used on a large scale as a medium of exchange. It was not, however, the local coins, which were both non-convertible and in limited supply, but rather the Indian rupee that came to be used for transactions, initially for carrying out trade with India, but gradually for domestic transactions as well.²³ This was the beginning of Bhutan's close integration with the Indian economy.

The Royal Government of Bhutan (RGOB) first issued its own paper currency ngultrum in 1974, and pegged it at par with the Indian rupee. Both currencies existed side by side and were used interchangeably for domestic transactions. But only Indian rupee was used for trade with India. This system of dual currency with a one-to-one exchange rate has survived to this day.

Although the currency was created, there was still no central bank to control money supply or

²³ For a fascinating account of the history of monetization in Bhutan, see Rhodes (2000).

to carry out any kind of monetary policy. A proper monetary system only began to emerge with the establishment of the Royal Monetary Authority (RMA) in 1983 to function as a central bank with the responsibilities of issuing the national currency, management of external reserves and foreign exchange operations. In 1984, the instrument of cash reserve ratio was introduced for the purpose of liquidity control and for prudential purposes. In March 1988, the RMA took over the additional function of banker to the government, by holding the bulk of government deposits, and providing means for financing the government whenever necessary. In November 1992, the Financial Institutions Act was passed by the National Assembly to provide the RMA with the legal framework to issue licenses for financial institutions and to regulate, supervise and inspect their operations. It was at that point that a full-fledged monetary and financial system emerged.

The institutional structure of Bhutan's financial sector is discussed in Section 5.2, followed by a brief overview of the monetary policy framework and recent reforms in the financial sector in Section 5.3. Section 5.4 provides an analysis of recent developments in the monetary and financial sectors, including an analysis of the impacts of reforms. Section 5.5 looks specifically at the issue of microfinance. Section 5.6 summarizes the main conclusions.

5.2 Financial Institutions

The financial sector in Bhutan consists of the Royal Monetary Authority of Bhutan, two commercial banks, the Bank of Bhutan (BOB) and the Bhutan National Bank (BNB), and two non-bank financial institutions the Bhutan Development Finance Corporation (BDFC) and the Royal Insurance Corporation of Bhutan Limited (RICBL). There is also a small stock exchange and a government pension system, namely the Royal Securities Exchange of Bhutan and the National Pension and Provident Fund, respectively.

5.2.1 Bank of Bhutan

The Bank of Bhutan, established in 1968, is the oldest and the largest financial institution in the country. In the early years, its operations were severely handicapped by the limited availability and non-convertibility of the local currency tikchung. The bank really took off in 1971 when a collaboration agreement with the State Bank of India (SBI) allowed SBI to participate in the capital and management of the bank. Under the arrangement, SBI held 40 percent of the bank's shares, while 60 percent were held by the government of Bhutan. A new agreement was signed in 1997 extending the collaboration period to the end of 2001. After that date, the management of the bank was handed over to Bhutanese nationals. At present, the SBI holds just 20 percent of the bank's shares, with the remainder held by the government of Bhutan.

The bank's operations were initially confined to the major urban centers of administration and trade. In 1986, however, a major shift of policy occurred to reorient its activities towards the vast rural sector. A door-to-door survey was conducted in rural areas as a prelude to introducing lending and deposit schemes to the rural community. Accordingly, the branch expansion program was given top priority and there are at present 25 branches and two extension counters, covering 20 dzongkhags of Bhutan.

5.2.2 Bhutan National Bank

The Bhutan National Bank is the only other, commercial bank in Bhutan and the second largest. It started its life as the Unit Trust of Bhutan (UTB), which was established in 1980 as a division of the Royal Insurance Corporation of Bhutan Limited. In 1992, it was turned into an independent financial institution to promote and mobilize small domestic savings, and to channel capital to productive sectors in the economy. With the overall goal of deepening the financial system and generating broader and more competitive banking services, the government converted UTB into Bhutan National Bank on 5 December 1996.

The new bank's equity initially came from the government and the Asian Development Bank (ADB), but with the public offering of its shares in 2003, the shareholding pattern has changed considerably. At present, the government holds only 13.6 percent of ordinary shares, while the public holds 38.6 percent, the National Pension Board holds 25.7 percent (making it the single largest institutional shareholder of the bank), Bhutan Trust Fund holds 9.95 percent, RICBL 2.1 percent, and ADB 10.1 percent of the share capital.

The Bhutan National Bank has made rapid progress in claiming its place in the country's financial sector. Its share of the combined assets of the two commercial banks has risen to 31 percent in 2003, as compared to 14.2 percent in 1997. The bank now possesses 32.3 percent of the total deposits in the country, while its loan portfolio accounts for 53.6 percent of total advances between the two banks.

5.2.3 Bhutan Development Finance Corporation

The Bhutan Development Finance Corporation was established in 1988 with assistance from ADB, with equity participation of RGOB, BOB, RICBL, and RMA, in order to assist the private sector by providing financial and technical assistance for industrial, agricultural and commercial projects. The government holds 87 percent of the paid-up capital of BDFC, while the other three financial institutions share the remaining 13 percent equally. Funding is provided to BDFC by international multilateral and bilateral donor agencies.

The agricultural credit programme of the United Nations Capital Development Fund (UNCDF) and International Fund for Agricultural Development (IFAD), which was initially implemented by RMA, was transferred to BDFC in March 1988, along with all assets and staff of the former Agricultural Credit Division of RMA. Industrial lending activities dominate BDFC's profitability, while agricultural lending, particularly, microfinancing, is its main responsibility. In October 1998, the BDFC issued Nu. 50 million worth of 10-year rural credit bonds for the purpose of providing microcredit to rural borrowers through the Group Guarantee Lending and Saving Scheme (GGLSS). The principal goal of GGLSS is to assist small farmers to increase production and income, and ultimately improve their quality of living. Currently there are 179 farmer groups, consisting of 900 members availing micro-loans under GGLSS. Recently, BDFC joined the Entrepreneurial Development Programme (EDP), a special programme designed to finance small entrepreneurs.

At present, BDFC has 21 offices in the country, covering all the districts. It has also recently introduced a mobile banking facility at the grass-roots level, which is already operational in 120 gewogs. The corporation was not originally designed to function as a deposit-taking financial institution, but its presence all over the country at the grass-roots level has encouraged the authorities to allow it to mobilize small savings.

5.2.4 Royal Insurance Corporation of Bhutan Limited

The Royal Insurance Corporation of Bhutan Limited commenced operations as the first and only insurance institution in 1975 under the Royal Charter, with 61 percent government participation and 39 percent public participation. Its mandate is to underwrite all types of insurance business emanating from Bhutan and also to finance various commercial undertakings and development projects. RICBL's main line of business can be categorized into insurance and finance, as well as real estate and credit cards. The services provided by RICBL under insurance and finance are life insurance, general insurance, rural housing insurance, and group insurance cum saving scheme.

Over time, the institution has evolved so that it not only meets the country's insurance needs but also contributes towards the country's economic development by facilitating finance. With this in mind, the Credit and Investment Department was set up to act as an investment body, which has contributed greatly to housing construction and transportation activities. According to recent estimates, almost 75 percent of the houses in Thimphu, Phuentsholing and other towns were financed by RICBL. In addition, RICBL has also invested a considerable amount in the development of industrial units and trading activities.

5.3 Monetary Policy Framework and Policy Reforms

The overall monetary policy framework of Bhutan can be characterized as something close to a currency board system. The domestic currency, ngultrum, is pegged to the Indian rupee with a one-to-one exchange rate, guaranteed by at least 100 percent reserve backing of all the Ngultrum issued. The existence of the peg has given rise to a monetary policy by default, whose rationale is to maintain price stability through exchange rate targeting. However, unlike other countries that deliberately adopt exchange rate targeting in order to confer credibility to their anti-inflation policy, Bhutan does not have a tradition of high inflation that needed to be countered by such a device. The initial logic of a guaranteed peg with the Indian rupee was not based on the monetary consideration of price stability but on the commercial consideration of facilitating trade with India. But given the existence of the peg, and the government's desire to maintain it on trade facilitation grounds, monetary authorities have no option but to support it. For this reason, exchange rate targeting as practiced in Bhutan is best described as monetary policy by default.

The Royal Monetary Authority recognizes that in light of the pegged exchange rate regime adopted by Bhutan, the scope of Bhutan's monetary policy is limited and confined to the support of the peg. This support is provided through the following measures:

(a) Ensuring the sustainability of the exchange rate arrangement, that is to say, always making

available sufficient rupees on demand for exchange with the ngultrum for payments in India and provision of at least 100 percent reserve backing for all Ngultrum issued;

(b) Confidence-building measures for the ngultrum (for example, credible RMA and government policies);

(c) Sterilizing any persistent growth in liquidity to forestall a possible build-up of inflationary pressures, a weakening of the balance of payments and a contingent effect on the financial market.

Although the policy of supporting the peg emerges as a monetary policy by default, it is argued by RMA that the policy can be justified on monetary grounds as well. This argument is based on the following factors: that close economic and financial relationships exist between India and Bhutan; that there exists a dual currency system in Bhutan with the ngultrum and the rupee circulating freely side by side; and that the system of peg helps maintain confidence in the Bhutanese economy by tying it to the relatively stable monetary conditions in India. The consequence of adopting the policy is that Bhutan has entered into a de facto monetary (currency) union with India, with the inflation and interest rates of the two countries staying close together. Of course, since India happens to be by far the larger partner of this de facto union, it is the inflation and interest rate of Bhutan that track those of India rather than the other way round.

Ensuring the sustainability of the exchange rate arrangement is the principal goal of monetary policy in Bhutan, yet RMA is also concerned with the avoidance of excess liquidity through appropriate monetary and credit management. Excess liquidity of the banking sector has emerged as an important problem in recent years. As of June 2002, the commercial banks were holding excess reserves with RMA equivalent to about 40 percent of their assets. Some excess liquidity has been absorbed by RMA by issuing its own bills, but this is an expensive strategy as it carries a 3 percent per annum cost to RMA. To dampen the growth of excess liquidity and to encourage the banking system to employ its excess liquidity domestically, RMA recently issued a directive prohibiting the opening of fresh deposits across the border, and to absorb excess liquidity from the banking system, it raised the cash reserve ratio to 20 percent in July 2002.

A number of factors have contributed to the problem of excess liquidity, from the side of both demand and supply. The supply side problem has been created by a combination of macroeconomic, industrial, trade and foreign investment policies. Persistent balance of payment surplus, prudent fiscal operation, RMA's limited measures for monetary control and the case-by-case approach to foreign investment approval have all combined to generate a rapid growth of liquidity. The problem of excess liquidity has arisen because the rapid growth of liquidity has not been matched on the demand side by an equally rapid rate of demand for liquidity. This is due to a still very low level of monetization of the economy. The mismatch between supply and demand has been further aggravated by the insufficient capacity of intermediation in the financial sector caused by such things as rigid and conservative credit control systems in the financial institutions and the underdeveloped capital market.

Sterilization of excess liquidity is essential for the health of the economy. Even though the prices of tradables depend largely on inflation in India (because of the exchange rate peg), the prices of non-tradables can still be influenced by domestic liquidity. If liquidity grows rapidly, resulting in a

higher rate of inflation for non-tradables relative to tradables, the effect will be an appreciation of the real exchange rate (as measured by the price ratio between non-tradables and tradables). This will put pressure on the balance of payments by discouraging the production of tradable goods, thereby threatening the very system of the one-to-one peg with the Indian rupee on which the whole economy of Bhutan is predicated. For this reason alone, RMA will have to keep a close watch on excess liquidity even if the overall level of inflation remains low.

Being conscious of this policy imperative, RMA has, with the elimination of quantitative credit controls in the late 1990s, relied increasingly upon more indirect instruments of monetary policy for the purpose of liquidity management. Thus it has resorted to variations in reserve requirements, the sale of central bank bills and the sale of foreign exchange to banks. Through the issuance of short-term central bank bills, RMA also aims to establish a modest money market and to create a frame of reference for interest rates, which, as discussed below, have also been liberalized.

Until 1997, the interest rates were administered by RMA, providing little flexibility to the financial institutions to set their own deposit and lending rates on the basis of their cost of funds, risk of default, operating expenses and yield on assets. In order to create an environment more conducive to the growth of the financial system, RMA partially liberalized the interest rates in October 1997, allowing each institution to determine rates on the basis of the prevailing market conditions. This was only a partial liberalization because the spread between lending and deposit rates continued to be determined by RMA. However, in April 1999, to encourage competition among the financial institutions, RMA abolished the system of spreads, liberalizing the interest rates fully on both loans and advances.

There is yet another dimension of financial liberalization that relates to exchange control. Administrative control over foreign exchange transactions used to be pervasive in Bhutan and to some extent still are today. But in line with the government's programme of liberalizing trade and industrial policies, the RMA Board approved the new Foreign Exchange Regulations in 1997, removing a number of restrictions on foreign exchange transactions, with the aim of eventually moving towards current account convertibility.

5.4 Analysis of Monetary and Financial Developments

5.4.1 Monetization and Inflation

In view of the rather late entry of Bhutan into the world of money, it is important to know how much of the economy has become monetized over the years and at what speed. There are, however, no proper studies on what proportion of economic transactions takes place in cash and what proportion still remains in the domain of barter. The fact that an unknown quantity of Indian rupee also circulates within Bhutan as legal tender makes such estimation even more difficult. Nonetheless, some rough idea about the growth (as distinct from the level) of monetization can be formed by looking at the growth of money supply in relation to GDP.

Table 5.1 shows the ratio of broad money (M2) to nominal GDP for several periods from 1981 to

2004. As can be seen from the table, the supply of broad money amounted to less than 5 percent of GDP in the early 1980s. The ratio increased steadily up to the mid-1990s, and extremely rapidly thereafter. By the period 2000-2004, the ratio increased to over 60 percent of GDP. These figures suggest an impressive speed of monetization of the Bhutanese economy, especially over the last decade or so.²⁴

Table 5.1 Monetization of the Bhutanese Economy: 1981-2004

	1981-1984	1985-1989	1990-1994	1995-1999	2000-2004
GDP at 2000 prices (Nu. million)	6535.33	9587.34	12,142.40	14,909.60	21,103.20
Broad money supply (M2) (Nu. million)	283.30	643.04	1682.38	5539.08	13,031.66
M2/GDP ratio (%)	4.29	6.62	13.74	36.37	61.30

Source: Estimated from RMA (2000, 2004), ADB (1999, 2005a) and NSB (2004a).

Rapid increase in money supply has not, however, led to rapid inflation. This is because a large proportion of the additional money supply has served to integrate an increasing proportion of the barter economy into the cash nexus. As in other South Asian countries, inflation has remained largely under control in Bhutan. Indeed the overall inflationary situation has improved in the last five years compared to the earlier decades. Table 5.2 shows periodic averages of annual inflation rates since 1982 on the basis of two separate indices—the consumer price index (CPI) and the implicit GDP deflator. The two indices sometimes diverge widely for particular years, but when periodic averages are taken, the two indices yield fairly consistent measures of inflation over time.

Table 5.2 Inflation Trends
(Periodic annual average: in percentage)

Price Index	1982-1984	1985-1989	1990-1994	1995-1999	2000-2004
CPI index	11.7	7.4	11.3	7.7	4.1
GDP deflator	9.4	6.0	10.8	9.7	4.4

Source: RMA (2000, 2004), ADB (1999, 2005a) and NSB (2004a).

Table 5.2 shows that the inflation rates fluctuated around an average of 8-9 percent in the 1980s and 1990s. However, since 2000, the average inflation rate has been almost cut in half and now stands at less than 5 percent. It should be pointed out that because of certain changes made in the methodology of calculating CPI, the inflation estimates for the period since the third quarter of 2003 are not strictly comparable to those of earlier periods. The new index is based on a much a larger basket of goods and services and, more importantly, it almost completely reverses the relative weights of food and non-food items, giving a significantly greater weight to non-food items than previously. Nonetheless, there is good reason to believe that the observed decline in inflation after 2000 is not a statistical artefact. The inflation figures for the years 2000-2002, based on the

²⁴ As the money-to-GDP ratio has increased from about 4 percent in the early 1980s to over 60 percent in recent years, it is safe to conclude that the extent of monetization of the economy has increased at least 15-fold during this period, even assuming a constant velocity of circulation of money, and assuming a constant proportion of Indian Rupee being circulated in Bhutan. Since velocity has almost certainly increased as more and more of the economy has entered the cash nexus, the true extent of growth in monetization must be even higher.

old index, also reveal a sharp decline in inflation compared to the preceding two decades. Hence, the decline in inflation observed in recent years must, to a large extent, be genuine.²⁵

The record of keeping inflation rates generally within single digits over a long period of time suggests that Bhutan has on the whole succeeded in maintaining price stability. This stability has not, however, been primarily achieved through active monetary or fiscal policy, but through the exchange rate policy of pegging the local currency ngultrum to the Indian rupee. Bhutan's adoption of a fixed exchange rate with its largest trading partner, by far, ensures that inflation in Bhutan is essentially one of the imported inflation variety, tracking closely the inflation in India (Table 5.3). As Indian inflation has remained relatively low by international standards, so has the imported inflation in Bhutan. In particular, the sharp decline in inflation observed in Bhutan after 2000 reflects an equally sharp decline in Indian inflation at the same time.

Table 5.3 Comparative Inflation in Bhutan and India
(Periodic annual average of CPI growth: percentage)

	1982–1984	1985–1989	1990–1994	1995–1999	2000–2004
Bhutan	11.7	7.4	11.3	7.7	4.1
India	9.3	7.9	10.2	8.9	3.9

Source: RMA (2000, 2004) and ADB (1999, 2005a).

Because of the imported nature of inflation, the movement in the inflation rate bears very little relation with domestic money supply growth in Bhutan (Table 5.4). While inflation is determined largely by inflation in India, the growth in money supply is determined mainly by the net inflow of rupee through the current and capital accounts of the balance of payments. As the government of Bhutan is committed to converting all rupee inflow into ngultrum on a one-to-one basis, any change in rupee reserves is directly reflected in an equivalent change in domestic money supply.²⁶ This implies that there is not much scope for an independent monetary policy in Bhutan, in the sense of using policy to directly influence the level of inflation.

Table 5.4 Growth of Money Supply and Inflation
(Periodic annual average; in percentage)

	1985–1989	1990–1994	1995–1999	2000–2004
M2 growth	22.1	19.9	30.4	14.4
Inflation	7.4	11.3	7.7	4.1

Source: RMA, Annual Reports, various years.

²⁵ Further confirmation of the genuine nature of the decline in inflation can be obtained by noting that Indian inflation, which Bhutanese inflation tracks closely, also declined sharply after 2000 compared to the earlier decades.

²⁶ Strictly speaking this is true only insofar as the reserve-induced change in money supply is not sterilised by RMA. In reality, RMA does attempt to sterilize excess liquidity from time to time but it does not attempt to fine tune its sterilization effort so as to exactly offset the change in money supply induced by changes in reserves, nor does it have the means to do such fine tuning even if it intended to do so.

5.4.2 Interest Rates: Policies and Trends

Lack of control over money supply also means that the RMA has very little leverage over the determination of interest rate in the liberalized financial system that has prevailed since the late 1990s.²⁷ The RMA does attempt ‘moral suasion’ to prod the banks towards a lower interest rate regime and has recently tried to set a frame of reference for interest rates by issuing short-term central bank bills, but the reach of these instruments is rather limited. On the whole, it is the decision of individual banks that has the major bearing on interest rates.

After the regime of administered interest rates gave way to that of market-determined rates in 1997, there was no immediate movement in interest rates. It took a while for the market to respond to the changed environment. The first initiative came on 1 July 2000, when the Bank of Bhutan decided to lower its interest rates on selected loan schemes. Since then, a wider effect of interest rate liberalization can be observed. Table 5.5 shows the (unweighted) average of nominal deposit and lending rates since 1997, the year in which the process of financial liberalization began. As noted above, the rates remained unchanged till 2000; after which there was a downward movement.

Table 5.5 Trends in Interest Rates
(Nominal interest rates; percentages)

Year	Deposit Rate	Lending Rate	Average Spread
1997	8.8	14.2	5.4
1998	8.8	14.2	5.4
1999	8.8	14.2	5.4
2000	8.8	14.2	5.4
2001	8.4	13.9	5.5
2002	8.1	13.7	5.6
2003	6.7	13.6	6.9
2004	5.8	13.5	7.7
2005	5.7	13.2	7.5

Source: RMA (2004, 2005).

The downward movement is most clearly visible in the case of deposit rates. The average interest rate on savings and fixed deposits has come down from 8.8 percent in 2000 to 5.7 percent in 2005. This is quite a steep decline, and is in sharp contrast with the average lending rate which has come down only marginally from 14.2 percent to 13.2 percent over the same period. As a result of these disparate movements between deposit and lending rates, the average interest spread, which was already high at 5.4 percent in 2000, climbed even higher to 7.5 percent.

Although the nominal interest rates have declined in the past five years, this cannot necessarily be taken as an indication that financial liberalization has engendered a genuinely competitive environment in the financial sector. Some decline in nominal interest rates was inevitable in

²⁷ The liberalization is only partial in the sense that only the domestic financial market has been liberalized. Financial transactions with the rest of the world are still heavily controlled.

view of the decline in inflation observed in the last five years. The average inflation rate came down from 7.7 percent in the second half of the 1990s to 4.1 percent over the next five years—a 3.6 percentage point decline. It is interesting to note that the average deposit rate has come down by an almost identical amount—3.2 percentage points—during the same period. As a result, the real interest rate on deposits has remained virtually unchanged.²⁸ In contrast, since the average lending rate has declined by only one percentage point, the real lending rate has actually increased by 2 percentage points.

Thus, the financial institutions have taken advantage of liberalization to keep the interest they have to pay to depositors unchanged in real terms by lowering the nominal rates in line with declining inflation. However, these same institutions have raised the real interest rate they charge the borrowers by reducing the nominal rate far less than what was warranted by the fall in inflation. The interest rate spread, or the margin of intermediation, has increased in consequence in both nominal and real terms. There is, however, nothing in the real economy to suggest that the cost of financial intermediation has increased in Bhutan over the last five years to justify a rising spread. Given the shallowness of the financial market in Bhutan, the spread is understandably high, but the issue here is not why the spread is high but why it has got higher? For that, there is no apparent justification from the cost side.

The only inference one can draw is that, given the non-competitive nature of the financial market in Bhutan, the financial institutions have exercised their market power and raise the profit margin to the maximum level the market would bear. The market was non-competitive before, just as it is now, and no one is suggesting that the market has become less competitive than before. With the onset of liberalization the non-competitive lenders have for the first time been able to exercise their market power; a power they always had but earlier found artificially suppressed by the regime of administered interest rates. In other words, while previously their market power was potential rather than actual, liberalization has enabled them to transform that potential into actual market power.²⁹

The fundamental reason why the financial sector is non-competitive in Bhutan lies in the tension between the scale economies of financial intermediation and the exceedingly small size of the market. As the fixed costs are too high relative to the size of the market, the financial sector operates virtually in a situation of natural monopoly, or rather duopoly in the case of Bhutan. In principle, even a duopolistic market can be fiercely competitive. However, given the long tradition and vastly larger size of one of the two commercial banks (Bank of Bhutan) relative to the other (Bhutan National Bank), the market structure that has emerged is more of the leader-follower type. The Bank of Bhutan sets the trend and the Bhutan National Bank (as well as the two non-bank financial institutions) follows suit, thus making the market non-competitive. The leader-follower behaviour enables both banks to enjoy the rent associated with natural monopoly

²⁸ *The real interest rate is simply nominal interest rate minus the rate of inflation, i.e., what remains of the nominal rate after adjusting for inflation. It is the real interest rate that matters to savers and investors.*

²⁹ *In a competitive market, the nominal interest rates would adjust fully (albeit with a lag) to any change in the rate of inflation—a phenomenon that economists call the ‘Fisher effect’. The fact that the Fisher effect has operated in Bhutan only by half—by adjusting the deposit rates fully to falling inflation but not the lending rates, i.e., in a manner that is to the advantage of financial intermediaries and to the detriment of both depositors and borrowers, is a clear sign of a lack of competition in the market.*

instead of competing it away. The consequence, as we have seen, is the enlargement of the profit margin in the wake of financial liberalization.

5.4.3 Size and Allocation of Domestic Credit

In the wake of financial liberalization, there has also been a strong expansion in domestic credit, especially the flow of credit to the private sector. Overall domestic credit fluctuates rather wildly in Bhutan due to large year-to-year changes in the government's net position with the commercial banks. Since, such changes are not driven by market forces, a clearer picture of what has been happening to domestic credit since the onset of liberalization is obtained by excluding the claim on government from total domestic credit. Table 5.6 shows both the total volume of credit excluding claims on the government, and private sector's share in it (the remainder goes to government corporations and other non-bank financial institutions).

Table 5.6 Expansion of Domestic Credit: 1992-2004
(Excluding claims on the government)

Year	Total (Nu. million)	Private sector (Nu. million)	Private sector share (%)
1992	1195.9	425.8	35.6
1993	1284.4	488.8	38.1
1994	1339.6	485.0	36.2
1995	1290.3	521.5	40.4
1996	1241.8	564.4	45.5
1997	1930.1	1252.3	64.9
1998	1889.9	1301.4	68.9
1999	1849.8	1352.5	73.1
2000	2086.7	1624.3	77.8
2001	2745.1	2308.7	84.1
2002	3404.9	3031.5	89.0
2003	3924.8	3536.6	90.1
2004	5038.3	4599.5	91.3

Source: RMA (2000, 2004, 2005).

It is evident from Table 5.6 that total credit took a sharp upward turn in 1997, the exact year in which financial liberalization was initiated. Moreover, this upward turn can be attributed almost entirely to a correspondingly sharp upward turn in private sector credit. In the five years between 1992 and 1996 total credit (excluding claims on the government) barely grew even in nominal terms—creeping up slowly from Nu. 1196 million to Nu. 1242 million. Over the next seven years, this total increased nearly four-fold to Nu. 5038 million in 2004. Similarly, while the share of the private sector in total credit had risen only slowly between 1992 and 1996—from 36 percent to 46 percent—over the next seven years, the share almost doubled, reaching 91 percent by 2004. This represents an unprecedented acceleration in the growth of credit—both overall and private sector credit—in the short history of Bhutan's financial sector.

While at first glance the timing of this acceleration suggests that the financial liberalization initiated in 1997 might have spurred the expansion of credit, this impression is misleading. As noted above, liberalization did not lead to any substantial decline in nominal lending rates; in fact, the lending rates have actually increased in real terms. There is no reason to suppose that private entrepreneurs would have been induced to borrow more by a lending rate that was rising in real terms. But if they have, nevertheless, borrowed more, the primary reason must lie in some extraneous factors.³⁰ Two such extraneous factors are a construction boom stemming from the ancillary activities associated with the Tala hydropower project and a housing boom fueled partly by rising urban affluence and partly by rapid rural-to-urban migration, especially into the capital city Thimphu.³¹

If liberalization had an effect it would be felt more in the allocation of credit among various sectors. With the removal of quantitative credit control, banks would be expected to allocate credit according to the criterion of profitability. Table 5.7 shows the sectoral distribution of advances made by the financial institutions during the pre- and post-liberalization periods.³²

Table 5.7 Allocation of Advances by Economic Sectors
(Periodic annual average: percentage share)

Sectors	1993–2000	2001–2004
Agriculture	4.3	3.7
Manufacturing	28.5	18.6
Construction	19.7	23.2
Trade and commerce	13.5	21.6
Transport	22.0	12.3
Others	12.0	20.7
Total	100.0	100.0

Source: RMA (2000, 2004, 2005).

During 1993-2000, taken here as the pre-liberalization period,³³ manufacturing sector used to claim the largest share of loans, accounting for some 29 percent of the total, followed by transport (22 percent) and construction (19 percent). This pattern has significantly changed during the post-liberalization period (2001-2004). The construction and trade sectors have emerged as the major destinations of loans, with shares of 23 percent and 22 percent respectively, while the share of manufacturing has dipped to 19 percent. It must be a matter of some concern that the surge in private sector credit that has occurred after liberalization has not been of any great benefit to the manufacturing sector, on which the country pins much hope for spurring productivity growth in the coming years.

³⁰ This is also evident from the fact that private sector credit had already increased sharply during the period 1996-2000 when lending rates had remained static in nominal terms despite liberalization.

³¹ Expansion of credit for the housing sector may have been helped by the fact that the lending rate for this sector was lowered more substantially than for any other sector. To that extent, interest rate liberalization did have a role to play in the expansion of credit, but the quantitative significance of this role relative to that of migration cannot be judged in the absence of a more detailed study.

³² These figures include advances from both banks and non-bank financial institutions.

³³ The year 2000 has been taken as the cut-off line between the two periods, because although the process of liberalization started in 1997 the full effect was first felt only after 2000 with the removal of the administered spread in 1999 and the first initiative taken by the banks to alter the interest rates in 2000.

Another major concern is the share of agriculture. Even before liberalization, agriculture had a very low share of loans from the formal sector—just over 4 percent. After liberalization, this small share has become even smaller, dipping below 4 percent. In view of the low level of monetization of the agrarian economy, the share of loans going to agriculture would be expected to be lower than its share of GDP. Nevertheless, the fact that the share is exceedingly small and getting even smaller indicates continued failure on the part of the Bhutanese institutions and policies to modernize agriculture, which has grave implications for the prospects of poverty reduction.

It is not just the farmers but also entrepreneurs in the small and medium enterprises (SMEs) who are starved of credit. As shown in Table 5.8, credit flows to agriculture and small businesses is not just dismally low but has been declining in the post-liberalization period. The share of agriculture has fallen from 4.4 percent in 2001 to 2.1 percent in 2004. Credit to small entrepreneurs is shown under two headings: EDP loans and loans for Small Business and Artisanal Schemes. The combined loan under these two categories was a paltry 0.31 percent in 2001; by the year 2004, it had fallen further to 0.12 percent.

Table 5.8 Sectoral Distribution of Private Sector Credit
(percentage of total)

Sector	2001	2002	2003	2004
Agriculture	4.44	3.58	3.24	2.08
Tourism and other services	12.40	19.02	10.78	18.39
Manufacturing	18.97	18.36	21.46	21.75
Building and construction	20.80	22.49	27.57	27.48
Trade and commerce	15.01	13.72	15.05	13.21
Transport (heavy)	10.39	7.18	6.11	4.06
Transport (light)	5.88	5.18	5.56	4.18
Personal loans	10.91	9.32	8.20	7.60
Staff loans	0.61	0.66	0.77	0.57
EDP loans	0.12	0.09	0.08	0.06
Small Business and Artisan Schemes	0.19	0.13	0.11	0.06
Loan against shares	0.27	0.28	1.09	0.55
Total (percent)	100.00	100.00	100.00	100.00
<i>Total (Nu. million)</i>	<i>4327.6</i>	<i>5994.3</i>	<i>6812.8</i>	<i>9657.5</i>

Source: RMA, Monthly Statistical Bulletin (various issues).

It should be noted that the shares of agriculture and small entrepreneurs have not declined simply because other sectors have surged ahead. The problem is that the absolute amount of credit going to small entrepreneurs and agriculture has either declined or stagnated, in both nominal and real terms. Thus, the size of agricultural credit was Nu. 192 million in 2001 and Nu. 202 million in 2004, which represents near stagnation in nominal terms and a decline in real terms (after allowing for inflation). For the small entrepreneurs, the absolute size of EDP loan remained stagnant in nominal terms at just over Nu. 5.3 million, but loans under Small Business and Artisanal Scheme declined even in nominal terms from Nu. 8.2 million in 2001 to Nu. 6.0 million in 2004.

The reasons for small entrepreneurs' lack of access to finance are well-known. Due to scale constraints, modern financial sectors such as securities markets and the banking system often ignore the smaller enterprises. Most of the small and medium enterprises in rural areas are not able to borrow from the Bank of Bhutan or the Bhutan National Bank, due to documentation requirements, high collateral requirements (that vary from 33 percent to 100 percent of the value of the loan) and high interest rates. The reach of the banks is also limited to the dzongkhag headquarters and major urban towns.

Hence, SMEs are dependent on secondary sources such as moneylenders and second-tier financial institutions. One such source is BDFC, which specializes in lending for agriculture, microcredit needs and other small- and medium-scale enterprises. However, most rural people prefer to borrow money from local moneylenders, as they do not need collateral and can repay in kind with their farm produce.

In 2003, the government launched a Credit Guarantee Scheme to encourage self-employment for young people with technical and vocational skills. Under this scheme, the successful applicants receive interest and collateral free loans of up to Nu. 300,000 upon completion of a course in small business management. The course intends to target sectors such as hairdressing, tailoring and photography. The course is, however, centered in Thimphu and has limited access for youth in other areas of the country.³⁴

5.5 Provision of Microfinance

The difficulties faced by poor farmers and small entrepreneurs in accessing finance from the formal sector are not unique to Bhutan, although the problem appears to be more severe here compared to that in other South Asian countries. The rest of the region has made significant progress in addressing the problem by devising innovative mechanisms for providing microfinance to small producers outside the framework of, though not necessarily in isolation of, formal finance. Bhutan has only just begun to move in that direction.

The system of microfinance has grown in Bhutan mainly out of reforms of agricultural strategy in the late 1980s. The early years of agricultural development were characterized by the introduction of modern farming methods and the free provision of inputs like fertilizers, pesticides, seeds and extension services. Since the Sixth Five Year Plan (1987-1992), the government of Bhutan placed greater emphasis on the liberalization of markets and self-reliance, resulting in the reduction and eventual withdrawal of most subsidies. With farmers no longer able to rely on subsidies for modern inputs, the need for rural credit to enable farmers to improve farming practices was considered essential for agricultural development. To meet this need, the Agricultural Credit Division with the Royal Monetary Authority was, in 1988, transformed into the Bhutan Development Finance Corporation (BDFC). The BDFC's mandate is to provide credit to rural areas as well as to small- and medium-scale industries.

While BDFC is the main source of microfinance, other institutions such as Bank of Bhutan, Bhutan National Bank and Royal Insurance Corporation of Bhutan Limited are engaged in extending agricultural loans on a larger scale to commercial undertakings. Unlike in other countries,

³⁴ A fuller discussion of the problems and constraints faced by SMEs in Bhutan can be found in Annex 4.

however, there are no NGOs or quasi-financial institutions providing microfinance services in rural areas (with the exception of the National Women's Association of Bhutan, which has a very small credit programme in Eastern Bhutan).

Since its establishment, the coverage of BDFC has reached around 60 percent of the rural population with 22 branch offices located in all the dzongkhags. Mobile banking, in which credit officers often walk for days to reach a client, has been established as an effective means of providing banking services to remote rural communities. Among all the schemes operated by BDFC, the one closest to microfinance is the Group Guarantee Lending and Saving Scheme (GGLSS).

The minimum and maximum limits on the number of members required to form such a group are three and seven respectively. The members are given basic training in loan operations and enterprise management and an Individual Compulsory Saving Account (ICSA) is started by BDFC for each member with Nu. 50 each. Every member has to make a monthly deposit of Nu. 50 into this account, and 5 percent of every loan is also deposited into the same account. The members of GGLSS are eligible for five loan cycles with an initial loan ceiling of Nu. 7500 for a maximum period of 12 months. The loan ceiling is Nu. 50,000 for 36 months with an interest rate of 10 percent per annum. Mobile banking is used to approve loans and collect repayments and savings (ICSA as well as voluntary savings). A total of 1356 GGLSS groups were formed between 1999 and 2003 with a total disbursement of Nu. 4.278 million and total saving of Nu. 1.477 million for the same period.

According to a recent study on microfinance in Bhutan, the average loan size for the period 1999-2003, (excluding the loans disbursed by the BDFC head office, which are mostly large loans), was around Nu. 24,000 per account. The total number of 3416 account holders in 1999 increased to 5649 in 2003, bringing the total number of clients to 24,024 for the period (Chetri 2005).

The main reasons people borrow are house construction, purchase of seeds and fertilizers and livestock improvement. Loans were also taken for starting small businesses, land improvements and purchase and, in a few cases, to pay off informal moneylenders. Agriculture loans comprise of 35 percent of total BDFC operations. As a percentage of the total lending of all the financial institutions, microfinance or agricultural loans, with around Nu. 11 million, accounted for a mere 0.5 percent of the total disbursement of Nu. 2037 million in 1998 and increased slightly to 0.6 percent in 2004 (Dema 2005).

Although total disbursement has increased since the rural credit programme was started, disbursement is highly skewed and has not contributed to balancing regional development as its services have benefited the better off dzongkhags, while poorer households apparently have been unable to avail themselves of these services. The relatively well-off western region has received 47.4 percent of the total disbursement, while the poorest Eastern region received only 26.1 percent. Similar bias against the poorer parts of the country is also evident at the dzongkhag level. For instance, the Poverty Assessment and Analysis Report 2000 (RGOB 2000) identified Gasa, Pemagatshel, Lhuentse, Zhemgang, Trongsa, and Samdrup Jongkhar as the most disadvantaged dzongkhags, and yet the microfinance programme of BDFC have not favoured these dzongkhags. Their combined share of total disbursement was just 15.2 percent, which was less than the total loan received by the two top dzongkhags, Paro and Chhukha (18 percent). Hence, the larger portion of BDFC's disbursement has gone to the more well-off dzongkhags and not to the backward ones.³⁵

³⁵ A more detailed discussion of microfinance in Bhutan can be found in Annex 3.

5.6 Summary

The overall monetary policy framework of Bhutan can be characterized as similar to a currency board system. The domestic currency ngultrum is pegged to the Indian rupee at a one-to-one exchange rate, guaranteed by at least 100 percent reserve backing of all the Ngultrum issued.

There has been impressive progress in the speed of monetization of the Bhutanese economy, especially over the last decade or so. Rapid increase in money supply has not, however, led to rapid inflation, as a large proportion of the additional money supply has served to integrate an increasing proportion of the barter economy into the cash nexus.

The inflation rates fluctuated around an average of 8-9 percent in the 1980s and 1990s. However, since 2000, the average inflation rate has been cut almost in half and now stands at less than 5 percent. Low inflation has, however, been achieved not primarily through active monetary or fiscal policy, but through the exchange rate policy that keeps the local currency ngultrum pegged with the Indian rupee. Inflation in Bhutan is essentially imported inflation, tracking closely the inflation in India, which has remained relatively low by international standards.

Interest rates were liberalized in the late 1990s. Since then, the average interest rate on deposits has come down—from 8.8 percent in 2000 to 5.7 percent in 2005. By contrast, the average lending rate has come down only marginally from 14.2 percent to 13.2 percent over the same period. As a result, the average interest spread, which was already high at 5.4 percent in 2000, climbed even higher to 7.5 percent in 2005.

Widening spread in the interest rate can be attributed to the non-competitive nature of the financial market in Bhutan, which is characterized by a leader-follower type of duopoly. The fundamental reason why the financial sector is non-competitive in Bhutan lies in the tension between the scale economies of financial intermediation and the exceedingly small size of the market.

Domestic credit has expanded rapidly following financial liberalization, although the expansion probably has more to do with extraneous factors than liberalization as such. Most of the additional credit has gone to the construction and trade sectors. It must be a matter of some concern, however, that the surge in private sector credit has not been of any great benefit to the manufacturing sector—on which the country pins much hope for spurring productivity growth in the coming years—or of great help to agriculture and small enterprise, both of which have seen declining shares.

With farmers are no longer being able to rely on subsidies for modern inputs, the need for rural credit is considered essential for agricultural development. To meet this need, a microcredit programme has been launched, administered by the Bhutan Development Finance Corporation (BDFC). The impact of this programme on poor farmers has been limited so far firstly because the size of this programme is still quite small, and secondly because a disproportionate share of the loans has gone to the relatively well-off regions of Bhutan.

CHAPTER 6

TRADE POLICY

6.1 The Background

Bhutan remained practically closed to the outside world until the 1960s at which point King Jigme Dorji Wangchuck initiated efforts to increase links with the greater world. Up to that time, Bhutan's trade, limited by low marketable surpluses of self-sufficient communities, was mainly with Tibet and based on barter. Bhutan exchanged rice for salt, wool, tea and precious metals. Free trade between India and Bhutan has a long tradition, but was confined mainly to the southern region of Bhutan, which had an extended border with India. With the closure of the border with Tibet in the early 1960s, a complete re-orientation of trade towards India was necessary.

The foundation for this reorientation was laid down by the Five-Year Development Plans launched in 1961. The first two Plans emphasized establishing basic infrastructure aimed at reducing Bhutan's physical isolation and improving internal communications, while also building up the institutions of a modern economy and state, especially through education and training. Better communication made trade more feasible, which in turn prompted increased monetization and opened the way for more specialization in production. A striking example of such specialization has been a trend towards the production of horticultural crops for export, complemented by an import of rice. Spurred by better communication and the availability of low-cost Indian labour, most industrial development took place near the Indian border. Subsequently, with the development of hydropower in the mid-1980s, an entirely new dimension was added to the pattern of trade

between Bhutan and India, with far-reaching consequences for the overall development of the Bhutanese economy.

Section 6.2 sketches the main contours of the trade regime that have evolved over the last two and a half decades—the period for which reasonably reliable statistics are available. Section 6.3 discusses the main elements of trade policy, including some recent attempts at policy reform that have helped shaped the trade regime. Section 6.4 summarizes the main findings.

6.2 The Trade Regime

From a virtually closed economy in 1960, Bhutan has completely transformed itself in the subsequent decades into a classical case of a small open economy characterized by a high degree of dependence on trade (Table 6.1). Already by the early 1980s, when systematic statistics were first collected, the combined export and import trade of Bhutan amounted to 55 percent of its GDP—a far greater trade ratio than anything observed in the rest of South Asia. Over time, the dependence on trade became even greater until the trade ratio reached nearly 74 percent in the second half of the 1990s. The trade ratio has declined somewhat since then, but with the imminent prospect of exporting electricity to India from the Tala project, the ratio is likely to shoot up again in the next couple of years.

Table 6.1 Trade Penetration Ratios: 1981-2003
(Periodic annual averages)

Period	Export/GDP Ratio (%)	Import/GDP Ratio (%)	Trade/GDP Ratio (%)	Trade Gap/GDP (%)
1981–1984	11.2	44.3	55.6	(-)33.1
1985–1989	21.3	41.7	62.9	(-)20.4
1990–1994	27.7	40.6	68.3	(-)13.0
1995–1999	32.6	41.0	73.7	(-)8.4
2000–2003	21.9	37.6	59.4	(-)15.7

Source: Estimated from ADB (1999, 2000) and RMA (2000, 2004).

What is especially remarkable about this upward trend in the importance of trade relative to GDP is that almost all the increases in the trade ratio resulted from faster growth of exports rather than of imports. The import-to-GDP ratio declined slightly from 44 percent in the early 1990s to 41 percent in the second half of the 1990s, whereas the export-to-GDP ratio tripled during the same period—rising from 11 percent to 33 percent. In recent years, both export ratio and import ratio have fallen somewhat from the giddy heights of the late 1990s, but as noted above, the commissioning of the Tala project is certain to return these ratios to their upward trend very soon.

While the trade ratio has grown strongly, the trade gap has come down just as sharply. While the gap between imports and exports amounted to a colossal 33 percent of GDP in the early 1980s, by

the late 1990s it came down to just 8 percent. Although the downward trend was slightly reversed in subsequent years, the trade gap as a proportion of GDP is still less than half of what it was in the early 1980s. Underlying both the upward trend in the volume of trade relative to GDP and the downward trend in the trade gap relative to GDP is the exceptionally fast increase in the volume of export. Thus, in the period 1981-2003, the dollar value of exports has grown at the compound rate of 8.5 percent per annum, as against import growth of 5.5 percent and real GDP growth of 6.5 percent. This has resulted in a rising trade ratio and a declining trade gap at the same time.

Despite the rapid growth of exports, however, trade deficits have remained large as a result of the very high level of imports, which stems from the continued inability of Bhutan's economy to expand its productive base (outside the power sector). Even after including the earnings from 'invisibles', which essentially means earnings from tourism, the current account deficit remains large and growing in absolute terms (Table 6.2). Thus, from Nu. 1279 million in 1995/96, the current account deficit (excluding grants from abroad) has risen to Nu. 6902 million in 2003/04.

Table 6.2 Current Account Balance: 1995/96-2003/04

Year	Balance without grant (Nu. million)	Balance with grant (Nu. million)	Total grant (Nu. million)	Grant from India (Nu. million)	India's share of grant (%)
1995–1996	(-)1279.7	1556.3	2836.0	1168.9	41.22
1996–1997	(-)2009.0	653.5	2662.5	1378.0	51.76
1997–1998	(-)1792.8	1487.6	3280.4	2460.4	75.00
1998–1999	(-)4762.0	384.2	5146.2	3812.1	74.08
1999–2000	(-)5134.4	1049.6	6184.0	5098.0	82.44
2000–2001	(-)4908.6	343.4	5252.0	4092.3	77.92
2001–2002	(-)5990.4	(-)652.2	5338.2	3586.6	67.19
2002–2003	(-)6633.3	2467.5	9100.8	7250.9	79.67
2003–2004	(-)6902.6	2220.3	9122.9	6954.0	76.23

Source: Estimated from RMA (2000, 2004).

Bhutan has been able to sustain such large external deficits mainly due to the generous grants it has received from abroad—chiefly from India—ever since it embarked upon modern economic development. As is seen from Table 6.2, the flow of grants has been so large that it has transformed even a big and rising current account deficit into a sizeable surplus in all but one year. An increasing proportion of these grants have come from India. In the mid-1990s, India's share of grants were already high at around or slightly less than half; by 2003/04, they had risen to three quarters. Despite rapidly rising exports, therefore, the fact that Bhutan has been able to maintain a high and rising level of imports is only because of the generous grants it has received from India, and to lesser extent, from other donors.

India is not only the main source of grants that has sustained the import trade of Bhutan, it is also by far the most important trading partner of Bhutan. As can be seen from Table 6.3, India's place in Bhutan's external trade is, if anything, increasing over time. In the early 1990s, about 88 percent of all exports were destined for India; a decade later, that proportion has increased to 95 percent. During the same period, India's share in imports has increased from 74 percent to 81 percent. Bangladesh is the second largest export market for Bhutan, with a share of about 4 percent, and Japan is the second largest source of imports, also with a share of 4 percent.

Table 6.3 Direction of Bhutan's External Trade
(Periodic annual average: percentage share)

	1990–1994	1995–1999	2000–2003
<i>Export to</i>	100.0	100.0	100.0
India	88.4	93.1	94.6
Bangladesh	9.5	5.2	3.9
Others	2.1	1.7	1.5
<i>Import from</i>	100.0	100.0	100.0
India	73.7	69.2	81.2
Japan	10.7	10.4	4.0
Singapore	0.7	7.1	2.5
Others	14.9	13.3	12.3

Source: Estimated from RMA (2000, 2004).

A number of factors have contributed to the predominate presence of India in Bhutan's external trade. The most important of these are geographical proximity and the support provided by India to Bhutan both for producing exportables (such as electricity) destined for the Indian market and for sustaining imports through generous grants made in non-convertible rupees. All this has been facilitated by an institutional framework that includes a bilateral free trade agreement between the two countries, use of the Indian rupee as a medium of exchange both internally in Bhutan and for trade with India, and a fixed exchange rate between the rupee and the ngultrum.

The dominance of bilateral trade with India signifies Bhutan's limited ability to diversify its export markets. This creates a mismatch between the import from and export to third countries as nearly 16 percent of imports are denominated in convertible currency, while less than 5 percent of exports earn convertible currency. This mismatch between the earning and spending of hard currency leads to a severe foreign exchange constraint, which continues to plague the Bhutanese economy even as trade with India flourishes (and is expected to flourish even more with the commissioning of the Tala hydropower project in 2006).³⁶

³⁶ The implications of the foreign exchange constraint for the Bhutanese economy are discussed further in Chapter 12.

An examination of Bhutan’s composition of trade reveals some interesting features (Table 6.4). On the export side, the first point to note is that nearly three fourths of all export earnings are derived from activities based primarily on indigenous natural resources—namely, electricity generated by hydropower, foodstuff originating from land, wood products based on forest resources and minerals.

Table 6.4 Composition of Bhutan’s External Trade
(Periodic annual average; percentage share)

	1993–1995	1996–1999	2000–2003
Import			
Capital goods	42.66	46.73	47.65
Foodstuff	23.21	19.18	17.78
Others	34.13	34.08	34.58
<i>Total</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>
Export			
Resource-based	76.20	70.95	72.88
Electricity	24.48	30.73	43.46
Foodstuff	20.95	15.48	12.63
Wood products	15.96	10.71	4.24
Mineral	14.81	14.03	12.55
Others	23.80	29.05	27.12
<i>Total</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>

Source: Estimated from RMA (2000, 2004).

While the share of resource-based exports has remained roughly constant over the last decade, the internal composition has undergone significant changes. In particular, the share of electricity has surged ahead relentlessly, rising from a quarter of all export earnings in the mid-1990s to almost 44 percent in the period since 2000. This has been helped in part by periodic revisions in the electricity tariffs charged to India and in part by sluggish growth in other resource-based products. The latter phenomenon is especially true of wood and wood products, whose share in total exports have come down significantly from 16 percent in the mid-1990s to just 4 percent in recent years. The declining share of wood and wood products is a reflection of the strong concern in Bhutan for the conservation of the environment, which has resulted in various kinds of restrictions being imposed on the use of forest resources. While this concern for the environment on the part of a poor country like Bhutan deserves the greatest respect, the opportunity cost in terms of foregone export earnings and the resulting intensification of the foreign exchange constraint must be borne in mind when deciding upon the optimal use of forest resources.³⁷

³⁷ The potential trade-offs between environmental concerns and the economic use of forest resources are discussed further in Chapters 10 and 12.

Another noteworthy feature of the composition of trade is the fact that foodstuff features prominently in both export and import baskets. This reflects the significant amount of specialization that has occurred within the agricultural sector since the opening up of Bhutan to the outside world after 1960.³⁸ A once self-sufficient rural economy no longer strives to produce everything its people want to consume. Most significantly, farmers in many parts of Bhutan have discovered that their comparative advantage lays not so much in the production of rice, the traditional staple, but instead in various types of horticultural products. As a result, the structure of production has altered considerably. Although rice continues to be produced in some areas, where either specificities of the microclimate or relative isolation from the transportation network makes it worthwhile to do so, many areas have specialized in the production of horticultural products destined for India (and increasingly for Bangladesh). In return, rice and other essential foodstuff are being imported from India.

The most important category of imports, however, is not foodstuff but capital goods, which Bhutan seriously needs in order to modernize its economy. Over the last decade, capital goods have accounted for 40-50 percent of all imports, showing a slightly upward trend over time. This is a highly encouraging trend in view of the developmental needs of the Bhutanese economy.

There is, however, a worrying feature that the aggregate figures tend to hide. This relates to the import of capital goods from countries other than India. As can be seen from Table 6.5, while the aggregate import of capital goods has increased strongly over the last decade, the amount of capital goods imported from countries other than India has declined in relative terms. Even in absolute terms, the recent years have seen a decline compared to the second half of the 1990s.

Table 6.5 Import of Capital Goods into Bhutan: 1993-2003
(Periodic annual average)

	1993–1995	1996–1999	2000–2003
Total capital goods import (US\$ million)	41.8	68.6	97.2
Non-Indian capital goods import (US\$ million)	23.5	35.2	28.1
Non-Indian share (%)	56.1	51.3	28.9

Note: Capital goods include base metal and metal products and all kinds of machinery and equipment, including transport equipment.

Source: Estimated from RMA (2000, 2004).

The decline in imports of capital goods from non-Indian sources is a matter of some concern; even despite the rising import of capital goods from India. This is so for two reasons. First, capital goods imported from India cannot substitute for a more complete array of capital goods imported from elsewhere. Most of the capital goods imported from India are used in the power and construction sectors, whereas a lot of the machinery required for developing a modern manufacturing base has to be imported from other sources. Second, since the Indian rupee is still non-convertible, rupee earnings from exports to India are not a perfect substitute of export earnings in hard currency.

³⁸ For more on the evolution of the agricultural sector, see Chapter 8.

These twin problems of non-substitutability together imply that, no matter how strongly the rupee earnings happen to grow, unless hard currency earning also rises strongly the economy of Bhutan will face a capital goods constraint, especially in the manufacturing sector. Rupee earnings by themselves will not help to solve this constraint, because, firstly, rupees cannot buy all the necessary capital goods from India for the simple reason that all types of capital goods are not yet available in India, and, secondly, the rupee cannot be used to buy the necessary capital goods from other countries where they are available.

These non-substitutability problems also imply that in order to assess how far Bhutan's ability to finance its essential imports has changed over time it would not do to study the issue in aggregative terms. Bhutan's trade with India and its trade with the rest of the world will have to be analysed separately. Table 6.6 attempts such a disaggregated analysis, and shows Bhutan's current account balance—with and without grants—separately for trade with India and trade with the rest of the world. For both these parts of Bhutan's external trade, Table 6.6 shows that the current account remained in huge deficits all along, if grants are left out of the calculations. In other words, Bhutan's own earnings from the export of goods and services have never been adequate to meet its import requirements. This is true not only with trade with India but also with trade with the rest of the world. The crucial difference, however, lies in the current account balance after grants are taken into account.

Table 6.6 Bhutan's Current Account Balance with India and the Rest of the World
(Figures in Nu. million)

Year	Trade with India		Trade with Others	
	CA balance without grants	CA balance with grants	CA balance without grants	CA balance with grants
1995/96	-208.8	960.1	-1070.9	596.2
1996/97	-463.5	914.5	-1545.5	-261.0
1997/98	-982.8	1477.6	-810.0	10.0
1998/99	-3059.5	752.6	-1702.5	-368.4
1999/2000	-3560.5	1537.5	-1573.9	-487.9
2000/01	-3643.7	448.6	-1264.9	-105.2
2001/02	-3741.1	-154.5	-2249.3	-497.7
2002/03	-4772.0	2478.9	-1861.3	-11.4
2003/04	-4926.4	2027.6	-1976.2	192.7

Source: Estimated from RMA (2000, 2004).

In the case of trade with India, grants made in rupee have been large enough to finance the current account deficit fully and still leave a handsome surplus in all but one year during the period 1995/96-2003/04. By contrast, in the case of trade with the rest of the world, a sizeable deficit has persisted in most of the years even after hard currency grants are taken into account. In other words, even the combined strength of Bhutan's hard currency exports and the donors' hard

currency grants have not been enough to fully finance its hard currency imports. The remaining balance was met by using the hard currency loans offered by the donors. But since the inflow of loans was small, in comparison with grants, there has been a severe limit on the magnitude of the current account deficit that could be financed. This in turn has seriously impaired Bhutan's ability to finance the import of badly needed capital goods from sources other than India, resulting in a decline in such imports in recent years, as noted in Table 6.5.

This analysis suggests that the process of capital formation in Bhutan faces a binding foreign exchange constraint, in the specific form of a hard currency constraint. The implication is that neither greater effort towards raising domestic savings nor greater availability of rupee will enable Bhutan to accelerate the rate of capital formation, especially in manufacturing activities, unless measures are taken to remove this binding constraint quickly.³⁹

It should be pointed out that despite persistent deficit in the hard currency component of the current account, the overall balance has usually been comfortably positive. This means that the availability of hard currency loans have been adequate, not only to finance any shortfall in the current account that grants were unable to meet, but also to add to the reserves of hard currency. At the same time, the rupee reserve has also increased over the years as a result of a persistently healthy surplus in the rupee component of the current account (with grants), supplemented by the rupee loans received from India. As a result, the reserve position of the Royal Monetary Authority (RMA) has improved at great speed over the last decade. Total reserves have shot up from US\$121 million in 1994/95 to US\$383 million in 2003/04—a more than three-fold increase within a span of just one decade (Table 6.7). Another way of looking at these figures is that while the reserves were equivalent to 15-16 month's imports in the mid-1990s, in recent years they now amount to more than 20 months' imports.

What is especially remarkable about these reserves, apart from the speed and size of accumulation, is the fact that the largest part of them, by far, is being held in the form of hard currency. Thus, out of the US\$383 million worth of reserves held in 2003/04, as much as US\$287 million was in hard currency and just US\$96 million in rupees. The difference between the two components is even more striking in terms of months of imports they were able to finance. In the two years 2002/03 and 2003/04, the average reserve of rupees was equivalent to 5 month's imports from India, whereas the average hard currency reserve was large enough to maintain the current rate of hard currency imports for an astonishing 154 months, that is to say, for nearly 13 years!

From the point of view of the Royal Monetary Authority of Bhutan (RMA), the hard currency reserve exists not only to meet shortfall in the availability of hard currency but also to meet unforeseen needs for rupee. After all there a one-way convertibility between the two components does exist at least—that is to say, hard currency can be converted into rupee, if necessary. The large reserve is justified by RMA on the grounds that it is needed in order to maintain confidence in the fixed exchange rate system with India and to cater to unforeseen demands on hard currency, which is

³⁹ *The traditional two-gap analysis of developmental constraints can be modified in the Bhutanese context into a three-gap model, involving a savings constraint, and two non-substitutable components of the foreign exchange constraint, that is to say the rupee constraint and the hard currency constraint. The preceding analysis suggests that of the three it is the last constraint that is most likely to hold back Bhutan's industrialization, unless serious efforts are made to address the problem. The strategic implications of this analysis are elaborated in Chapter 12.*

Table 6.7 Bhutan's International Reserves

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04
<i>Total reserves (US\$ million)</i>	120.9	145.1	176.1	216.7	259.0	291.1	292.6	315.3	373.3	383.3
Rupee	2.2	4.3	26.8	36.0	58.9	69.6	75.6	74.8	71.3	95.9
Convertible currency	118.7	140.8	149.3	180.7	200.1	221.5	217.0	240.5	302.0	287.4
<i>Total reserves (months of import)</i>	14.9	16.0	16.1	21.0	19.4	19.3	21.0	20.6	23.0	18.8
Rupee	0.4	0.6	3.7	4.9	6.2	6.1	6.8	6.3	4.9	5.3
Convertible currency	54.0	58.4	39.4	59.5	51.9	59.1	74.5	70.6	192.3	115.1

Source: Estimated from Royal Monetary Authority of Bhutan, Annual Reports, various years.

difficult to come by. However, there is something odd about putting aside, in the form of hefty reserves, precisely that component of foreign exchange whose shortfall is proving to be the binding constraint to capital formation in the industrial sector. After all, a large amount of resources is being tied up in the form of reserves instead of being used to import essential machinery and intermediate goods required for manufacturing activities. There is clearly a trade-off here between current needs and future contingency, and the authorities will have to constantly re-evaluate this trade-off, lest excessive caution should unduly hold back the pace of industrial progress.

6.3 The Trade Policy Regime

6.3.1 Trade Openness

The Royal Government of Bhutan is keenly aware that for a small country like Bhutan, international trade is very important. International trade can compensate for the limited domestic resources as well as help overcome the limitations of a small local market. The International Trade Policy of Kingdom of Bhutan 2004 (RGOB 2004) broadly outlines the intention of the trade policy to (i) create an open and liberal environment for the promotion of the private sector; (ii) stimulate export growth; and (iii) integrate Bhutan into the international and regional trading system.

This section seeks to briefly outline the various constraints and opportunities provided by the existing policy regime.

As Bhutan is an import-dependent economy (with imports amounting to 60-70 percent of GDP in recent years), there has been minimal compulsion to protect the domestic economy with import tariffs or quantitative restrictions. Due to limited domestic market, the industrial sector has been largely export-oriented. The domestic agriculture sector has also not lobbied for protection, typical in many countries, due to scattered population and the dominance of small subsistence farmers. Yet quantitative restrictions on hard currency imports were quite common until 1990. The chief motivation, however, was to conserve scarce hard currency rather than to protect domestic industry. It is important to note that restrictions were applied only to the 20-30 percent of imports that were made in hard currency from countries other than India. The remainder, that is to say the bulk of import trade, was covered under a Free Trade Agreement with India. As a result, Bhutan has long been the most open economy in South Asia, with the most liberal trade regime.

Further liberalization took place in the early 1990s, when the country began to move away from quantitative restrictions and towards the imposition of taxes and tariff. This was part of a broader move meant to allow the market mechanism a greater role in the allocation of resources. The replacement of quotas by tariffs was also justified on the grounds that tariffs would raise additional revenue for the government, by transferring the rents that had previously accrued to importers in the form of scarcity premium.

It should be emphasized, however, that in Bhutan trade liberalization has only had the limited connotation of conversion of quotas into tariffs but not the reduction of tariff rates, as was the case in most other countries. Unlike other countries, the rates of sales taxes and customs duty on

imported goods were actually revised upward in September 2004 by an average of 30 percent. The stated rationale for the revision was mainly to ‘conserve hard currency’ by discouraging imports from third countries as ‘most of the essential items were available in the domestic market or could be bought from India’ (Kuensel 2004b). Customs duty and sales tax were also increased on items like plastic to discourage its use due to environmental concerns.

Currently, the trade taxes of Bhutan consist of the Bhutan Sales Tax (BST) and the customs duty. The BST has seven slabs, in the range of 0-50 percent. The highest rate of 50 percent is applied on alcoholic beverages and tobacco products.⁴⁰ The BST is imposed on all imports and on sales of hotels, restaurants and cement in the domestic economy. In principle, BST is a trade-neutral tax since it is meant to be imposed on a commodity regardless of its origin, that is to say, it is supposed to be levied equally on both imports and domestically produced import substitutes. The BST, therefore, does not have a protective effect and is primarily a revenue-raising instrument. However, by raising the domestic price of imported goods it does discourage imports and to that extent does interfere with free trade. In recognition of this fact, the Free Trade Agreement with India allows the Indian exporters to claim BST as a rebate against the Indian Sales Tax, thereby nullifying the impact of BST on Indian imports.

The only potentially protective and trade-distorting tax in Bhutan is the customs duty. There are seven slabs in the customs duty rates, in the range of 0-100 percent. The highest rate corresponding to 100 percent duty is applied to alcoholic beverages, tobacco and import of antiques and other luxury items.

The actual impact of the customs duty is, however, very limited for a number of reasons. First and foremost is the fact that it does not apply to trade with India, which accounts for 70-80 percent of all imports. Secondly, even where it does apply—namely on hard currency imports from countries other than India—there are many exemptions and leakages that dilute its effect. For example, customs duty is exempt on imports of industrial plants, machinery their spare parts and raw materials. In addition customs are also exempt if the final product in question has at least 40 percent value addition and/or the convertible currency earned by the company during the year covers at least the cost of raw materials. Furthermore, a large part of the imports from third countries are related to either government or donor-related procurement, which is also exempt from customs duty. There is still another source of leakage that arises from the purchase of high value motor vehicles imported by private parties (from Japan and Korea) who have not paid the customs duty. Most private car importers use the privilege granted to senior civil servants who are entitled to import one vehicle every seven years without payment of customs duty. Yet another source of leakage is the ability to bring in goods worth up to US\$1500 duty-free, for personal use, for all incoming Bhutanese passengers on Druk Air. In addition, customs duty is also minimized because traders often under invoice the value of their imports. As a result of all these factors, customs duty is a rather marginal phenomenon in Bhutan—neither its revenue effect nor its trade-distorting effect is large enough to make much difference in the course and structure of the Bhutanese economy.

A much more important role is played by direct control on the use of convertible currency. Payments in convertible currency are regulated by the Foreign Exchange Regulations Act 1997.

⁴⁰ The import and sale of tobacco have, however, been banned since December 2004.

Bhutanese nationals can avail foreign exchange for current account transactions with some limitations. The permissible foreign exchange transactions include the following:

- Imports as per Rules and Procedures for Imports from Third Countries;
- Education and training abroad;
- Remittance of salary and savings of third-country nationals;
- Foreign travel on business or holiday up to a maximum of US\$1500 per person per calendar year;
- Medical treatment abroad; and
- Equity participation by FDI investors, foreign exchange loans, current transactions including repatriation of profits and dividends based on net foreign exchange balancing requirement as per the FDI Policy 2002.

These limitations on the use of convertible currency constitute by far the most important source of deviation from free trade. It should be emphasized, however, that these deviations are prompted not by a conscious design to protect a set of targeted industries chosen by some criterion (such as infant industry protection) or some externalities that could in principle justify deviation from free trade. Rather, the sole motivation of applying these controls is to ration the use of the limited supply of convertible currency. As the argument goes, the limitations are maintained because Bhutan has not yet reached a position to provide current account convertibility, and this is reflected in the country's status under Article IV of the International Monetary Fund (IMF).

As noted in the preceding section, Bhutan has persistently run large current account deficits in its hard currency trade, which is not offset even by the inflow of foreign grants.⁴¹ This suggests that the ngultrum is overvalued relative to the convertible currencies. Had there existed full current account convertibility between the ngultrum and hard currencies, this overvaluation would have been eliminated, leading to a depreciation of the ngultrum to the extent required to eliminate the current account deficit. In that case, it would not have been necessary to resort to administrative rationing of hard currency. So, the question must be asked: why is convertibility not allowed? The standard answer to this sort of question is that in a 'thin' currency market, convertibility will generate excessive volatility of the exchange rate. This argument applies to Bhutan as much as it does to other developing countries, if not more so, because in Bhutan's case the hard currency market is even thinner than usual.

But in the case of Bhutan there is an additional reason for this that is even more compelling. Free convertibility of the ngultrum into hard currency is precluded by the policy of pegging the ngultrum to the Indian rupee. Given the peg, the ngultrum's exchange rates with all other currencies are determined entirely by the rupee's rates of exchange with said countries. However, the exchange rates that are appropriate for India are not necessarily appropriate for Bhutan. Thus, it is entirely possible for the ngultrum to be overvalued vis-à-vis hard currencies even if the rupee is not. And since the overvalued ngultrum necessarily implies that demand for hard currencies exceeds their supply, there is no option but to resort to administrative rationing.

⁴¹ For example, in 2003, Bhutan's convertible currency earnings amounted to US\$14 million on account of exports to Bangladesh (US\$6 million) and Tourism (US\$8.3 million). On the other hand, imports of goods alone amounted to US\$29 million in 2003.

The preceding analysis brings out a unique feature of Bhutan's foreign exchange regime. In most other developing countries, administrative rationing of foreign exchange is resorted to for various reasons (including an implicit belief that government can allocate scarce foreign exchange more wisely than the market), and overvaluation of the currency is often a consequence of such rationing. In Bhutan, however, the direction of causality is reversed. Here overvaluation exists because of the policy of maintaining a peg with the Indian rupee, and administrative rationing is a consequence of this overvaluation.

This raises an important issue about exchange rate policy, which is worth bearing in mind. Any inefficiency caused by the overvaluation of the ngultrum vis-à-vis hard currencies and the administrative rationing that goes along with it is the price Bhutan has to pay if it continues to maintain a fixed peg with the rupee. It is widely acknowledged that the peg with the rupee confers many benefits to Bhutan in respect to trade with India. It should be equally acknowledged, however, that the same policy also causes inefficiency in respect to trade with the rest of the world. In particular, by causing overvaluation of the ngultrum vis-à-vis hard currencies, it inhibits the growth of hard currency exports. Overvaluation is not the only or even the most important reason for Bhutan's inability to earn more hard currency; but it does contribute to the problem. Since, as has been argued above, shortage of hard currency appears at present to be the binding constraint to Bhutan's prospects for capital accumulation, this unintended cost of the peg with the Indian rupee ought to be viewed with some concern. At what point would the cost of overvaluation in the realm of hard currency trade outweigh the benefits of the peg in the realm of rupee trade? The answer may not be obvious, but the policy makers must at least remain alert to the question.

6.3.2 Trade Agreements

Trade and transit arrangements with India play a critical role in developing Bhutan's foreign trade. A trade and transit agreement between India and Bhutan, valid for a period of 10 years, was signed in 1972. With the changing trade scene, a number of the arrangements in the treaty were revised to simplify procedures in order to assist Bhutan to develop its third-country trade. The agreement covers only trade in goods.

Bhutan also signed a Preferential Trade Agreement (PTA) with Bangladesh in 1980. The PTA allows for various concessions on duties on a range of products. Under this agreement Bangladeshi products are granted duty-free access in the country while Bhutanese exports are imposed 50 percent of the normal duty in Bangladesh. Bangladesh is the second largest market for Bhutanese exports, comprising 3.6 percent of exports. The main exports to Bangladesh consist of agriculture and horticulture products and mineral products. Bhutan imports garments, pharmaceuticals, fertilizers, household utensils and food items from Bangladesh. Trade with Bangladesh is conducted in hard currency, and Bhutan has consistently run a trade surplus due to the small consumer base. Bhutan has expressed its intention to further liberalize trade with Bangladesh through negotiations for deeper reduction in tariff and elimination of non-tariff barriers and expansion of product coverage under the existing PTA (RGOB 2002b).

In the regional context, Bhutan is a member of the South Asian Preferential Trade Association (SAPTA). In January 2004, Bhutan also signed the South Asian Free Trade Agreement (SAFTA), which will work towards lowering import tariffs among member countries of the South Asian Association for Regional Cooperation (SAARC) and broadening the scope for trade within the region, which currently accounts for below 5 percent of the global trade of the member states.

SAFTA will come into force on completion of four procedural formalities: the formation of sensitive lists, rules of origin, a revenue loss compensation mechanism, and ratification by all the member states. SAFTA came into being on 1 January 2006, following the formation countries have been given different durations to bring down their customs tariffs to 05 percent. India and Pakistan, the developing countries of the region, have been given seven years time, Sri Lanka eight years, and the Least Developed Countries (LDCs) of Nepal, Bhutan, Bangladesh and Maldives ten years.

Due to the unstable state of political relations between India and Pakistan and the fear of Indian domination in such a free trade agreement, SAFTA is likely to progress at a very slow pace. Furthermore, as Bhutan's economy is already highly integrated with that of India, and to a much lesser extent with Bangladesh, other benefits that could accrue will be marginal.

Bhutan became a member of the Bay of Bengal Initiative for Multi-Sectorial Technical and Economic Cooperation (BIMSTEC) in February 2004. The BIMSTEC members include four other SAARC countries (Bangladesh, India, Nepal, and Sri Lanka) and Thailand and Myanmar. In February 2004, the members signed an agreement to begin negotiations to establish a free trade area by 2017. Membership in BIMSTEC will provide Bhutan access to markets beyond the immediate region to include Thailand, Myanmar and Southeast Asia. It is also hopes that membership in the regional grouping will help to attract foreign investment and boost Bhutan's service sector. Due to relatively little political problems among most of the BIMSTEC members, it is likely that BIMSTEC could overshadow SAFTA in the coming decades.

At the multilateral level, Bhutan applied for membership in the World Trade Organization in 1998. The accession negotiations are currently taking place..

6.4 Summary

From a virtually closed economy around 1960, Bhutan has completely transformed itself into a classical case small open economy. The trade ratio reached nearly 74 percent in the second half of the 1990s. Since then the ratio has declined slightly but is likely to go up again now that the Tala project has been commissioned. Despite a large volume of exports, the trade gap has remained large—financed by generous grants from abroad, mainly from India.

India is also by far the most important trading partner of Bhutan, and its role is increasing over time. In the early 1990s, about 88 percent of all exports were destined for India; a decade later, that proportion has increased to 95 percent. During the same period, India's share in imports has increased from 74 percent to 81 percent. Bangladesh is the second largest export market for Bhutan, with a share of about 4 percent, and Japan is the second largest source of imports, also with a share of 4 percent.

The dominance of bilateral trade with India signifies Bhutan's limited ability to diversify its export markets. This creates a problem in its trade with third countries, as nearly 16 percent of imports are denominated in convertible currency while less than 5 percent of exports earn convertible currency. This mismatch between the earning and spending of hard currency leads to a severe foreign exchange constraint, which continues to plague the Bhutanese economy even as trade with India flourishes.

Nearly three fourths of all export earnings are derived from activities based primarily on indigenous natural resources, such as electricity generated by hydropower, foodstuff originating from land, wood products based on forest resources and minerals.

The most important category of import is capital goods. Over the last decade, capital goods have accounted for 40-50 percent of all imports. However, while the aggregate import of capital goods has increased the amount of capital goods imported from countries other than India has declined in relative terms. This is a matter of some concern as Indian capital goods are not close substitutes of capital goods imported from elsewhere.

A large amount of resources are tied up in the form of reserves instead of being used to import essential machinery and intermediate goods required for manufacturing activities. There is clearly a trade-off here between current needs and future contingency, and the authorities will have to constantly re-evaluate this trade-off, lest excessive caution should unduly hold back the pace of industrial progress.

The trade regime of Bhutan has been characterized by an extremely high degree of openness, buttressed by a bilateral Free Trade Agreement with India which has been in existence for over three decades.

The non-Indian part of Bhutan's import trade, which has varied in the range of 20-30 percent of total import, was, until recently, subject to quite severe quantitative restrictions. However, since the early 1990s this part also began to be gradually liberalized, as the country began to move away from quantitative restrictions towards taxes and tariff, as part of a broader move towards allowing the market mechanism a greater role in the allocation of resources.

Trade liberalization has, however, had only the limited connotation of converting quotas into tariffs but not reduction of tariffs as such. On the contrary, the rates of sales taxes and customs duty on imported goods were actually revised upward in 2004 by an average of 30 percent.

By far the most important source of restrictions on free trade lies in the limitations imposed on the use of convertible currency. These restrictions are prompted, however, not by a conscious design to protect a set of targeted industries, chosen by some criterion such as infant industry protection or externalities. Rather, their sole objective is to ration the use of the limited supply of convertible currency.

This chapter examines the link between macroeconomic policy and poverty reduction in Bhutan, drawing upon the evidence on growth and poverty on the one hand and the analysis of fiscal, monetary and trade policy on the other presented in the earlier chapters.

CHAPTER 7

MACROECONOMIC POLICY AND POVERTY REDUCTION

7.1 Fiscal Policy and Poverty Reduction

Some aspects of the fiscal policy conducted in Bhutan are especially relevant to poverty reduction, particularly in regards to the overall fiscal stance and the sectoral allocation of budgetary expenditure.

The overall fiscal stance of Bhutan has been characterized by a cautious approach towards spending, so as to avoid excessive debts and deficits. This has not, however, prevented Bhutan from raising the level of spending to over 40 percent of GDP, which is very high by South Asian standards. Revenues earned from sales of hydroelectricity to India and generous budgetary grants received from the outside world (mainly India) have enabled Bhutan to sustain a high level of government spending without incurring large domestic deficits. While the overall budgetary deficit has risen from around 1 percent of GDP in the late 1990s to over 6 percent in recent years, much of it has been financed by foreign loans contracted at favourable terms. As a result, domestic deficit has remained under 2 percent of GDP on the average, which is very much within acceptable limits in terms of inflationary implications.

Low domestic deficits, combined with the fact that the peg between the ngultrum and the Indian rupee has aligned Bhutanese prices to the moderately stable prices in India, have helped keep inflation down in Bhutan. This has been accomplished despite high levels of government spending. While the peg has stabilized the prices of tradable goods, low domestic deficits have kept in check the prices of non-tradable goods and services by preventing the kind of deficit-induced expansion in money supply that often lies at the root of high inflation in developing countries. The inflation rate in Bhutan has, in fact, fallen in recent years—from just under 10 percent in the 1990s to under 5 percent in the first half of the present decade.

All things considered, low inflation is a good thing for the poor people, for at least two reasons. First, inflation often acts like a regressive tax since the wages and prices received by the poor fail to adjust fully to rising overall price level, lower inflation has the potential to benefit the poor proportionately more than the rich. Second, low inflation has the potential to create more employment opportunities for the poor by creating a stable environment for entrepreneurs to undertake productive activities.

On the flip side, one must also consider the possibility that low inflation can under certain conditions be harmful for the poor. For instance, if low deficits and low inflation are achieved by pursuing an excessively contractionary policy that depresses aggregate demand in the economy and thereby restricts the growth of productive employment opportunities, the poor may actually be harmed. This does not seem to have been the case in Bhutan, however.

While it is true that deficits have been low in Bhutan, it is not enough to look at the domestic deficit or even the overall deficit in order to judge whether the fiscal stance has been expansionary or contractionary. In Bhutan, budgetary deficit is defined as the difference between government expenditure and the combined value of domestic revenue (tax and non-tax revenue) and foreign resources. What matters for aggregate demand, however, is the difference between overall government expenditure and domestic revenue, leaving aside foreign resources.⁴² Foreign resources play an unusually big part in financing the budget of Bhutan, making for a huge gap between government expenditure and domestic revenue. Thus, in the 1990s, domestic revenue accounted for only 55 percent of total expenditure, leaving a gap of 45 percent that was filled in entirely by foreign resources (Table 3.2). Subsequently, the gap has risen even further, as the share of domestic revenue in total expenditure has fallen to 48 percent, leaving a gap of 52 percent, financed mostly by foreign resources and only marginally by deficit financing. Since revenues have consistently remained far below the level of expenditure and the gap has widened over time, it is evident that the fiscal stance has been highly expansionary in Bhutan, and even more so in recent years. Thus, low budget deficits and low inflation do not indicate depressed demand in the particular circumstances of Bhutan.

Essentially, it is the generous budgetary grants offered by India that have enabled Bhutan to sustain a combination of a highly expansionary fiscal policy with low budget deficits and low inflation. In fact, the expansionary effects of fiscal operations have been further strengthened by the expansionary effect of extra-budgetary expenditures incurred for large hydropower projects financed by foreign resources. Both parts of this combination—expansionary stimulus to aggregate demand and low inflation—are potentially beneficial for the poor. The benefits are enabled first by creating demand for productive employment and second by preventing the purchasing power of the poor from being eroded.

The second aspect of fiscal policy that needs to be considered in the context of poverty reduction is the allocation of budgetary expenditures. The manner in which the government allocates its resources between different sectors of the economy and different regions of the country can have a profound impact on poor people's ability to lift themselves out of poverty. A landlocked poor country like Bhutan, with a very low density of population scattered over an inaccessible terrain, is understandably beset with pervasive market failures that prevent poor people from seizing

⁴² *This is so because while higher expenditure stimulates domestic demand and higher revenue depresses it, higher grants from abroad have no depressive effect on the domestic economy (it does however have a depressive effect on the foreign economy).*

opportunities of productive employment. By allocating its resources strategically to target those market failures, the government can potentially help the poor people to escape from poverty. This can be achieved by helping the poor to acquire the necessary human capital and creating access to productive employment. The record of Bhutan is somewhat mixed in this regard.

The most ostensibly pro-poor aspect of fiscal expenditure in Bhutan is the high proportion of resources allocated to health and education and a conscious attempt to ensure that the allocated resources reach the remotest parts of the country and the poorest part of the population. Thus during the period 2003/04-2004/05, the education and health sectors together received 28 percent of the total expenditure, which is much higher than what is typically observed in developing countries. This figure also represents a big jump from the average of 18 percent of total expenditure allocated to health and education in the Seventh and Eighth Five Year Plans. Evidently, the allocation for social sectors is both high and rising.

Several aspects of this emphasis on the social sectors are worth noting. First, in a bid to ensure that the benefits of social sector spending can spread far and wide, the government of Bhutan has tied such spending closely to its initiatives for administrative and fiscal decentralization. About a quarter of government resources are currently spent by local bodies, whose leaders are elected at the grass-root level, and who determine their own spending priorities. They have allocated by far the largest chunk of their resources to education, followed by health care.

Second, unlike in many other developing countries, expenditure on social sectors is heavily biased towards the priority subsectors that are especially important for the poor (most significantly primary education and primary health care). Recent estimates show that approximately 60 percent of the education budget is spent on primary education and 75 percent of the health budget is spent on primary health care (Tenzing 2004). Furthermore, per capita expenditure on these priority subsectors has gone up over time—from US\$53.25 in 1999/2000 to US\$82.95 in 2004/05—representing a compound annual growth rate of over 9 percent, which is considerably above the growth rate of per capita income during this period.

Third, in order to protect essential health services from cuts in spending that may be necessitated by unforeseen shortfall in resources, the government of Bhutan has recently set up a dedicated Health Trust Fund.⁴³ The Fund has not become operational yet, but some 75 percent of its target capital has already been mobilized and it is expected to become operational soon.

The effect of high, rising, geographically spread out and decentralized spending on social sectors is evident in the highly egalitarian distribution facilities, especially for health care. For example, the Living Standard Measurement Survey of 2003 found that access to health care was generally high and the poor were not far behind in terms of access compared to the non-poor. Thus, in the rural areas, when poor people fall sick almost 75 percent of them are able to access modern professional consultation as compared with 67 percent of the non-poor. In the urban areas, these figures were even higher—85 percent for the poor and 94 percent for the non-poor (NSB 2004b: 17). But in the field of education, there is evidence that there is still some way to go before similar levels of access, as in the case of health, can be claimed. For instance, the Poverty Assessment

⁴³ This is one of three Trust Funds that have been set up, the other two being dedicated to environment and cultural heritage.

and Analysis Report 2000 (RGOB 2000) found that some one third of all gewogs did not have a primary school. Yet, the fact that two thirds of the gewogs have schools is no small achievement for a country that has only recently turned to modern education.

There are, however, other aspects of the budgetary allocation that are not equally favourable to the poor. One of them relates to regional distribution of expenditure. As discussed in Chapter 3, while the distribution of expenditure across dzongkhags conforms quite well to the distribution of households, there are some conspicuous exceptions to this pattern. For example, a few dzongkhags in the west-central region of the country received a far greater proportion of Central government expenditures compared to the proportion of households they have. By contrast, there are certain other dzongkhags for which Central government expenditures are relatively much lower than what would be warranted by their share of households. Significantly, these two sets of dzongkhags stand at the opposite ends of the development spectrum—the former being the most developed, the latter being the least developed. This suggests that government expenditure has generally tended to favour the more prosperous regions of the country at the expense of the poorest ones.

The other aspect of fiscal expenditure that is not favourable to the poor is the relative neglect of agriculture. As the majority of the poor people live in rural areas and draw their livelihood from agriculture, the fate of the poor is inextricably linked with the state of agriculture in the short to medium term. It is, therefore, a matter of concern that agriculture is failing to provide attractive employment opportunities for many people, leading to rapid migration from rural to urban areas (MOA 2005b). While agriculture in Bhutan faces many structural bottlenecks, stemming from natural and geographical impediments, the fact that fiscal allocation for agriculture is low and declining does not help matters either. The share of agriculture in total Plan outlay has come down from 15.6 percent in the Sixth Five Year Plan (1987-1992) to 10.1 percent in the Ninth Five Year Plan (2002-2007). The relative decline in public expenditure on agriculture has been brought about by privatization of many activities that were earlier undertaken by government corporations and the ensuing reduction of subsidies on different agricultural inputs. The evidence so far does not, however, indicate that a greater play of market forces in the agricultural sector has benefited the poor people. If anything, there is some evidence to suggest that access to some of the essential support services has declined in some remote areas to the detriment of the interest of the poor.⁴⁴

Another aspect of fiscal expenditure that has relevance in assessing the pro-pooriness of the fiscal regime is the manner in which the earnings from hydropower projects have been utilized. As has been noted earlier, the launching of the Chhukha project in 1986 not only catapulted the Bhutanese economy into a much higher orbit of sustained growth, but also enabled its fiscal regime to rely increasingly on domestic resource mobilization, rather than foreign grants, as a means of financing its budgetary expenditure. Subsequently, periodic revision of the tariff at which hydroelectricity has been sold to India has ensured that Bhutan has continued to extract sizeable rents from the use of its water resources. The pertinent question then becomes how significantly have the poor benefited from the rents extracted from this vital natural resource?

Fungibility of funds means that it is not very meaningful to ask exactly where the money extracted

⁴⁴ These issues are discussed further in Chapter 8 on agriculture and Annex 2 on subsidies.

from hydropower has gone compared to other sources of funds. It is, however, interesting to note the manner in which the fiscal regime has responded each time the electricity tariff was revised upward. The most conspicuous aspect of this response is that with each upward revision of tariff in recent years the government revised the salary of the civil servants upward, often by a large amount. The following statistics are quite revealing.

In January 1997, power tariff for the export market increased from Nu. 0.50 per unit to Nu. 1.00 per unit. The additional revenue generated by this revision was about Nu. 623 million. The ensuing pay rise for civil servants absorbed Nu. 186 million, which amounted to some 30 percent of the additional revenue generated by tariff revision. In June 1999, power export tariff increased again, from Nu. 1.00 to Nu. 1.50 per unit, providing additional revenue of Nu. 670 million for the 1999/2000 fiscal year. Once again, the civil service pay scale was revised upward, which cost Nu. 430 million, amounting to 64 percent of the additional revenue. The latest revision of tariff took place in January 2005, raising it from Nu. 1.50 per unit to Nu. 2 per unit. This has generated an additional revenue of Nu. 739 million for the government exchequer. At the same time, the ensuing salary revision for civil servants and elected leaders has cost the government an additional Nu. 520 million, absorbing some 70 percent of the additional revenue.

Taking the latest three tariff revisions together, as much as 56 percent of the additional revenue generated by higher tariffs appears to have gone to the civil servants and elected representatives. Much of it was no doubt well deserved. The pay scale for civil servants was kept frozen for long periods; eroding their real income. The additional revenue generated by tariff revision gave an opportunity to restore civil servants pay. On the whole, the civil servants in Bhutan are paid reasonably well in comparison with other countries in South Asia, and have a reputation for being honest and efficient—something that cannot often be claimed for their counterparts in the rest of South Asia. If the civil servants and elected representatives are expected to serve the country with honesty and diligence, their financial remuneration must also be commensurate with that expectation. In that respect, it was perfectly reasonable to use part of the revenue generated by tariff revisions to remunerate the administrators.

What is at issue here is the proportion of revenue that has been used for this purpose. If more than half of the additional revenue has been utilized to support what must be a miniscule proportion of total population, most of whom would belong comfortably to the non-poor segment of the population, the distribution of the revenue generated by tariff revision could not have been pro-poor by any means. In fact, whichever way the remainder of the additional revenue was utilized, the per capita benefit accruing to the poor population must have been a tiny proportion of the per capita benefit accruing to the governing elite. The way in which the huge bonanza expected from the imminent commissioning of the Tala hydropower project is distributed among the populace remains to be seen.

7.2 Monetary and Financial Policy and Poverty Reduction

One of the most important ways in which monetary policy can help the poor in a country like Bhutan is by promoting monetization of the economy in an orderly and non-inflationary manner.

The use of money as a means of transactions is a relatively recent phenomenon in Bhutan; vast swathes of the rural economy are still dominated by barter. A barter-based system may suffice for people living at the edge of subsistence, but if poor people want to move up the economic scale, they will need to sell their products at the best possible prices; they will have to acquire the best possible inputs and technology from far afield, if necessary; and they will have to accumulate and borrow for productive purposes. None of these things can be effectively done without the intermediation of money. In short, perpetuation of barter will condemn the poor to a perpetual state of poverty. Monetization is, therefore, the most elementary foundation on which to build any strategy for poverty reduction (notwithstanding the nostalgia that the apparent simplicity of a barter economy tends to evoke in certain romantics). In this respect, monetary policy has done quite well in Bhutan. Although it is difficult to be precise about the level of monetization in Bhutan, some rough estimates made in Chapter 5 suggested that the degree of monetization has increased at least 15-fold during the last two and a half decades, which is significant progress by any standards. The fact that such rapid monetization has occurred in an environment of relatively low inflation makes the process even more helpful for the poor.

The relationship between inflation and poverty has been commented upon before as it relates to fiscal policy and budget deficits. Yet one additional related issue still needs to be stressed in the context of monetary policy. It is often suggested that inflation in Bhutan is tied to inflation in India because of the peg between the ngultrum and the Indian rupee and the existence of free trade between the two countries. This is, however, only partially true. It is only the prices of tradables that happen to be tied to Indian prices, and Bhutan's monetary policy can do very little about it. Excessive money supply can still, however, do a lot of harm in Bhutan, by raising the prices of non-tradables. This can have two substantive consequences, both of which can have harmful effects on the poor.

First, faster inflation among the non-tradables will erode the purchasing power of the poor to the extent that they consume products and services but cannot fully adjust the prices of the goods and services sold by them (including their own labour). Second, given a moderate rate of inflation among tradables as determined by inflation in India, runaway inflation among the non-tradables will cause an appreciation of the real exchange rate. This will encourage non-tradable activities such as construction, which does not use much labour (and most of the labour it does uses is Indian rather than Bhutanese), at the expense of tradable activities such as tourism and niche products based on agricultural and forestry resources, which have a greater potential to employ Bhutanese workers provided they are equipped with the necessary skills.⁴⁵ The consequence of any such shift in the structure of incentives will be detrimental by the interest of the poor.

If the Bhutanese poor are to lift themselves out of poverty, they must be given the opportunity to find productive employment involving those niche products in which Bhutan has a comparative advantage. Any appreciation of the real exchange rate will jeopardize the prospects of such tradable activities. Furthermore, by discouraging the production of tradables, appreciation of the real exchange rate will harden the foreign exchange constraint, which as argued in this report is perhaps the binding constraint restricting the growth of the Bhutanese economy today. By limiting growth, any further hardening of this constraint will also restrict the scope for creating productive

⁴⁵ *The potential of these niche products has been discussed in detail in Chapters 8, 9 and 11.*

employment for the poor. It is, therefore, essential for the sake of the poor that monetary policy is conducted in a cautious manner so as not to raise the real exchange rate by pushing up the price of non-tradables vis-à-vis the tradables.

Unfortunately, Bhutanese data are not detailed enough to permit a definitive assessment of what has actually been happening to the real exchange rate. However, there are some rough indications. The fact that overall inflation has been low and stable and that it has broadly tracked Indian inflation would seem to suggest that the separate inflation rates for non-tradables and tradables have perhaps not been too far out of line with each other. If true, this would imply relative stability of the real exchange rate.⁴⁶ The monetary authorities will have to ensure that it remains that way in future as well, so as not to jeopardize the prospect of growth and poverty reduction.

Another aspect of monetary and financial policy that needs some probing, as it relates to poverty reduction, is the effect of financial liberalization that was carried out in the late 1990s. It was noted in Chapter 5 that liberalization has had two major consequences for the financial sector: (a) contrary to expectations, it has led to a widening of the spread between lending and deposit rates, and (b) it has resulted in some significant changes in the allocation of credit. Neither of these consequences has been particularly beneficial for the poor.

While liberalization was expected to bring about a lowering of interest rates and a narrowing of the spread between lending and deposit rates through the forces of competition, this has not happened for the simple reason that there is no competition in the financial market. The scale economies inherent in financial intermediation combined with a small domestic market has inevitably foreclosed the possibility of competition. What has emerged is essentially a duopolistic market structure, in which the major player (the Bank of Bhutan) sets the trend and the smaller player (Bhutan National Bank) follows suit. In the days of interest rate control, this market structure was dormant; with liberalization it has become effective, making monopoly pricing possible. The rise in the spread between lending and deposit rates is simply a reflection of this monopoly pricing. The banks have used their market power to push down the deposit rate (behaving like a monopsonist in relation to the depositors) and at the same time to resist pressure to bring down the lending rate (behaving like a monopolist in relation to the borrowers).

The resulting increase in the spread has clearly boosted the profitability of the banking sector in the short run, but it threatens to slow down the pace of financial intermediation, to the eventual detriment of all concerned, including the banking sector itself. The poorer segment of the population would be particularly hurt by this development. The poor of Bhutan need to find productive employment in all sectors of the economy in order to raise their living standards. But financial disintermediation, induced by low deposit rates and high lending rates, would slow down the growth of potentially employment-generating activities outside the hydropower sector and related activities.⁴⁷

⁴⁶ *One would expect the inflation rate for the tradables to track Indian inflation well. If the overall rate of inflation has also tracked Indian inflation well, this would indicate that non-tradable prices have risen at roughly the same rate as tradables. However, these are very rough judgements. Much more detailed research is needed in order to judge with a reasonable degree of confidence what has been happening to the real exchange rate in Bhutan.*

⁴⁷ *The hydropower sector may be insulated from the effects of financial disintermediation by virtue of having an independent source of finance in the form of foreign grants. However, this sector does not generate much direct employment anyway.*

Liberalization may have helped lessen the inefficiencies associated with administered credit and controlled interest rate, but it has also generated new inefficiencies associated with monopoly pricing. The solution, of course, does not lie in returning to the mode of administered credit. However, in recognition of the fact that the financial market of Bhutan is a ‘natural monopoly’, a completely free market policy cannot be recommended either. Some form of regulation is needed—not just prudential regulations that are needed even in a competitive financial market, but more intrusive regulation designed to prevent monopoly pricing.

The second effect of liberalization is a marked change in the allocation of credit among the productive sectors, and this change has not been beneficial for the poor. As noted in Chapter 5, the share of agriculture in total credit was already low before liberalization, and has become even lower now, accounting for just about 2 percent of all credit for the private sector in 2004. Similar is the case with credit for small and cottage enterprises—their share was low to begin with and has declined even further. These are the sectors in which the immediate interests of the poor people lie, especially in rural areas. Reduction in their already low share of credit does not bode well for the poor people’s prospect of escaping poverty through more productive employment.

A compensating factor, however, is that the government of Bhutan has initiated a microcredit programme for the benefit of small farmers, administered by the Bhutan Development Finance Corporation (BDFC), an institution originally designed to lend long-term capital to private investors. While the programme has an advantage insofar as BDFC is equipped with an already established network of branches all over the country, which makes it relatively easy for it to reach the scattered population of agriculturists, it has to overcome a number of obstacles.

One major administrative problem is that BDFC is not a dedicated microcredit institution; its main activity is in fact outside agriculture and geared towards larger borrowers. Experience from around the world shows, however, that the business of microcredit is a business like no other; it requires dedicated staff and innovative approaches which often prove to be beyond the capacity of those steeped in the business of traditional finance. Bhutan is also disadvantaged by the fact that unlike most other developing countries in the region it does not have a significant presence of NGOs, who could help establish a much-needed bridge between small borrowers and financial institutions. Furthermore, partly because of the low density of population and partly owing to the tradition of the welfare state, rural people do not have a tradition of forming self-help groups. Such groups could facilitate microfinance operations by working as conduits of funds on the one hand and as a means of enforcing repayment discipline on the other. On the contrary, the tradition of the welfare state has implanted an attitude among the rural people in which they view loans from institutions (such as BDFC) as a welfare handout (*kidu*) that does not have to be repaid, rather than as a business loan that must be invested productively so that it can be repaid with profit. It remains to be seen how well the current microcredit programme will manage to overcome these myriad obstacles and help the rural poor improve their productivity—offsetting the negative consequences of declining shares of public investment and private sector credit for agriculture.

7.3 Trade Policy and Poverty Reduction

The most distinguishing aspect of the trade policy of Bhutan is its completely open trade policy

with India—by far its largest trading partner—based on a long-standing bilateral Free Trade Agreement. The transactions with India are carried out in Indian rupee, with which the ngultrum maintains free and unlimited convertibility on a one-to-one basis. By obviating the need for the use of hard currency as a medium of exchange with India, and by allowing free trade between the two countries, this policy regime has vastly enhanced the size of Bhutan’s trade with India than would otherwise have been possible. This enhanced volume of trade has generally been highly beneficial for Bhutan. The benefit has derived from two sources: greater scope for specialization in production on the one hand and increased availability of a wide range of consumption goods on the other, which Bhutan is simply not equipped to produce efficiently, given its small domestic market and the geographical barriers to trade with the rest of the world.

The most direct and immediate benefit for the poor lies perhaps not so much in the greater scope for specialization in production as in the increased availability of consumption goods, including essential foodstuff. Rice is the principal staple of Bhutan and is produced in various parts of the country, but the agro-topographical conditions of the country are not ideally suited to a vast expansion of its production.⁴⁸ Given this natural limitation on the production of the most important staple, Bhutan could have easily faced a binding wage-goods constraint to its drive for rapid economic growth if it had to rely mainly on domestic production to meet the vastly increased demand for staples. The enhanced volume of trade with India promoted by the existing policy regime has helped Bhutan keep this particular constraint at bay.

Large volume of imports of rice and other essential foodstuff from India has thus helped the Bhutanese poor both directly and indirectly. Directly, it has helped them by keeping the cost of living down. Indirectly, it has helped them by removing the wage-goods constraint, which has allowed faster growth and thereby faster expansion of opportunities for productive employment than would otherwise have been possible.

While the poor of Bhutan have clearly gained from the boost to import trade given by the policy regime, it is less clear whether and how they have gained in any significant way from the boost to export trade given through incentives for specialization and export-oriented production. Usually when a labour-abundant developing country promotes free trade and export-oriented production, the poorer segment of the country can hope to benefit handsomely as export orientation leads to specialization in labour-intensive activities. This has evidently happened in the economies of East and South Asia when they moved towards export orientation. Bhutan, however, is not a typical Asian developing country—it is poor but not labour-abundant. In terms of resource endowments, it is more accurately described as being abundant in natural resources, especially water resources and forestry. Not surprisingly, its comparative advantage lies, at least in the short run, in natural resource based activities. This is evident from the fact that over 70 percent of its export earnings are derived from natural resource based exports (Chapter 6, Table 6.4).

Thus any effect of export orientation on the employment prospects for the poor would depend on whether the technologies used in the resource-based industries happen to be labour-intensive or not. This is more a matter of technology than trade orientation as such, since export orientation would not by itself lead to specialization in labour-intensive activities in a labour-scarce country

⁴⁸ See the discussion on the constraints to agricultural production in Chapter 8.

like Bhutan. As it happens, the technology used in the export-oriented industries is not particularly kind to Bhutanese labour, at least in the short run. The two major components of resource-based export-oriented activities are hydropower and power-intensive industries (cement, ferro alloys and calcium carbide), both of which are highly capital intensive.⁴⁹ Expansion of these activities does not lead to substantial increase in employment, either directly or indirectly through linkage effects, and any additional employment it does generate goes mainly to Indian labour, which is both cheaper and more experienced compared to Bhutanese labour. This is not to suggest that an alternative trade policy regime based on protection and inward-looking import substitution would be any more helpful for the poor, but that the export orientation of Bhutan's trade policy regime has so far contributed little towards creating employment opportunities for the poor.

As discussed later in the context of a long-term development strategy for Bhutan (Chapter 12), it is only in the longer run that export orientation could possibly make a substantial contribution towards opening up employment opportunities for the poor. For this to be possible, however, conscious attempt must be made to create dynamic comparative advantage in skill-based low-volume, high-value activities. It should be possible for Bhutan to develop such activities, making use of natural resources and skilled labour in a complementary manner. This will, however, require a lot of preparatory work. Of the ingredients required to make a success of this strategy, the only one Bhutan has in plenty at the moment is natural resources. Two other important ingredients, which it does not have at the moment, are technology and skilled labour. It is the acquisition of the necessary technology and skill that should be the focus of a policy regime aimed at creating dynamic comparative advantage. This implies creating opportunities for the currently unskilled poor people of Bhutan to acquire the necessary skills and giving incentives to potential investors to import or adapt the relevant technologies. Only if this strategy succeeds would export orientation be a major mechanism for lifting the poor out of poverty, by giving them opportunities for productive employment in the export sector.

A pertinent question to ask is whether the current trade policy regime is supportive of, or at least compatible with, this long-term strategy? Unfortunately, there is reason to believe that there are elements of the current policy regime that could militate against the demands of the long-term strategy. The most important way in which the skills and technology required for the creation of dynamic comparative advantage can be acquired is through 'learning by doing'. In many countries, such learning by doing can be, and has been, accomplished by initially producing for the domestic market under a protective umbrella. But a small domestic market rules out this option for Bhutan. Any attempt at learning by doing in Bhutan will have to be outward-oriented right from the start, and the only way this can be possible is through collaboration with foreign enterprise. Such collaboration will enable Bhutan to acquire the necessary technology and opportunities for skill formation on the one hand and to market the products to the outside world on the other. However, the current policy regime does not seem to be best equipped to deal with the demands of such a strategy.

For understandable reasons, the current policy regime is heavily tilted towards collaboration with Indian capital, which has, so far, yielded rich dividends. However, at its own current stage of development, India is not fully equipped to provide most of the technology, skill-formation opportunities and marketing outlets that Bhutan needs in order to create dynamic comparative advantage in low-volume high-value products based on natural resources and skilled labour.

⁴⁹ *The hydropower industry is discussed extensively in Chapter 10 and the power-based industries in Chapter 11.*

Therefore, while making the most of its close economic ties with India, Bhutan will at the same time have to look beyond India to more developed countries that have the necessary technological capabilities and marketing channels Bhutan needs. The current policy regime, however, does not promote such a broadening of horizon.

One indication of the horizon not broadening is the complete absence of any FDI into Bhutan from countries other than India, despite the adoption of a reasonably liberal FDI policy in 2002. The landlocked character of Bhutan does not of course inspire much enthusiasm among foreign investors, but somehow an incentive structure must be created that overcomes this natural disadvantage. At the very least, obvious disincentives must be removed. One such disincentive lies in the range of restrictions imposed on the scope for repatriation of profits. The FDI policy stipulates that repatriation in hard currency will be allowed only insofar as it can be paid out of the hard currency exports of the enterprise concerned. The problem with this stipulation is that any foreign firm seeking to invest in Bhutan will naturally want to sell a considerable part of its output in the vast and expanding Indian market, but exports to India will only be paid for by Indian rupee, which is non-convertible in the capital account. Therefore, at the initial stage at least, the stipulation of allowing repatriation only out of hard currency exports would not seem particularly attractive to foreign investors with an eye on the Indian market.

A further indication that the horizon is actually shrinking rather than broadening comes from the evidence on the import of capital goods discussed in Chapter 6. It was shown there that the share of capital goods imported from countries other than India has actually halved in the last decade—from around 56 percent in the mid-1990s to 29 percent in recent years. Since, as argued above, Indian capital goods are not close substitutes of the kind of capital goods Bhutan needs in order to create its dynamic comparative advantage this decline in the import of non-Indian capital goods should be a matter of concern.⁵⁰ While hard currency import of capital goods has declined, Bhutan's reserves of hard currency have skyrocketed, as the Royal Monetary Authority has argued that high levels of reserves are needed as a buffer against sudden large demands on scarce hard currency.

There is an obvious dilemma here. Restrictions—such as the one on repatriation mentioned above and the urge to accumulate huge reserves—derive from an acute scarcity of hard currency in Bhutan, as over 90 percent of its exports take the form of rupee trade with India. And yet, these policies perpetuate the very same scarcity of hard currency by preventing the establishment of enterprises capable of earning it. Some way must be found to get out of this vicious circle. One obvious possibility is to vigorously promote activities such as tourism and export of forest-based products, in which Bhutan has a natural comparative advantage, and to turn them into major earners of hard currency. Admittedly, these activities are not the low-volume, high-value skill-based products in which Bhutan ought to be seeking to specialize in the long run. Nevertheless, they should be seen as short-term expedients, whose primary role would be to ease the hard currency constraint that currently stymies the creation of the necessary dynamic comparative advantage by constricting the inflow of foreign capital and technology.

⁵⁰ *The capital goods imported from India are being used mainly in hydropower projects and construction industry, and as transport vehicles.*

The point may be summarized as follows. Bhutan will of necessity be an export-oriented economy, but the current pattern of export orientation, based on static comparative advantage, does not do much by way of creating productive employment for the poor. For the poor of Bhutan to gain from export orientation, a long-term strategy must be adopted that would turn the unskilled labour power of the poor into skilled labour and, at the same time, create dynamic comparative advantage in skill-intensive low-volume, high-value products.

In order to create such a comparative advantage, Bhutan has no choice but to embrace foreign capital and technology with open arms. While Bhutan does have such an open policy on paper, in practice various restrictions stand in the way, which emanate essentially from the very severe shortage of hard currency the country faces. Eventually, when the desired dynamic comparative advantage is developed, this scarcity of hard currency will be eased. This future will not materialize, however, unless some way is found to ease the hard currency constraint today, so that foreign capital and technology can enter relatively unhindered and create the desired comparative advantage. This is where activities such as tourism and export of forest-based products are needed, to solve the short-run problem of hard currency constraint.

The government of Bhutan has so far followed a rather cautious policy in respect of these sectors because of the potentially damaging environmental consequences of rapid growth in tourism and forest-based industry. This caution is understandable, especially in view of Bhutan's commitment to the gross national happiness (GNH) approach to development, in which the concern for environment plays a central role. What the preceding argument suggests, however, is that Bhutan may have to contemplate some inevitable trade-offs. The need for promoting tourism and trade in forest-based products arises not just to promote growth but primarily to help the realization of a long-term strategy for poverty reduction. If this strategy is deemed sensible, then it does lead to a trade-off between the concern for the poor and concern for the environment, both of which are indispensable components of the GNH approach. While exactly how this trade-off is to be resolved is for the Bhutanese people to decide, it is an issue that cannot be ignored by them.⁵¹

7.4 Summary and Conclusions

This chapter analyses the impacts of all three components of macroeconomic policy—namely fiscal policy, monetary/financial policy, and trade policy—on poverty in Bhutan. Two aspects of fiscal policy are particularly relevant in the context of poverty reduction in Bhutan, this includes the overall fiscal stance and sectoral allocation of budgetary expenditure.

The overall fiscal stance of Bhutan has been characterized by a cautious approach towards budget deficits. This, together with the policy of pegging the ngultrum to the Indian rupee, has helped to keep inflation down. The poor people of Bhutan have benefited from this in two ways. First, since inflation acts like a regressive tax, lower inflation has benefited the poor proportionately more than the rich. Secondly, low inflation has the potential to create more employment opportunities for the poor by creating a stable environment for investment.

⁵¹ *The issue of trade-offs between different components of the GNH approach is discussed further in Chapter 12 in the context of the proposed long-term development strategy for Bhutan.*

Low deficit may, however, harm the poor if it is achieved by pursuing an excessively contractionary policy that depresses aggregate demand and thereby restricts the growth of productive employment. This, however, does not seem to have been the case in Bhutan. Deficits have been kept low not by following a contractionary policy but with the help of generous budgetary support received from India.

The most ostensibly pro-poor aspect of fiscal expenditure in Bhutan is the high proportion of resources allocated to health and education. During 2004/05 the education and health sectors together received 28 percent of total expenditure, which is a much higher percentage compared to what is typically observed in developing countries. Several aspects of this emphasis on social sectors are worth noting.

First, in a bid to ensure that the benefits of social sector spending can spread far and wide, the government of Bhutan has tied such spending closely to its initiatives for administrative and fiscal decentralization. Second, expenditure on social sectors is heavily biased towards the priority subsectors that are especially important for the poor, this includes primary education and primary health care. Third, in order to protect essential health services from cuts in spending that may be necessitated by unforeseen shortfall in resources the government of Bhutan has recently set up a dedicated Health Trust Fund.

There are, however, a few aspects of fiscal expenditure that are not so favourable to the poor. First, the regional allocation of expenditure has generally tended to favour the more prosperous regions of the country at the expense of the poorest ones. Secondly, allocation for agriculture has declined sharply over time, with potentially harmful consequences for the majority of the poor people who still subsist on agriculture. Thirdly, more than half of the additional revenue generated by recent upward revisions of power export tariff have been absorbed by pay rises for civil servants and elected representatives, leaving rather little, on per capita basis, for the benefit of the poor.

Monetary and financial policies have also had mixed effects on the poor. The most favourable effects have come from two sources. First, the rapid pace of monetization has helped the poor rid themselves of the inefficiencies of barter. Secondly, by keeping down the prices of non-tradables, slow growth of money supply has prevented any significant appreciation of the real exchange rate, which in turn has prevented the structure of incentives from tilting against the tradable sectors. This is beneficial for the poor since they are more likely to find opportunities for productive employment in tradable sectors than in the non-tradable ones—such as construction, which is highly capital-intensive.

By contrast, the impact of financial liberalization does not seem to have been particularly beneficial for the poor. Liberalization has had two major consequences for the financial sector: (a) it has led to a widening of the spread between lending and deposit rates, and (b) it has resulted in some significant changes in the allocation of credit. Both these consequences have worked against the interest of the poor. The widening spread of interest rates threatens financial disintermediation, which will have negative consequences for creation of productive employment opportunities for the poor. The reallocation of credit has worked against agriculture and small enterprises, precisely the sectors in which the majority of self-employed poor are engaged.

Microfinance has the potential to redress the balance somewhat. The programme, however, is still new, small in size, and has so far favoured the relatively well-off regions of the country. Moreover, most of the preconditions for successful operation of a microfinance programme do not as yet seem to be in place in Bhutan.

The most important aspect of trade policy of Bhutan that is relevant in the context of poverty reduction is a completely open trade policy with India, by far its largest trading partner. The open trade regime has created greater scope for specialization in production, on the one hand, and increased the availability of a wide range of consumption goods, on the other hand. As far as the poor are concerned, however, the most immediate benefit has come not so much from the greater scope for specialization in production as from the increased availability of consumption goods, including essential foodstuff.

Large volume of imports of rice and other essential foodstuff from India has helped the Bhutanese poor both directly and indirectly. Directly, it has helped them by keeping the cost of living down. Indirectly, it has helped them by removing the wage-goods constraint, which has allowed faster growth and thereby faster expansion of opportunities for productive employment than would otherwise have been possible. On the other hand, increasing specialization promoted by the open trade regime has not been of much help to the poor because Bhutan's comparative advantage lies in natural resource-intensive activities, which do not employ much labour (and most of the workers they do employ come from India).

This does not, however, imply that the poor of Bhutan will gain from the opposite policy of trade restriction and inward orientation. Their future clearly lies in an outward-oriented strategy, but one in which the unskilled poor people of today will be able to work as skilled workers, engaged in the production of low-volume, high-value products destined for the world market. In order for this future to materialize, however, a range of policy measures will have to be adopted to create the necessary dynamic comparative advantage.

Bhutan's economy is based on agriculture, which is collectively referred to as the Renewable Natural Resources (RNR) sector in keeping with the Royal Government of Bhutan's integrated approach to farming. This chapter examines the trends, the potentials and the constraints of the food crops, cash crops, and livestock sub-sectors of the RNR sector. Section 8.1 looks at the importance of agriculture for the Bhutanese economy in terms of its contribution to GDP, to employment, to poverty reduction and as a source of foreign exchange. Section 8.2 describes land use and ownership, tenancy patterns and the structure of agricultural production in Bhutan. Section 8.3 deals with the trends, potential and government policies for food crops, cash crops and livestock sub-sectors. In section 8.4, an attempt is made to assess how far the RNR policy framework has succeeded in achieving its objectives of growth and diversification of the RNR sector, and balancing growth with equity (both between farming households and regions), labour absorption and environmental sustainability. Section 8.5 summarizes the main points.

CHAPTER 8

AGRICULTURE: RESOURCES AND POLICIES

8.1 Importance of Agriculture for the Bhutanese Economy

Bhutan is predominantly an agrarian economy. The agriculture sector, consisting of arable agriculture, horticulture, livestock and forestry, employed 79 percent of the population and accounted for 32.7 percent of GDP in 2003.⁵² Prior to 1961, Bhutan was almost totally agrarian with a self-sufficient subsistence economy. Monetization was very low with taxes being imposed in the form of labour, farm products and other products like textiles. Since the launching of the First Five Year Plan (FYP) in 1961, significant socio-economic progress has taken place, accompanied by noticeable structural changes in the economy.

However, reliable data is only available from 1980 onwards. The output of the RNR sector increased in real terms from Nu. 2762 million in 1980 to Nu. 6134 million in 2003, implying a compound growth rate of 3.5 percent per annum (Table 8.1). Although the agriculture sector remains the single largest contributor to GDP with 25.3 percent in 2000 prices, its share of GDP has decreased by 27 percent since 1980. However, it must be kept in mind that large sections of the rural economy still remain outside the formal economy, undervaluing the actual contribution of agriculture to total GDP.

⁵² *Statistics for Bhutan vary. The figure quoted here is from the Statistical Yearbook of Bhutan 2004 (NSB 2005). The Poverty Analysis Report 2004 (NSB 2004b) estimates the rural population to be 80.8 percent whereas the National Labour Force Survey 2004 (DOE 2004) places the rural population at 73.1 percent.*

Table 8.1 Share of Renewable Natural Resources (RNR) in GDP
(percentage share in 2000 prices)

	1980	1990	2000	2003	Growth Rate 1980–2003
1. RNR	52.3	40.3	28.5	25.3	3.5
1.1 Agriculture proper	21.7	16.9	12.8	11.2	3.8
1.2 Livestock production	16.2	12.9	8.9	8.1	3.7
1.3 Forestry and logging	14.3	10.6	6.7	6.0	2.8

Source: NSB (2004a).

While the share of the agricultural sector as a whole to GDP is decreasing, it can be seen from Table 8.2 that the contribution of tree crops has increased in recent years. On the other hand, the contribution of cereals and livestock production has declined.

Table 8.2 Subsectoral Breakdown of Agriculture's Contribution to GDP
(Percentage share in 2000 prices)

	2000	2001	2002	2003
Agriculture proper	12.8	12.3	11.8	11.2
Cereal crops (% of agriculture proper)	63.5	62.4	58.8	58.0
Tree crops (% of agriculture proper)	31.6	32.8	36.8	37.7
Vegetables (% of agriculture proper)	4.9	4.8	4.5	4.3
Livestock	8.9	8.9	8.5	8.1
Total contribution to GDP	28.5	28.0	26.6	25.3

Source: NSB (2004a).

Even after four decades of planned development, the majority of the Bhutanese people are still dependent on agriculture. While the Fifth Five Year Plan (1981-1987) estimated that 90 percent of the population was primarily dependent on agriculture, the first labour force survey held in 1998 found that 76 percent of the labour force was employed in the agriculture sector. Since then, employment in the RNR sector decreased further to 63.2 percent in 2004 (DOE 2004).⁵³

Increasing rural-to-urban migration is the primary reason for the fall in employment in the agriculture sector. The study on rural-to-urban migration carried out by the Ministry of Agriculture found that 47 percent of all rural households had migrants (MOA 2005b). While lack of educational facilities was the stated reason for migrating for 46 percent of the migrants, 19 percent left their villages because of small landholdings, drudgery of farm work, unproductive agriculture, crop damages by wild animals and natural calamities.

The stated objective of the Royal Government of Bhutan is to create employment opportunities in rural areas so as to sustain current levels of employment and halt rural-to-urban migration,

⁵³ As discussed in Chapter 3, however, there are some data inconsistencies in this regard that makes it hard to make precise estimates of labour force engaged in different sectors of the economy.

and thereby alleviate economic and social problems from urbanization and unemployment (MOA 2002a). The objective is also to generate new employment opportunities in rural areas and establish agriculture as the basic sector for sustaining the country's economy.

Agriculture also makes significant contribution to Bhutan's foreign exchange earnings. Bhutan's landlocked position and poor access to world sea and air routes limits its trade to the geographically proximate region. Only high-value products that are able to overcome the disadvantage of high transport costs or those that enjoy seasonal comparative advantage are exported. These have been largely confined to tree crops, vegetables and spices. Bhutan's comparative advantage in the agricultural sector derives from its wide range of microclimatic conditions that allows it to cultivate a large variety of produce. Coupled with the fact that its neighbours are mainly tropical agricultural producers and that Bhutan is able to produce temperate zone crops one month later than its neighbours, making it virtually the only source of fresh produce in the region for certain periods of the year.

Although the large markets in India and Bangladesh can absorb all that Bhutan can produce, limited land and the huge variety of microclimates have constrained the establishment of large-scale farming. Agricultural exports include oranges, apples, potatoes, cardamom, ginger, chillies, vegetables and processed fruit products and are exported to India, Bangladesh, Singapore and Japan. Table 8.3, which traces Bhutanese agricultural exports to India and other countries, shows that agricultural exports have accounted for 10-12 percent of total exports to India for the period 1998-2003. Agricultural exports to countries other than India form 65-70 percent of total exports. Oranges, with an earning of Nu. 145.8 million, was rated the seventh top commodity export in 2003. Mixture of juices was the ninth top commodity export, with an export earning of Nu. 100 million (RMA 2004).

Table 8.3 Agricultural Exports: 1998 and 2003

	1998		2003	
	India	Others	India	Others
Value (Nu. million)	486.7	192.1	648.3	170.9
% of total exports	11.6	68.6	10.9	64.7

Source: RMA (2003, 2004).

The performance of the agriculture sector—which provides a livelihood for the majority of the population—has major implications for poverty reduction and standards of living in the country. Accordingly, agricultural development is central to the government's poverty reduction efforts and the RNR sector aims to alleviate poverty and raise the standard of living through a Triple Gem approach to agricultural development by increasing productivity, accessibility and marketing.

The importance of agriculture and the role of comprehensive rural development programmes in the overall strategy for reducing poverty is recognized by the Poverty Reduction Strategy Paper (DOP 2004) for Bhutan. The challenges for poverty reduction include increasing incomes of the people in general, and the poor in particular, as well as tackling vulnerabilities such as including food insecurity.

The Food Corporation of Bhutan (FCB), a government-owned corporation, is a key player in poverty reduction. The FCB operates a support price system both for food grains and cash crops while at the same time operating a public distribution system. At the beginning of each crop-year the FCB sets support prices; the price at which it will purchase any amount of produce offered. It also looks after the management and distribution of cereals on behalf of the World Food Programme, and the management of a security reserve of cereals. The FCB, with over 99 fair-price shop agents retailing FCB products, is the source of food in times of food shortages.

8.2 Structure of the Agricultural Sector

8.2.1 Land Use Pattern

While Bhutan has a low population density, with less than 45 people per sq. km, according to the RNR Statistics 2000 (MOA 2002b), out of the total land area of 40,076 sq. km, only 311,098 ha or 7.8 percent is agricultural land.⁵⁴ The area suitable for agricultural production is limited by the steep and rugged terrain, altitude and the high priority given to maintaining forest cover. As can be seen from Table 8.4, Kamshing or dryland accounts for the largest area of agricultural land, followed by tsheri/pangshing or shifting cultivation. Chhuzhing or wetland, used primarily for rice cultivation, accounts for around 1 percent of the total land cover and orchards account for less than 1 percent. Almost 4 percent of the country is used for tsamdruk or pasture.

Table 8.4 Land Cover and Area

Land Cover	Area (sq. km)	%
Agriculture	3146	7.8
1. Wetland	388	1.0
2. Dryland	977	2.4
3. Mixed cultivation	840	2.1
4. Shifting cultivation	883	2.2
5. Horticultural plantations	36	0.1
Forests (including scrub)	25,787	72.5
Pasture	1564	3.9
Others	6289	15.7
Total	40,076	100.00

Source: MOA (1997).

The actual operated agricultural area is 104,710 ha, out of which 21 percent is wetland, 43 percent dryland, 27 percent is under shifting cultivation, 8 percent consists of orchards and 1

⁵⁴ The average density for Asia is 136 people per sq. km, as given in http://earthtrends.wri.org/pdf_library/country. It should also be noted that the Statistical Yearbook of Bhutan 2004 (NSB 2005) estimates Bhutan's area to be 38,394 sq. km. The Selected RNR Statistics for 2003 (MOA 2005a) estimates the total agricultural land to be 197,969 ha.

percent is cultivated as kitchen gardens (see Table 8.5). Further, the farming communities have user rights over 7181 ha of sokshing (forest land) and 171,296 ha of tsamdruk (natural pasture).

Table 8.5 Land Use by Farm Households

Type of land	Percentage of households who own/operate	Percentage share of operational area
Wetland	58.9	21
Dryland	86.9	43
Shifting Cultivation	47.5	27
Kitchen Garden	25.5	1
Orchard	28.0	8
Sokshing	27.7	-
Tsamdruk	5.4	-

Source: MOA (2002b).

While around 59 percent of rural households own and operate wetland areas, the distribution of the wetland is highly skewed, with about 71 percent of the total wetland available in Bhutan located in the rice-growing dzongkhags of Paro, Samtse, Punakha, Wangdue, Tsirang, Dagana, Sarpang and Trashigang.⁵⁵ Furthermore, 65 percent of the total wetland acreage consists of holdings of less than 5 acres which are spread across the country. About 87 percent of the rural households own and operate 45,200 ha of dryland, of which two thirds lies in Chhukha, Samtse, Tsirang, Dagana, Sarpang, Mongar, Trashigang and Samdrup Jongkhar dzongkhags. Maize is the dominant crop planted on dryland.

As can be seen from Table 8.5, shifting cultivation is practised by almost half of the farm households (47.5 percent) in Bhutan and this form of cultivation covers about 28,480 ha or around 27 percent of total agricultural area. Tsheri is predominant in Chhukha, Samtse, Bumthang, Zhemgang, Mongar, Trashigang, Pemagatshel and Samdrup Jongkhar dzongkhags.

Orchards constitute 8 percent of the total agricultural operated area and are owned by 28 percent of the total farm households. While apple cultivation is restricted to mainly Thimphu and Paro, about 77 percent of the orange orchards are located in southern Bhutan.

8.2.2 Land Ownership and Tenancy Pattern

Landholdings are fairly evenly distributed in the country but fragmented with small parcels of land in different locations. The majority of the farmers own only a limited amount of land, with around 33 percent of farming households owning less than three acres each. In fact, more than half of the total farming households (55.7 percent) own less than 5 acres each, accounting for one third of the total agricultural land.

⁵⁵ The Food and Agriculture Organization (FAO) estimates 92 percent of the wetland to be located in the southern and the western regions of Bhutan.

As can be seen from Table 8.6, there are significant inequalities in landownership, with less than 10 percent of the households owning 10 acres or more and accounting for over 30 percent of the total agricultural land available. On the other hand, nearly 14 percent of the total agrarian households owning less than an acre account for only 1.4 percent of land. The problem of landlessness is not as acute, however, as in other South Asian countries. Some 2.6 percent of all households are estimated to be landless; distributed sporadically across all 20 dzongkhags. Landless households have the option of appealing to His Majesty the King for farm land as kidu (welfare grant)—which is normally granted, up to a maximum of 5 acres from vacant government land.

Table 8.6 Agricultural Landholding of Farm Households

Size Group (acre)	Percentage of Households	Percentage of Operational Area
< 1	13.7	1.4
1–2.99	33.7	14.7
3–4.99	22.0	19.2
5–6.99	13.5	17.4
7–9.99	8.4	15.7
10–25	8.0	25.8
> 25	0.6	5.9

Source: MOA (2002b).

In Bhutan, the land tenure system is composed of private, communal (including religious institutions and monk bodies) and government-owned land. Agricultural land is mostly owned by farmers and usually consists of parcels of different highly fragmented categories of land (wetland, dryland, etc.). While the inheritance of land is generally patriarchal in southern and central Bhutan, it is common practice for daughters to inherit the land in the western and eastern parts of the country. The Land Act of 1979 guarantees the right of ownership of land and also sets the household land ceiling at 25 acres (excluding orchards) and prohibits the sale or transfer of land when the total holding of the seller is five acres or less.⁵⁶

The structure of land tenancy in Table 8.7 is shown separately for wetlands and drylands. Of the 21,607 ha of wetland, 84 percent is owner-operated and about 8 percent is leased out mainly due to shortage of farm labour. Around 76 percent of the dryland cultivated is owner-operated and about 3 percent is leased out. A significant proportion of agricultural land is left fallow primarily because of the lack of irrigation or damage from wild animals (around 29 percent of wetland and dryland combined).

⁵⁶ Although precise data is not available, a significant share of the agricultural land is known to be owned by religious institutions and monk bodies. Such land cannot be sold or transferred and these holdings are not subject to the land ceiling applied for individual holders. Agricultural lands of such institutions are usually sharecropped or leased out (Dorji undated).

Table 8.7 Wet and Dry Land Area by Land Tenancy Status

		Hectares	% of Households
Wetland	<i>Owned and Operated</i>	18,193	84
	<i>Leased in</i>	1425	6
	<i>Leased out</i>	1819	8
	<i>Left Fallow</i>	1595	8
Dryland	<i>Own and Operated</i>	34,160	76
	<i>Leased in</i>	742	1
	<i>Leased out</i>	1510	3
	<i>Left fallow</i>	9440	21

Source: MOA (2002b).

8.2.3 Structure of Production

The production system, which is determined by the country's diverse agro-ecological conditions and topographic features, can be divided into six zones according to temperature, rainfall and altitude. These are the alpine, cool temperate, warm temperate, dry sub-tropical, humid and wet subtropical zones. Their respective production systems are given in Table 8.8.

Table 8.8 Production Systems by Agro-Ecological Zones

Zone	Main Farming system	Crop	Livestock	Horticulture
Alpine	Pastoral production	High-altitude barley, buckwheat, mustard and few vegetables	Yaks	-
Cool temperate	Livestock rearing	Buckwheat, barley and wheat are traditional crops. Potato is main cash crop	Cattle, yaks, sheep and horses	Apple, pear, peach, walnut, potato and other vegetables
Warm temperate	Most productive	Paddy in irrigated areas, barley and potatoes on dryland. Cabbage, cauliflower, chilli, broccoli, tomatoes	Cattle, horses, poultry and pigs	Apples, pears, peaches, nuts potato and other vegetables
Dry subtropical	Tsheri/pangshing	Maize, millet, pulses and vegetables	Cattle, horses, poultry, pigs	Some fruits, lemon grass, potato and other vegetables
Humid subtropical	Paddy production	Mustard, wheat, pulses and vegetables are grown in rotation with rice	Cattle, poultry and pigs	Citrus, cardamom, some tropical fruits and potatoes
Wet subtropical	Paddy production	Mustard, wheat, pulses and vegetables are grown in rotation with rice	Cattle, poultry and pigs	Citrus, cardamom, ginger, areca nut, some tropical fruits and potatoes

Source: Adapted from MOA (2002a).

Farming systems in Bhutan can be broadly classified into the following:

- Chhuzhing, a wetland dominated farming system where rice is cultivated in terraced irrigated land,
- Kamshing, a dryland dominated farming system on generally dry sloping lands in the subtropical and temperate agro-ecological zones with maize, potato and wheat as the main crops,
- tsheri/pangshing, a shifting cultivation dominated farming system, which is particularly practised in the southern foothills for growing maize, millet, buckwheat and upland rice,
- mixed farming, a system which includes areas of wetland, dryland and tsheri cultivation, and
- pasture/livestock, a farming system dominated in the higher altitudes where it is either too cold or the growing season is too short for crop cultivation. Herders migrate with their livestock, mostly yak and sheep, to lower elevations before the winter, to avoid snow and to search for better pasture and fodder. Animal products such as butter, cheese and woollen blankets are bartered/sold for food items with other farmers and some male yaks are usually culled during winter and sold in urban centres.

Livestock, mostly cattle, are integrated in all farming systems and are an important source of draught power and fertilizer in the form of farmyard manure. Most families combine sedentary agriculture with shifting cultivation to satisfy cash income needs from permanently cultivated land and subsistence needs from shifting cultivation. The main cereals cultivated in Bhutan are rice, maize, wheat, barley, millet and buckwheat, while cash crops include oranges, potatoes, apples, plums, walnuts and vegetables (forest products, including medicinal and aromatic plants, are discussed under the chapter on forest resources). Cereal cultivation is dominated by maize and rice. Maize is cultivated by around 69 percent of the farming households, while around 55 percent of the households grow rice.

Purchased inputs are limited and include improved seeds, small amounts of fertilizers and pesticides. The Druk Seed Corporation functions as the main supplier of seed and fertilizer through its regional branches and commission agents located in most parts of the country. Inputs such as seeds, seedlings, fertilizers and plant protection chemicals are distributed and sold to farmers through private commission agents appointed by the Ministry of Agriculture. While most of the subsidies on inputs, except those for promotional purposes, do not exist anymore, transportation of farm inputs is subsidized by the government so that all farmers have access to the inputs at the same price. The input supply system is constrained by lack of proper storage facilities, transport and access roads.

The main source of farm nutrients in all the agro-ecological zones comes from farmyard manure (FYM) and forest leaf litter. The RNR Statistics 2000 (MOA 2002b) estimated that around 139,000 tonne of FYM was applied to cereals and horticultural crops in the year 2000. On the whole, only small quantities of chemical fertilizers (only about 4.3 kg of plant nutrient per ha per year of cultivated land in 2000) or pesticides are used. Chemical fertilizers are mainly restricted to crops with higher returns such as paddy, potato, chilli and tree crops such as apples and oranges. Around 30 percent of households reported to have used chemical fertilizers amounting to 1800 tonne in 2000.

The use of plant protection chemicals has decreased since the mid-1990s. This was a consequence of the partial removal of subsidies, the abolition of several hazardous chemicals (all taken off the market for environmental concerns) and the introduction of Integrated Pest Management practices.

The Agricultural Machinery Centre in Paro and its three regional centres at Bondey, Bajo and Khangma supply subsidized farm machinery, tools and implements, as well as provide repair services. Yet, even so farming systems predominantly employ traditional labour-intensive production methods as there is little scope for mechanization on steep slopes.

The monsoon is the determining factor of the summer crop calendar. Within agro-ecological zones there are considerable variations in rainfall arising from differences in altitude, temperature and slope. The winter cropping calendar is determined by temperature differences and both the length and the severity of winter. The warm temperate zone is relatively the most fertile zone. Irrigation is largely limited to the wetland for growing rice, whereas the dryland (predominantly used for maize cultivation) is dependent on the monsoons.

Irrigation is essential for most of the rice grown in the mid- and high-altitude zones, while in the low-altitude southern foothills, rice cultivation is largely dependent on rain. Irrigation systems in Bhutan are small—typically less than 100 ha in extent—and generally gravity-fed from streams. Only two large-scale systems have been developed, the Taklai irrigation scheme (1350 ha) and the Gelephu lift irrigation scheme (800 ha), both in southern Bhutan. Although neither of them is in operation, the Taklai scheme is being rehabilitated. Further development of large irrigation schemes is constrained by the rugged topography of the country (FAO 1999a) and the lack of resources.

The only source of institutional credit for small farmers is the Bhutan Development Finance Corporation (BDFC). Agricultural credit is available under three types of loans: seasonal loans for crop inputs; medium-term loans for livestock and equipment; and long-term loans for land development and orchard crops. The majority of loans have been provided for livestock. The BDFC has three loan schemes: the Group Guarantee Lending and Saving Scheme (GGLSS), Small Individual Loans (SIL) and Commercial Agricultural Loans (CAL). The GGLS scheme is for individuals who do not have collateral and are willing to join together and work in groups. The SIL scheme requires collateral with a repayment period of five years, while CAL loans are provided for land development for orchards and are repayable within seven years. A total of 23,000 farmers (35 percent of the total) have received institutional credit since agricultural credit was first provided in 1982.

Although BDFC is mandated to provide credit for agro-based enterprises, the Renewable Natural Resources Sector Ninth Five Year Plan (MOA 2002a) notes that the terms and conditions of credit are not favourable and that the informal, traditional credit system remains the most important source of credit, leading farmers to borrowing from moneylenders, large farmers and traders. The religious institutions and monk bodies are also a major source of informal credit. The practice of providing advance payments against cash crops, particularly apples and oranges is widespread. Despite the higher interest charge farmers often prefer these sources of credit as they offer greater flexibility and access.

The two commercial banks, Bank of Bhutan and Bhutan National Bank, provide both pre-shipment and post-shipment credits to the exporters. Pre-shipment finance is provided for procurement of materials, packing, transportation and transit insurance while post-shipment insurance is provided against the value of export.

8.3 Food Crops: Trends, Potential, Constraints and Policies

8.3.1 Trends in Production, Acreage and Yield

Official statistics show that aggregate production of cereals has declined over the last decade mainly as a result of declining acreage. Between 1995 and 2003, both production and acreage have declined by more than half (Table 8.9). As the agricultural production statistics of Bhutan are not altogether reliable, the conclusions drawn here must be treated with caution. Nevertheless, the magnitude of decline shown by the figures is too large to ignore. In the meantime, yield has fluctuated—rising from 7.8 t/ha (tonne/hectare) in 1995 to 9.6 t/ha in 2000 and then falling to 8.7 t/ha by 2003).

Paddy and maize, the two major cereals of Bhutan, have both suffered severe loss of production. The production of paddy has in fact gone down by 60 percent over the period 1995-2003. While this partly reflects the effect of specialization brought about by free trade with India, natural causes are also partly responsible for this decline. The first recorded outbreak of rice blast in Bhutan that swept through the higher elevations (1800-2700 metres) in 1995 wreaked havoc on paddy. The epidemic affected around 730 ha, resulting in the loss of nearly 1100 tonnes of rice, and hundreds of farmers lost their entire rice crop that year, which in turn negatively impacted upon production in 1996 (IRRI 2002).

Oilseeds, mainly mustard and rapeseed, are also cultivated as food crops and are grown on wetland or dryland as a secondary crop. The production of mustard, the main oilseed crop, increased from around 1695 tonne in 2000 to 3550 tonne in 2003, despite significantly falling acreage (MOA 2002b, 2005a). It has been estimated, however, that current production meets only about 25 percent of the country's requirement and around 3800 tonne of edible oil are imported annually (MOA 1995b).

Table 8.9 Production and Yield of Major Cereals

Cereal	Area (ha)			Production (t)			Yield (t/ha)		
	1995	2000	2003	1995	2000	2003	1995	2000	2003
Maize	55,473	30,777	27,778	75,380	77,298	49,682	1.4	2.5	1.8
Paddy	45,086	18,926	19,469	107,877	68,573	44,943	2.4	3.6	2.3
Wheat	9568	4634	3306	10,747	4352	4763	1.1	0.9	1.4
Millet	10,319	6095	4144	9159	3793	2896	0.9	0.6	0.7
Buckwheat	7290	3488	3718	6443	2887	2184	0.9	0.8	0.6
Barley	4406	1480	534	4849	1734	1015	1.1	1.2	1.9
Total	132,142	65,400	58,949	214,455	158,637	105,483	7.8	9.6	8.7

Source: MOA (1995a, 2002b, 2005a) and NSB (2005).

8.3.2 Potential and Constraints

The agro-topographical conditions of Bhutan do not favour food grain production, except in some specific micro-regions. In his analysis of the comparative advantage of different agricultural

products in Bhutan, Dorjee (1995) found that cash crops have a clear comparative advantage over food crops. Similarly, Deb (2004) estimated that except for maize (and rice and millet in a few dzongkhags), the per unit cost of production of cereals is lower in India and Bangladesh.

Clearly, food crops do not have much export potential in Bhutan.⁵⁷ However, a minimal amount of subsistence production must be ensured, especially since high transportation cost would render imported food crops extremely costly for poor people living in remote areas. Indeed, with the adoption of improved seeds and management practices in rice, wheat and maize, there is a good potential for these food crops to be cultivated in most agro-ecological zones.⁵⁸

Food grain production faces many other challenges in Bhutan. According to the RNR Statistics 2000, the major constraints faced by farming households in food grain production include destruction of food by wild animals (54 percent), lack of irrigation (28 percent), labour shortages (20 percent) and the small size of landholding (13 percent). Destruction by pests and diseases (13 percent) and limited access to markets (10 percent) also constrain food grain production. Food grain production is characterized as well by low soil fertility and low usage of chemical fertilizer and plant protection materials due to lack of funds, access and environmental concerns. Some of these constraints are discussed below.

Loss of agricultural land to other forms of land use

The Renewable Natural Resources Sector Ninth Five Year Plan (MOA 2002a) estimates that around 630 acres of wetland were lost during 1996-2001 to non-agricultural development activities such as town planning, roads and other facilities. Although rural-to-urban migration has helped to alleviate land pressure to some extent, population pressure has also led to fragmentation of landholdings and an increase in the number of economically marginal farms.

A preliminary assessment made by MOA in 1998 indicated the potential to increase agricultural land by 78,432 ha or 2.3 percent of the total land area if forested and other areas with slopes less than 50 percent and altitude below 3200 metres above sea level were considered (MOA 2002a). However, this potential can only be developed after taking into account concerns relating to environmental issues.

Shortage of farm labour

Existing land use practices in Bhutan are very labour-intensive. Unfortunately there is a shortage of labour in the villages. Although improvements in farming practices are contributing to labour saving and increasing production, the prevalence of inefficient methods of production, as well as post-harvest practices that result in excessive crop losses, is reducing food security and lowering returns to cash crop production. Farm mechanization has the potential to enhance the economic efficiency of farms, alleviate farm labour shortages, reduce the drudgery associated with farming, and improve the image of farming, thereby reducing rural-to-urban migration. However, farm mechanization is limited by the rugged topography, small landholdings and lack of funds. Labour shortages are also increasing because of rural-to-urban migration.

⁵⁷ However, the export of Bhutanese red rice to USA as a health food started in 1990, and 54.6 million tonnes (MT) were exported in 2004, amounting to Nu. 4.7 million.

⁵⁸ The MOA has released 25 improved varieties of rice, wheat, maize and oilseeds, and, while in the past in high-altitude areas like Bumthang, only buckwheat, wheat and barley were produced, rice cultivation has begun in Bumthang using high-altitude varieties.

Underutilization of land

Both irrigated and dryland are in optimally used for crop production. Although double cropping, especially of rice, is possible in the mid- and low-altitude zones, most farmers cultivate one crop annually. The lack of assured irrigation, crop degradation by pests, a general improvement in household rice self-sufficiency and increased diversification into high-value cash crops are some of the reasons for the decline of double-cropping since the mid-1990s (Shrestha,2004).

8.3.3 Government Policies and their Impact

In the area of food crops, the policy objectives of the government of Bhutan are to attain national food security, enhance cereal production, income and nutrition standards of the rural population and environmental conservation. Although it is difficult to isolate specific policies that influence the production of food grains, this section looks at policies related to food self-sufficiency, agricultural pricing, farm mechanization, irrigation, varietal improvement and market development.

The government has pursued a food self-sufficiency policy since the Fifth Five Year Plan. According to MOA (2002a), this involves the following objectives:

- Maintaining a broad national self-sufficiency whereby the export of crops provides sufficient foreign exchange to cover the costs of food imports;
- Maintaining a minimum of 70 percent self-sufficiency in food grain production; and
- Strengthening household food security by ensuring that all family members have, at all times, assured access to adequate food required for a healthy and productive life.

As can be seen from Table 8.10, which compares agricultural exports and imports in 1998 and 2003, the first aspect of national food security is not being achieved. While total exports amounted to Nu. 678.8 million in 1998, imports were valued at Nu. 1101.9 million, resulting in a negative balance of Nu. 423.1 million. This deficit increased further to Nu. 1139 million in 2003.

Table 8.10 Agricultural Exports and Imports: 1998 and 2003
(Nu. million)

	1998		2003	
	India	Others	India	Others
Exports	486.7	192.1	648.3	170.9
Imports	1034.9	67.0	1862.2	96
Balance	-548.2	125.1	-1213.9	74.9
Net Balance		-423.1		-1139

Source: RMA (2003, 2004).

The negative agricultural trade balance is due to the negative balance with India, Bhutan's main trading partner. Although agricultural export to other countries, which earns foreign exchange, is still higher than imports to them, imports are fast outpacing exports. The agricultural trade surplus with countries other than India was Nu. 125.1 million in 1998; it declined to Nu. 74.9 million in 2003.

If the case of cereals is considered, Bhutan is able to cover cereal imports with total agricultural exports but not with foreign exchange earned by non-Indian exports. In 1998, Nu. 331.682 million worth of food grains were imported. In the same year, total agricultural exports amounted to Nu. 678.8 million, of which only Nu. 192.1 million was earned in foreign exchange. This did not even cover the import of rice which amounted to Nu. 287.9 million. The same was the case in 2003.

The Renewable Natural Resources Statistics 2000 (MOA 2002b) states that while Bhutan has traditionally been self-sufficient in cereal production, the output of food grains has not kept pace with increasing demand brought on by the rapid growth of population, emergence of an urban non-farming community, rise in per capita food consumption and changes in food consumption pattern. It estimated Bhutan to be 66 percent self-sufficient in all cereal production, with virtual self-sufficiency in maize, barley, millet and buckwheat, but only 52 percent self-sufficient in rice, 24 percent in wheat and 20 percent in edible oils. The Poverty Assessment and Analysis Report 2000 also estimated that 42 percent of Bhutanese households were less than self-sufficient in cereal production and only 15 percent of the households had any surpluses (RGOB 2000). Hence, the goal of maintaining a minimum of 70 percent self-sufficiency in food grain production has also not been met.

While Bhutan does not face abject hunger and starvation, food insecurity, largely related to deficits in rice, edible oils and fats, is identified as one of the major problems facing a significant proportion of the people.⁵⁹ Vulnerability to food shortages results from low landholdings, low productivity, localized disasters such as hailstorms, strong winds, fungal diseases and damage by wild animals including mammalian pests and birds.

Food grain deficits are seasonal (mainly from May to July) and according to the Renewable Natural Resources Statistics 2000, around 56 percent of rural households suffered 2.2 months of food shortages during the year (MOA 2002b). During food shortages, households with adequate incomes (for example, from the sale of cash crops, wage labour and remittances) buy food grains from the Food Corporation of Bhutan, which maintains a three-month reserve, and the market. On the other hand, the poor and low-income households cope with food grain shortages by shifting to cheaper cereals like maize or make do with roots and forest products, and/or reduce consumption (UNICEF 2002).

The objective of the field programme on food security, as given in MOA (2002a), is to increase cereal production and enhance food security by focusing on crops that have the maximum potential for yield increases based on agro-ecological conditions and access to services in each gewog. It includes improvement programmes for rice, maize, wheat, buckwheat, barley, millet, oilseeds and legumes. In the implementation of this programme, alternative methods, such as livestock and horticultural development, to achieve household food security for gewogs without access and limited cereal production potential must be available.

Varietal improvement

An essential part of the government's policy package to increase food grain production is

⁵⁹ *Per capita food availability at around 2500 kcal compares with the South Asian average of 2449 kcal per day and the world average of 2782 kcal per day (MOA 2002a).*

the development and promotion of improved varieties. Although there are wide variations in agricultural production data, MOA (2002a) states that significant increases in yields and production were recorded for the major cereal crops and that these increases were achieved through the introduction and adoption of high-yielding varieties, which were promoted through extension services. Around 25 improved varieties of rice, maize, wheat and oilseeds have been released and a total of 14,622 kg of improved seeds was supplied to the farmers.

The varietal development programme focuses on cultivars with high yield potential and varieties that resist rice pests, tolerate cold and have locally preferred traits such as red pericarp. Efforts are also being made to conserve local rice genetic materials to safeguard the gene pool for rice improvement in the future. Since 1988, 15 improved varieties of rice (the staple of more than 65 percent of the population) have been released. Although the findings may not be applicable to the whole country because of its small sample size (248 households), the economic impact assessment of the rice research programme in Bhutan conducted in 2002 through the International Rice Research Institute (IRRI 2002) found that the adoption of modern rice varieties by rice farming households increased since 1989 to around 60 percent of the surveyed households by 2002.

While the overall area (wetland) planted with modern varieties of rice is approximately 35 percent, there are considerable differences within each agro-ecological zones.⁶⁰ The high-altitude zone (1500-2600 m) has more than 60 percent of the rice area under modern varieties and in the medium-altitude zone (600-1500 m) almost 38 percent of the wetland is under modern varieties. On the other hand, only around 17 percent of the rice area is used for growing modern varieties in the low-altitude zone (160-600 m).

The IRRI study found that, on an average, farming households that had adopted modern rice varieties had 110 percent more cash income than non-adopters and that this higher income was partly attributed to the increased rice production. In the transition from subsistence to semi-subsistence, farming households were found to diversify their livelihood strategies, and with the increased production brought out by the adoption of improved rice varieties, only one crop of rice was adequate to meet household food needs. Thus the farm household was able to diversify into higher value cash crops during the second season without sacrificing food security. The study also estimated that, with a conservative adoption rate of 25 percent, rice production in Bhutan can increase by more than 5000 tonnes a year, amounting to a net return of almost Nu. 60 million.

Although the national output of rice can be increased by 5000 tonnes (or by 8 percent) if the areas under improved varieties is expanded to 60 percent of the total rice area, the adoption of improved rice varieties have been constrained by the increased cost of production (inorganic fertilizers, farm machinery and labour), lack of assured irrigation and the limited focus of research efforts in generating technologies for the low-altitude zone, which has around 40 percent of the rice area (Shrestha 2004). The First Eastern Zone Agricultural Project (FEZAP) Interim Evaluation by the International Fund for Agricultural Development (IFAD) points out that, in general, wide variations in agro-ecology and farming conditions coupled with the lack of full participation of farmers in research and trial design also led to the low adoption of improved varieties (IFAD 2003).

While the adoption of improved varieties has led to an increase in the incomes of adopting
60 Overall, around 98 percent of the total wetland (irrigated land) is planted to rice.

households as they diversified into cash crop production, the land under improved varieties is only around 35 percent. The focus of the varietal improvement programme has been in the high-altitude and the medium-altitude zones. In the low-altitude zone, which accounts for around 40 percent of the rice growing area, only around 17 percent of the rice area is used for growing modern varieties. Hence, more suitable rice varieties for the wet subtropical zone need to be developed along with the possibility for double cropping. The provision of subsidies and price support to encourage cultivation of improved varieties along with necessary inputs, such as fertilizers, needs to be studied so as to increase rice production.

As regards the policy of abandoning direct government involvement in the distribution of seeds, it is worth noting that according to Agriculture-Horticulture Policies and Strategies for the Ninth Five Year Plan the corporatization of the supply of seeds has not resulted in the efficient supply of inputs. If anything, it may even have discouraged their use. This is hardly surprising considering that remote areas with poor and scattered population cannot be expected to be well served by market incentives. .

Policy for other inputs

A Farm Mechanization Policy was adopted by the government in 1983 and the Agricultural Machinery Centre (AMC) was set up in the same year in Paro to supply standard, appropriate and durable machinery for effective and efficient farming. AMC has three regional centres at Bondey, Bajo and Khangma, which supply farm machinery, tools and implements and provide repair services.

The government fixes the selling price of all farm machinery on a recurrent basis and, in addition to bearing the transportation costs and provision of installation and repair services; provides subsidies for the Japanese KR-II grant machines. For the last five years, only Japanese-made power tillers were sold to farmers at a subsidy, the rate of which in 2004 was 81 percent. Subsidies on machines of Indian-make were withdrawn in 1992, and the AMC plans to reduce the subsidy for KR-II machinery to gradually level prices with Indian power tillers. The government's policy is to slowly withdraw from the procurement and supply of machinery services that can be accomplished by private entrepreneurs. The plan is to privatize the procurement and distribution of agricultural tools and implements with effect from 1 October 2005 and remove all subsidies on these items.

While food production is dependent on factors such as the availability of irrigation, fertilizers and weather conditions, farm mechanization also increases crop production and reduces the time and labour required for farming activities.⁶¹ However, distribution of farm machinery is skewed, with the western dzongkhags owing a larger portion of power tillers, harvesters, tractors and translators. In fact, the Renewable Natural Resources Statistics 2000 found that 90 percent of the total power tillers were bought by farmers in Punakha, Wangdue, Paro, Thimphu and Bumthang dzongkhags. This skewed distribution may be the result of the higher purchasing power of households in these dzongkhags as well as the location of farm mechanization services. The mechanization strategy needs to be focused on food crops such as rice and maize, as these crops have not received the attention required in order to achieve food self-sufficiency.

⁶¹ *The production of barley was estimated to have increased by 62 percent, maize and potatoes by 22 percent each after the application of farm machinery (Nepal 2005).*

The National Irrigation Policy, formulated in 1992, seeks to support increased cereal production, especially rice, through the effective participation of Water Users Associations. During the period 1997-2004, a total of 135.5 km of new irrigation channels in various parts of the country were constructed in addition to the renovation of around 700 km of existing schemes. However, according to the National Irrigation Policy, irrigation development in the past has not had the desired impact on agricultural productivity. Some of the constraints faced are the inefficient traditional water use rights that are still operational and the lack of resources. The rugged topography limits irrigation to small gravity fed schemes.

The National Irrigation Policy of 1992 is being revised so as to raise the productivity of existing rice-based irrigation schemes through sustainable improvements in water delivery and management. The objective is to increase rural incomes by diversifying the range of irrigated crops on wetland as well as dryland, and to rationalize the irrigation assistance programme with a view to increasing the role of water users and the private sector and to reduce recurrent government investments in irrigation schemes.

Agricultural pricing

In Bhutan, the agricultural pricing policy is essentially market based with minimal price distortions due to lack of government funds and the reluctance of donor support (Dorjee 1995). The use of price incentives as a means of increasing productivity is limited by the open market and the free trade relations with India. The only support price maintained by the government is in the sale of quota food grains by the Food Corporation of Bhutan at prices below the open market; all of which is important for poverty reduction and food security. The government does not support output prices for domestic production of food grains. Subsidies for land and soil fertility development, seeds and saplings and fertilizers have all been removed since the Seventh Five Year Plan to minimize distortions and the financial burden on the government. The main exception is the transport subsidy for chemical fertilizers and the subsidy for agricultural tools and machinery. The subsidies on agricultural tools were revoked in 2005 and subsidies for Japanese agricultural machinery have been reduced to bring the cost of these machines up to the cost of machinery produced in India.

Although farmyard manure and leaf litter are the main sources of fertilizer, the use of chemical fertilizers and plant protection inputs may have decreased as a result of the removal of subsidies, resulting in decreased food crop production. Chemical fertilizers are mainly restricted to crops with higher returns such as paddy, potatoes and chillies and tree crops such as apples and oranges. In 2000, only 30 percent of farming households were reported to have used chemical fertilizers and the use of plant protection chemicals has decreased since the mid-1990s as a result of the partial removal of subsidies. Several hazardous chemicals have been removed from the market due to environmental concerns and the Ministry of Agriculture has introduced integrated pest management practices. However, crop destruction by pests and disease continue to constrain food grain production.

Market development

A major deterrent to growth in cash crop development, not to mention rural income generation

as well as food crop production, is the lack of access to markets. The current policy is to develop markets and marketing systems so as to induce surplus production and movement of food commodities from production-surplus to production-deficit areas within the kingdom. The point of this is to discourage imports and allay national food security concerns.

However, although increased production is dependent on many other factors, the impact of market development has been limited, with only 15 percent of the farming households reporting any cereal surpluses. In order to address this shortcoming, the Ministry of Agriculture is engaged in the following interventions during the Ninth Five Year Plan:

- Improving access to markets and marketing facilities through the construction of farm roads as well as other infrastructures such as stores, primary processing facilities and Sunday markets;
- Improving economic efficiency of production and marketing by facilitating the formation of cooperatives and associations which will enhance the efficiency of the production units and producers. A Cooperatives Act sponsored by the Ministry of Agriculture has been passed by the National Assembly in 2001 to this effect;
- Market targeting and penetration through low-volume, high-value niche products for the export market and import-substitution for local markets;
- Improving entrepreneurship and farm management skills through the promotion of commercial farming. The development of business and farm management skills by providing vocational training in farm businesses to youth who have received some school education;
- Improving product quality for both local and export markets through the introduction of production certification and labelling;
- Improving farm business financing through the institution of a new modality of financing farm businesses by linking it to the vocational training programme; and

Enhancing off-season income from farming through schemes such as agro-tourism.

8.4 Cash Crops: Trends, Potential, Constraints and Policies

8.4.1 Trends in Production, Acreage and Yield

The main tree crops include apple, orange, walnut, plum, pear, peach, areca nut and guava. The three commercially significant fruits are oranges and areca nuts in the subtropical zone and apples in the temperate zone. Altogether, these three tree crops accounted for 96 percent of horticultural trees planted and 92 percent of total production in 2000.

Oranges are the most important tree crop, accounting for 85 percent of total fruit production (MOA 2002b). The bulk of production comes from the southern dzongkhags of Chhukha, Sarpang, Samtse, Tsirang and Samdrup Jongkhar. Apples account for 14 percent of all fruit trees, and around 90 percent of all apples are grown in Thimphu and Paro. Areca nuts are an important tree crop in Samtse and Sarpang dzongkhags and walnuts are grown in Trashigang, Trashy Yangtse,

Mongar, Paro, Chhukha and Thimphu.

A variety of vegetables are cultivated in the country mostly on a subsistence level, contributing substantially to the household's nutritional requirements. Farmsteads close to urban areas or accessible to motor roads produce substantial amounts of vegetables, which are sold at local vegetable markets on the weekend. The major vegetables cultivated are potatoes, chillies, radishes and turnips. Potatoes are an important agricultural export to India and Bangladesh. Wangdue Phodrang, Trashigang, Chhukha, Bumthang, Paro and Mongar together contributed 79 percent of the total produced in 2000. Spices grown in Bhutan include ginger, onion, garlic and cardamom. Ginger and cardamom are subtropical cash crops sold to local and neighbouring markets in India and Bangladesh.

Although a complete analysis is not possible due to data gaps, Table 8.11 shows that the aggregate production of tree crops has decreased since 1995. In the case of oranges, production decreased by 52 percent between 1995 and 2003, due mainly to declining yield. A major reason for the reduced yield was the citrus greening viral disease. The number of orange trees also decreased during the same period. While the number of apple trees increased, output decreased by around 38 percent, and the yield dropped drastically in 2000. There is, however, a sign of revival in the production of both oranges and apples after 2000.

The main field cash crops are potatoes, chillies and other vegetables. Potatoes are the most important field cash crop and are a prime example of a crop with comparative advantage as it can be grown in large parts of the country. It is harvested earlier in Bhutan than in most places in India and hence fetches higher prices. Production increased between 2000 and 2003, but remained below the 1995 level (Table 8.12).

The production of chillies, an important vegetable for the Bhutanese, increased from 887 tonnes in 1995 to 2749 tonnes in 2003. This increase is explained partly by higher yield, which increased from 1.3 t/ha to 3.7 t/ha, and partly by higher acreage, which went up from 683 ha in 1995 to 926 ha in 2000. Cardamom and ginger are the main spice crops and are grown in the humid and wet subtropical agro-ecological zones. The production of spices, which is dominated by cardamom and ginger, seems to be decreasing. The drastic decline in the production of cardamom is the result of stringent environmental conservation policies that have limited the availability of firewood to dry the cardamom with after harvesting.

8.4.2 Potentials and Constraints

The development potential of cash crops, especially oranges, apples and potatoes, has been identified since the 1960s. The success of these cash crops are based on Bhutan's comparative advantage of its immense range of microclimatic conditions that allows it to cultivate a wide variety of produce. This advantage is also augmented by fact that Bhutan is able to produce temperate zone crops one month later than its neighbours, ensuring that it is virtually the only source of supply for fresh produce in the region at certain periods of the year.

Bhutan is also better suited for organic farming as compared to the rest of the subcontinent.

This is due to the fact that Bhutan's agricultural land has not been farmed intensively and is thus naturally fertile, and crop damage by pest is lower than in the rest of South Asia. Bhutanese products also have a reputation in India and Bangladesh, its two main markets, of being nutritious and tastier than competing products (ITC 2000). This represents an increase of around 43 percent from the total cash crop export earning in 2004.

Table 8.11 Production and Yield of Major Tree Crops

Crop	Area (ha)			Production (t)			Yield (t/ha)		
	1995	2000	2003	1995	2000	2003	1995	2000	2003
Orange	1107	906.7	n.a.	77,031	29,615	36,332	69.6	32.7	-
Apple	192	196.5	n.a.	9266	5113	5692	48.2	26	-
Areca nut	112	142	n.a.	1073	1330	n.a.	9.6	9.4	-
Walnut ⁹	5.9	5.5	n.a.	n.a.	235	205	-	42.7	-
Total	1416.9	1250.7	-	89,365	36,293	42,229	-	-	-

n.a.: Not available.

Source: MOA (2002b, 2005a, 2005c).

Table 8.12 Production and Yield of Major Vegetables and Spices

Crop	Area (ha)			Production(t)			Yield (t/ha)		
	1995	2000	2003	1995	2000	2003	1995	2000	2003
Potato	5631	3086	4080	43,325	35,437	40,532	7.7	8.7	9.9
Chili	683	926	n.a.	887	2848	2749	1.3	3.7	-
Cardamom	6973	n.a.	n.a.	3980	510	n.a.	0.6	-	-
Ginger	1140	619	n.a.	4503	1270	627	4.0	2.1	-
Total	14,427	-	-	164,420	50,254	-	5.1	-	-

n.a.: Not available.

Source: MOA (2002b, 2005a, 2005c).

The Eighth Five Year Plan emphasized the promotion of horticulture and seeds. Seedlings of new varieties of vegetables and fruits (walnuts, mangos, chestnuts, peaches, pears, plums, apricots, oranges, etc.) worth Nu. 9 million were promoted. Over 350,000 seedlings of different fruit crops were distributed, and are expected to contribute significantly towards enhancing rural income in the next decade.

The potential of cash crops has also been increased by the introduction of improved and new high-value crops for export such as asparagus, strawberries and mushrooms. The Master Plan for Horticultural Development also identified tomatoes, almonds, dried fruit, lemons, limes, avocados, mangos and walnuts as having export potential. Though mangos are produced in small quantities, their production is expected to increase as more than 70 percent of the trees have not

reached their full fruit-bearing age. Their potential lies in the fact they can be harvested after the main mango crop in India.

The cultivation of perennial horticultural crops on steep slopes, tsheri and other marginal land presents the potential for averting soil erosion, providing cash income and contributing to economic development in rural areas, thereby reducing rural-to-urban migration.

However, several constraints for increasing cash crop production have been recognized by the Renewable Natural Resources Sector Ninth Five Year Plan (MOA 2002a):

- Lack of access to inputs and markets;
- Agro-ecological diversity within a limited area and the resultant unfavourable economies of scale and inconsistent supply;
- Lack of market-oriented production;
- Lack of entrepreneurial and farm management skills;
- Lack of adequate financing;
- Shortage of labour;
- Limited potential for large scale mechanization; and
- Lack of quality standards to meet market requirements.

To address these issues the government has created the Agricultural Marketing Section (AMS) in the Ministry of Agriculture in order to support farmers in marketing their potential products. The AMS has helped in the sale of Athang ginger from Wangdue and chillies from Trashi Yangtse in the vegetable market of Thimphu and is facilitating the export of oranges from Panbang in Zhemgang and vegetables from different regions in the country to Bangladesh.

The second Integrated Horticultural Development Project (IHDP) supported by UNDP has helped to increase access to domestic markets through the establishment of Sunday markets and marketing sheds around the country. New export markets for fresh Bhutanese horticultural produce were explored and grading and other standards have been put in place. The next step is to study generally higher value market segments and micro segments.

8.4.3 Government Policies and Their Impact

The Bhutan Vision 2020 identifies horticultural development as a priority area for the multiple objectives of raising cash incomes of farmers, generating export revenues and improving the nutritional status of the population (RGOB 1999). The target is to increase the value of horticultural exports by 200 and 300 percent by 2007 and 2012 respectively.

In keeping with the overall policy for the RNR sector, the policy objectives for the horticulture subsector are to increase income, living and nutritional standards of the rural population, to promote sustainable land use, and to improve the environment and employment on farms so as to mitigate rural-to-urban migration. The following strategies have been adopted to achieve these policy objectives:

- Development and implementation of a comprehensive national commodity development

programme through the identification of priority crops and potential areas for horticultural development;

- Focus on commercial production of specific identified commodities;
- Identification of appropriate post-harvest and processing technologies;
- Development of integrated nutrient, water and pest management practices;
- Improvement of marketing and market information system;
- Training of extension staff on improved crop management technologies;
- Assured supply of quality seed, seedlings and other inputs; and
- Development of a core group of trained researchers, technicians and extension staff.

As a result of these efforts, the contribution of cash crops to the output of the RNR sector increased from 36.5 percent in 2000 to 42 percent in 2003. Out of this, tree crops and vegetables contributed around 35 percent and 5 percent respectively. However, as noted earlier, the production of all horticultural products, both field and tree crops, have fallen between 1995 and 2003. Part of this decline may be artificial. There have been some suggestions of over-reporting in 1995. During 2000-2003, production did increase for oranges, apples and potatoes. By contrast, despite the government's policy initiatives to promote cash crops, the number of fruit trees and the acreage under field cash crops has decreased since 1995, except for apples and chillies.

The Horticultural Baseline Survey conducted by the Natural Resources Training Institute (NRTI) in 1998 found that the sale of cash crops contributed 53 percent to the total income of households in 16 gewogs, spread over eight dzongkhags (the sale of potatoes contributed 19 percent, fruits accounted for 14 percent, followed by vegetables with 10 percent, field crops with 8 percent and cardamom with 2 percent). Livestock, with 21 percent, was the next important source of income for farmers. Hence, while the production and acreage of horticultural products seems to be falling for most tree and field crops, cash crops have contributed more than half of the total income of rural households.

The aggregate volume of exports of all cash crops taken together has increased impressively, by 126 percent, between 1997 and 2004 (Table 8.13). However, if the commodities are considered individually, only the export of potatoes seems to have increased during this period. The exports of oranges and apples declined after 1997 but appear to have recovered since 2000.

Table 8.13 Export of Major Cash Crops

Crops	Quantity (t)			Value (Nu. Million)		
	1997	2000	2004	1997	2000	2004
Orange	18,647	11,305	18,578	178.928	105.485	219.07
Potatoes	13,016	11,356	22,835	43.109	46.968	162.61
Apples	4103	470	2439	81.669	22.183	37.87

Ginger	1150	676	250	4.609	6.868	3.257
Cardamom	527	402	818	36.922	75.045	81.180
Areca nut	326	173	77	3.013	1.248	2.299
Vegetables	1660	4235	1994	22.536	26.741	12.54
Total	20,783	28,617	46,991	370.786	284.538	518.826

Source: Bhutan Trade Statistics, various issues.

The development of cash crops is constrained by the land use policy and the Forest Act which limits horticultural plantations to dryland and tsheri. These marginal lands require soil corrective measures, resulting in higher costs of establishment. The controlled conversion of forestland for fruit crop plantation needs to be studied.

According to the Agriculture-Horticulture Policies and Strategies for the Ninth Five Year Plan, horticultural development has been based on equity objectives, which has resulted in less impact with resources being spread thinly over a wide base. In order to meet the Vision 2020 targets, trade-offs will have to be made between equity and efficiency.

Horticultural development will require the provision of irrigation facilities and the irrigation policy, which is directed at rice, should be revised to take account needs of other crops, including tree crops. Orchards will require engineered irrigation systems and, apart from subsidizing installation to encourage fruit crop cultivation, cost sharing through the use of water metres at individual orchards and plots should be studied.

The policies and guidelines of other sectors, especially the Ministry of Trade and Industry, which looks after private sector development, export of horticultural produce and the agro-processing units, affect the development of cash crops. The proposed multisectoral Horticulture Development Board, with the mandate of policy direction and coordination of intersectoral responsibilities, should be established.

8.5 Livestock: Trends, Potential, Constraints and Policies

8.5.1 Trends in Production

Livestock production is an integral part of the farming system across the country. About 90 percent of all rural households own livestock (Roder et al. 2001). A survey conducted in 1998 by NRTI on rural income sources revealed that 21 percent of the income of rural households comes from livestock products. The RNR Statistics 2000 also estimates that 27 percent and 34 percent of the total butter and cheese production, respectively, is sold for cash by farmers. Apart from supplying meat and dairy products, cattle also provide the much-needed draught power in a farming system that is short on labour. And of course, livestock are also an important source of fertilizer in the form of farmyard manure, accounting for around 58 percent of total fertilizers used on cereal crops.

Large variations in environmental conditions within Bhutan have resulted in a wide range of livestock production systems, with the major species of livestock reared by farmers being cattle, yak, buffalo, sheep, goats, pigs, poultry and equine animals. The only fisheries in Bhutan are found in Sarpang and Samdrup Jongkhar dzongkhags.

While the livestock sector contributes around 32 percent of the value added by the RNR sector to GDP, the direct annual contribution of livestock to GDP—like that of the RNR sector as a whole—has decreased, falling from around 16 percent in 1980 to 8 percent in 2003 (NSB 2004a). Cattle are the most important livestock. Around 78 percent of farming households own cattle. Production is generally higher in Bumthang, Chhukha, Thimphu and Samdrup Jongkhar, with the result that milk processing facilities and market outlets have been set up in these areas.

Except for cattle and horses, livestock numbers have decreased since 1995 (Table 8.14).⁶² Livestock products include dairy products, meat, wool and eggs and are produced mainly on subsistence level and consequently, marketed surpluses are small. Recent production figures are available in Table 8.15. Supply of farm produced meat, especially beef, is limited. This is because due to religious sentiment people generally do not slaughter their domesticated animals.

Table 8.14 Livestock Population 1990-2003
(Number of heads)

Animal	1990	1995	2000	2002*
Cattle	308,273	332,427	320,509	329,250
Yak	33,035	39,668	34,928	25,253
Horse	26,089	29,545	27,602	27,895
Sheep	43,698	36,000	22,880	n.a
Goat	36,600	34,438	31,328	n.a.
Pig	59,598	47,691	41,401	41,493
Poultry	218,852	177,994	230,723	218,228

n.a.: Not available

Source: MOA (2002b) and NSB (2005).

Table 8.15 Production and Consumption of Dairy and Livestock Products in 2000

	Produced	Consumed	% Consumed
Milk (litre)	24,837,386	3,846,715	15.5
Butter (litre)	1316	960	72.9
Cheese (litre)	2173	1442	66.4

⁶² Other sources, such as Roder (2002) estimate that livestock numbers are increasing.

Beef (kg)	1,409,716	787,774	55.9
Pork (kg)	186,576	130,855	70.1
Mutton (kg)	35,821	32,247	90.0
Chicken (kg)	21,279	20,334	95.6
<i>Meat total (kg)</i>	<i>1,653,392</i>	<i>971,210</i>	<i>58.7</i>
Eggs	15,718,050	14,265,098	90.8

Source: MOA (2002b).

Substantial amounts of meat, butter, cheese and milk are traded but mostly within the country. The Renewable Natural Resources Statistics 2000 found that 507 tonnes of milk, 355 tonnes of butter and 730 tonnes of cheese were sold, amounting to 5.5 percent of total production (MOA 2002b).

8.5.2 Potential and Constraints

Large agro-climatic variations in Bhutan create the potential of livestock development in many regions. However, the sector faces a number of constraints to its development.

The main constraints include the lack of nutritious feed and fodder (especially in winter) and the maintenance of large livestock numbers that are in excess of resources. The concept of growing fodder for livestock is relatively new in Bhutan and it is usually the marginal land not suited for any other crops that is put under fodder. About 5 percent of rural households have registered tsamdruk or natural grazing lands, with the largest area being in Trashigang dzongkhag, followed by Thimphu, Wangdue, Chhukha and Haa (MOA 2002b).

With the shift towards commercialization, the potential for dairy farming has increased. However, adequate fodder resources will be necessary for the sustainability of such enterprises, and with the increase in cross-bred animal numbers, production of fodder crops must also be increased. The conversion of pasture land into other uses is also a constraint to overall livestock development, as is the clause in the Land Act that does not permit leasing out pasture land.

Another constraint is posed by religious sentiment, which has led to a ban on the sale of meat on auspicious days and months of the Bhutanese calendar, amounting to more than 100 days a year. Only a few slaughterhouses exist in Bhutan, mainly near the border with India. Bhutan is a net importer of meat, fish and dairy products.

Livestock development is also limited by the maintenance of an overwhelming proportion of local cattle that are less productive than improved breeds,⁶³ not to mention the limited access to markets, a lack of surplus and the low commercialization of the livestock production. As seen in Table 8.16, livestock imports have increased substantially, especially dairy products and eggs. On the other hand, exports have decreased since 1997.

⁶³ The annual milk production of improved cattle was 761 litres per head as compared to 393 litres per head for local cattle. There were more than 250,000 local cattle, accounting for 86 percent of the total cattle population, of which about 50 percent were considered to be unproductive, also mostly local cattle (MOA 2002b, 2005a).

Table 8.16 Livestock Imports and Exports to India
(Nu. Million)

Commodity	1993		1997		2004	
	Imports	Exports	Imports	Exports	Imports	Exports
Live animals	5.989	-	18.728	0.030	12.929	-
Meat and meat products	2.263	-	0.949	0.045	65.037	0.002
Fish and fish products	5.431	-	14.940	0.096	48.845	-
Dairy products and eggs	40.477	0.001	88.280	0.333	289.029	0.068
Other livestock products	-	0.004	-	0.083	0.024	0.006
<i>Total</i>	<i>54.16</i>	<i>0.005</i>	<i>122.897</i>	<i>0.587</i>	<i>415.864</i>	<i>0.076</i>

Source: Bhutan Trade Statistics, various issues.

However, the ongoing livestock development programmes, such as livestock breed improvement and conservation, feed and fodder improvement, promotion of backyard farms, increasing market access and animal health services, are likely to lead to an increase in livestock production. Efforts of the RGOB are also being supported by donors like India and the European Union and programmes will be implemented in the current Five Year Plan period to strengthen existing infrastructure, to strengthen human resources and livestock projects, to introduce commercial farms and improve livestock health services and to improve dairy processing units. These programmes present the potential of enhancing the rural income as well as import-substitution of the substantial livestock product purchases from India.

8.5.3 Government Policies and their Impact

As in the case of food and cash crops, the government policy for the livestock subsector is stated through policy objectives. The general policy objectives for the livestock subsector are to:

- Contribute to food security and food sufficiency, including improved nutritional status of the population;
- Enhance livestock production capacity; and
- Enhance rural income and contribute to poverty alleviation.

Organized livestock development began in 1960 and over the last eight Five Year Plans programmes were pursued for breed improvement, for dairy development, for animal health coverage, for fodder development, for sheep and fisheries development, for human resource development and for research and extension. An extensive infrastructure of animal health services is in place, consisting of veterinary hospitals in every dzongkhag, more than 100 livestock extension centres in the gewogs, supported by laboratory services that include a Royal Veterinary Epidemiology Centre and regional laboratories.

The promotion and consolidation of improved cattle breeds, with a programme of exchanging four local cattle for one improved breed, may reduce pressure on feed and fodder resources

and increase productivity. However, this may also negatively impact crop cultivation, as reduced cattle population may, in turn, reduce the amount of farmyard manure available as well as draught power. The practice of grazing livestock in the forest or on natural grasslands during the day and confining them in sheds in crop fields during the night is also important as this practice results in a continuous export of plant nutrients from grazed areas (Rinzin and Roder 2002).

The promotion of improved breeds to enhance livestock production capacity seems to be making an impact as their numbers have increased from 22,080 in 1995 to 44,708 in 2003, an increase of around 50 percent as compared to the 18 percent increase for local cattle during the same period. According to the Renewable Natural Resources Sector Ninth Five Year Plan, the Mid-Term Review of the Eighth Five Year Plan also found that the population of Jersey and Brown Swiss Crossbred cattle had increased by 51 percent and 46 percent respectively and that the number of farmers rearing such cattle had also increased significantly (MOA 2002a). The successful introduction of the Mithun artificial insemination scheme is another notable achievement in breed improvement.

The availability of adequate quantity and quality of fodder at an economically feasible cost is an integral part of livestock development. Since the early 1970s many species of fodder, appropriate for different agro-ecological zones, has been developed and distributed. The supply of pasture seed is totally subsidized by the government. Three decades of well-focused research and development activities is reported to have had substantial impact on dry matter production, fodder quality during summer, fodder quality during winter and milk production (Rinzin and Roder 2002).

However, the introduction of improved pasture has not made much impact in terms of area coverage, primarily because feed and fodder production was promoted as an alternative crop rather than being a complementary component of agricultural cropping programmes such as crop rotation and intercropping. As a result, only 1.7 percent of the households have improved pastures with a total of less than 400 hectares, with 90 percent of it being concentrated in a few dzongkhags (MOA 2002b). Pasture development has also stagnated since the withdrawal and reduction of subsidies for fertilizer⁶⁴.

While production has increased, the goal of import-substitution of the major livestock products has not made much progress, however. Livestock imports from India increased from Nu. 54 million in 1993 to Nu. 832 million in 2004 (Table 8.16).

Currently, as brought out by the Ninth Five Year Plan document for the livestock sector, livestock development in Bhutan is at a critical juncture. While the majority of the livestock producers are rural and subsistence in nature, the need to move towards commercial, sustainable and market-oriented production is ever increasing. The need to strike a balance between religious sentiment and production is another major challenge facing livestock development in Bhutan.

⁶⁴ Livestock Development and Strategy Policy available at http://www.moa.gov.bt/a_p_livestat.php

8.6 Evaluation of Policy

While Bhutan's long term goals as given in Vision 2020 do not explicitly mention agricultural development as a part of its main objectives, it is touched upon under the human development and balanced and equitable development themes of the central development concept of maximizing gross national happiness (GNH). Horticultural development is identified as a priority area for raising cash incomes of farmers, for generating export revenues and for improving the nutritional status of the population. The target is to increase the value of horticultural exports by 200 and 300 percent by 2007 and 2012, respectively. Vision 2020 also sees rural-to-urban migration facilitating the consolidation of land, leading to farm mechanization, creation of off-farm employment and the promotion of rural industrialization.

Various policy instruments have been developed in order to achieve these goals. These include the National Extension Policy, Livestock Development and Strategy Policy, National Breeding Policy, National Irrigation Policy, Farm Mechanization Policy and the sectoral Master Plans.

The agricultural policy is backed by an increasing legal framework, which includes various legislations such the Land Act 1979, Forest and Nature Conservation Act 1995, Pesticides Act 2000, Seeds Act 2000, Livestock Act 2001 and Cooperatives Act 2001. While the adoption of the Constitution will entail the review of these legislations, the Bhutan Food Act, Water Policy and Water Act and the Biodiversity Act are due to be enacted to strengthen the enabling environment.

A major constraint in analysing the impact of the policy regime, however, is the general lack of consistent and reliable data. As brought out by the Agriculture-Horticulture Policies and Strategies document for the Ninth Five Year Plan, data uncertainties exist with regard to the total area under different land uses, the area under various crops and also their production. Information is limited on adoption rates of improved varieties, technology and input use by farmers is also limited as is data on the quantity and value of internal agricultural trade. As for data on trends in rural and urban income growth, it simply does not exist.

Despite these limitations, an attempt has been made here to assess the extent to which the RNR policies have succeeded in promoting the growth and diversification of the sector so as to attain food security, enhance rural income and employment while ensuring balanced and equitable growth and environmental sustainability.

8.6.1 Promoting Growth and Diversification of the RNR Sector

The development programmes in the RNR sector, accompanied by general infrastructural development—such as increased accessibility to markets, availability of support facilities and health and education facilities—has led to agricultural diversification in Bhutan. This diversification is best reflected in the growth of horticulture, with the total area under orchards growing from 5788 ha in 1995 to around 8554 ha in 2000 (Table 8.17).

Table 8.17 Trends in Registered Land Use

Land Type	1995		2000		2003	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Wetland	38,761	12.5	21,757	21.6	28,732	14.5
Dryland	97,724	31.6	47,746	47.4	95,830	48.4
<i>Tsheri/Pangshing</i>	88,332	28.6	30,105	29.9	71,734	36.2
Kitchen garden	n.a	-	1051	1.0	1672	0.8
<i>Total agricultural land</i>	308,843		100,659		197,969	
Orchards	5788		8554		n.a.	

Source: MOA (1995a, 2002b, 2005a).

Diversification is also evident from the growth of agricultural imports and exports. Agricultural exports increased from Nu. 50 million in 1982 to Nu. 819 million in 2003, driven largely by the growth of horticultural exports, which increased by 126 percent between 1997 and 2004. Agricultural imports, primarily food grains, also increased from around 5 percent of total imports in 1982 to around 17 percent in 2003.

At the same time, the production of major cereals is in decline (Table 8.9). Livestock production has increased, but due to various factors such as urbanization and increased income, livestock imports have increased substantially since 1997. On the other hand, livestock exports have decreased.

At the aggregate level, the RNR sector's contribution to GDP grew by 2.3 percent in real terms during the Eighth Five Year Plan (1997-2002), largely propelled by the various programmes supported by donor assistance. Over 70 percent of the investment capital for the RNR Sector Ninth Five Year Plan is from bilateral and multilateral development agencies⁶⁵. Concessional loans amounting to Nu. 38.3 million have also been taken for the RNR sector from IFAD for horticulture research and integrated and applied farming systems research and the World Bank and ADB for market research and information, including market survey, price fluctuations and product development, and the national forestry development programme (MOA 2002a).

The growth in the RNR sector is remarkable considering that the allocation for the RNR sector has been declining relative to other sectors (Table 8.18). Although total allocation for the RNR sector has increased in absolute terms from Nu. 6.6 million in the First Five Year Plan to Nu. 6719.6 million in the Ninth Five Year Plan, the share of the RNR sector allocation has fluctuated between 6.2 percent in the First Five Year Plan to a high of 39 percent in the Fourth Five Year Plan. Since the Fourth Five Year Plan, the percentage share of the RNR sector in total plan outlay has been steadily declining and currently stands at less than 10 percent for the current Ninth Five Year Plan.

⁶⁵ After the energy generation and supply, the RNR sector received the second largest share of donor funding, with 16 percent of total disbursements in 2002.

Table 8.18 Five Year Plan Outlays for the RNR Sector

	Total outlay for RNR sector (Nu. million)	Share of total outlay (%)
First FYP	6.6	6.2
Second FYP	34.3	17.0
Third FYP	110.9	23.4
Fourth FYP	430.3	39.0
Fifth FYP	947.2	20.3
Sixth FYP	1736.2	18.2
Seventh FYP	1515.9	9.7
Eight FYP	4298.9	12.1
Ninth FYP	6719.6	9.5

Source: MOA (2002a) and RGOB (2002b).

8.6.2 Balancing Growth with Equity

There are considerable inequalities in rural Bhutan. Significant inequalities in landownership exist. Less than 10 percent of households owning 10 acres or more account for over 30 percent of the total agricultural land available. On the other hand, nearly 14 percent of the total agrarian households own less than an acre. Even with the redistribution of government land to landless households, around 2.6 percent of rural households still do not have any land. One of the objectives of the government is to ensure that agricultural growth diminishes rather than exacerbates these inequalities. To a large measure, this goal is yet to be achieved.

The Renewable Natural Resources Sector Ninth Five Year Plan has prioritized the enhancement of rural livelihoods and income. It hopes to reduce the drudgery associated with farming, to increase the purchasing power of farmers and lift them out of poverty as well as to make farming viable and to address emerging problems such as rural-to-urban migration and youth unemployment. The policy is to provide assistance in the form of subsidies for farm inputs, including farm machinery and equipment, planting materials, plant protection services, breeding animals, veterinary health care, farmer training and rural credit. These subsidies, however, seem to have benefited the richer households more. The commercial production of horticulture has largely been a favourite of farmers with more land and other resources. The Poverty Assessment and Analysis Report 2000 (RGOB 2000) estimated that 24 percent of all rural households did not produce any cash crops, while 33 percent produced large volumes. The report also found that 42 percent of farming households were not self-sufficient in cereal crops and livestock production.

The very poor, who should be the target of microfinance, have not been able to take advantage of the group or of the small individual schemes run by the Bhutan Development Finance Corporation (BDFC), this is because of the lack of security for individual loans or the inability to participate in group lending schemes. Instead, the majority of the BDFC agricultural loans have gone to the

more well-off dzongkhags and, by extension, to richer farmers.

Not just in the case of microcredit, but in other respects too the current policy regime does not seem to have served well the case of regional equity. While poor households are spread throughout the country and poverty is related to natural endowments supported by access to markets and other facilities, agricultural development has been faster in the western and west-central regions than the eastern and east-central regions of Bhutan. Horticultural production is especially skewed, with Thimphu and Paro accounting for 90 percent of all apple production and Chhukha, Sarpang, Samtse, Tsirang and Samdrup Jongkhar producing 77 percent of the total oranges.

Distribution of farm machinery is also biased towards the better-off western dzongkhags, where farmers own more power tillers, harvesters, tractors and translators than in other areas. Thus, the RNR Statistics 2000 found that 90 percent of the total power tillers were bought by farmers in Punakha, Wangdue, Paro, Thimphu and Bumthang dzongkhags (MOA 2002b).

Road access is a major factor contributing to enhancement of rural incomes. However, farm and feeder roads tend to be constructed in areas that have agricultural potential, perpetuating poverty and regional inequalities.

8.6.3 Balancing Growth with Promotion of Labour Absorption in the RNR Sector

The RNR sector is still the largest contributor to national output and employs the majority of the workforce. However, the transition towards a market-oriented economy is reducing labour absorption in the RNR sector. Although it is the objective of the government to reduce the drudgery of farm work and enhance farm income so as to stem rural-to-urban migration and youth unemployment, farm labour shortage is actually on the rise.

In a survey carried out in five western dzongkhags (Gasa, Punakha, Wangdue, Tsirang and Dagana), the decline in farm labour was reported to be as much as 50 percent over the last decade (Norbu and Floyd 2001). The mismatch between farm labour requirements and labour availability was not just restricted to villages near urban centres but was occurring even in remote areas. Other reasons for labour shortages include students not returning to their villages after completing their studies and the recruitment of able-bodied men for the armed forces.

This has been compounded by the inefficient use of farm labour, with largely traditional techniques for ploughing, harvesting and post-harvest practices. Labour contribution or *woola*, whereby beneficiary households are required to contribute labour for district and local development activities, has also added to farm labour shortages, with an average household contribution of 23 *woola* days per year (Ura 2005).

The most important reason, however, for labour shortage in agriculture is rural-to-urban migration. A recent study on rural-to-urban migration (MOA 2005b) has found that while the lack of educational facilities was the main reason for migration, nearly one in five persons left their villages because of small landholdings, drudgery of farm work, unproductive agriculture, crop

damages by wild animals and natural calamities.

Those left to do the farm work are predominantly women and elderly people; according to a survey conducted by NRTI in 1998, 62 percent of women are employed in agriculture and 70 percent of the agricultural land is owned by females. Evidently, current policies are not helping to provide the right incentives or opportunities for productive absorption of an increasing number of people in agriculture.

8.6.4 Balancing Growth with Environmental Sustainability

The development of the agricultural sector by expanding agricultural land has been limited by the country's steep topographic features and the high priority given to maintaining forest cover. Farming systems are threatened by the depredation of crops and livestock by wildlife. The expansion of agricultural production is limited by restrictions on forest and agricultural land use and practices. There is also an ongoing debate on the merits and demerits of forest grazing as well as an increasing conflict between foresters and herders. The Ministry of Agriculture is in the process of formulating a grazing act to resolve this conflict.

In order to balance growth with environmental sustainability, the Renewable Natural Resources Sector Ninth Five Year Plan states that a clear demarcation between forests and agricultural land is needed along with clarification of the rules pertaining to each category, and has accordingly identified the following areas for attention:

- Swapping marginal and distant agriculture lands with suitable forest lands;
- Prescribing and controlling burning of pastures;
- Increasing the number of improved breeds compared to local cattle;
- Creating awareness of environmental policies and acts;
- Prescribing and controlling culling of prolific pest species like wild boars;
- Providing vocational training in agriculture and horticulture; and
- Promoting of eco and agro-tourism as a means of providing alternative income to farmers.

8.7 Concluding Observations

The objectives for the RNR sector are to achieve food security, and to create efficiency (through the allocation of resources that effect maximum national output). The RNR also wants to and maintain equity by ensuring balanced regional development and it also hopes to enhance rural income, while maintaining environmental sustainability. Although development programmes designed to further all these objectives are being implemented, they are often at conflict with each other. To resolve these conflicts trade-offs must be made. The government will have to decide whether to pursue efficiency so as to move towards the country's overall goal of self-reliance or to tolerate losses in efficiency for equity gains and environmental sustainability. Although Bhutan, as a pro-environment welfare state, seems to have already made its choice, the situation on the ground reveals that while regional and household income inequalities exist, the developmental thrust is on increased commercialization of the agriculture sector.

The RNR sector is crucial for the Bhutanese economy as it is the source of employment for the majority of the people and the largest contributor to GDP. However, its share of the total outlay for the Five Year Plans has been decreasing since the Fourth Five Year Plan and is currently less than 10 percent. Although investments in other sectors will have an impact on rural development and agriculture, the resource allocation for the RNR sector needs to be commensurate with its importance. For example, the government has not been able to attain its food security objective, in part due to the lack of focused investment. In the Eighth Five Year Plan, the paddy extension programme received only 18 percent of the total extension programme budget. While resource allocations are often project-tied, the priority allocated to food security must be matched by investment.

The Land Act and the Nature and Forest Conservation Act need to be reviewed to ensure that they facilitates pro-poor growth of the RNR sector. There is also a need for the government to review its policy on conversion of wetland for other uses. The use of wetland for other agricultural uses should be studied while checking the conversion of wetland for non-agricultural uses. The system of redistributing vacant government land to landless and near landless households must be continued and increased if the government is to achieve its goal of balanced and equitable government.

8.8 Summary

Bhutan is a predominantly agrarian economy. The agricultural sector, or the RNR sector as it is called in Bhutan, consists of arable agriculture, horticulture, livestock and forestry. Together, they employ 79 percent of the population and accounted for 33 percent of GDP in 2003. Agriculture's share of GDP is declining however, especially the contribution of cereals and livestock, while the contribution of tree crops has been increasing, reflecting an ongoing process of specialization within agriculture.

Food crops do not have much export potential in Bhutan. However, a minimal amount of subsistence production must still be ensured, especially since transportation cost makes imported food crops expensive for poor people living in remote areas. The government aims to maintain domestic self-sufficiency of food up to at least 70 percent, and to cover the cost of import by exporting other agricultural products. The first part of the objective has nearly been met, but the second part has not.

While the government has put in a great deal of effort to improve the quality of agricultural inputs; pricing and distribution policies have not been conducive to their rapid adoption. There is evidence to suggest that reduction of input subsidies and government's partial withdrawal from seed distribution has had a negative impact on the use of agricultural input in many areas.

Livestock production has increased. Research and development in breeds and fodder has brought rich dividends. However, pasture development has lagged behind, for a variety of reasons, one of them being withdrawal of subsidy on fertilizer.

Commercialization of agriculture has been a major goal of agricultural policy. Yet, the production of all horticultural products, both field cash crops and tree crops, has fallen between 1995 and 2003. Part of this decline may be artificial, though, as there are some suggestions that the production figures for 1995 were inflated. During 2000-2003, production did increase for oranges, apples, and potatoes. On the other hand, most other kinds of fruit trees and acreage under almost all field cash crops declined since 1995.

The development of cash crops is constrained by land use policy and the Forest Act which limits horticultural plantations to dryland on the grounds of environmental concerns. It is also officially acknowledged that horticulture did not grow as fast as it might have done because the objective of regional equity was given primacy, resulting in resources being spread thinly over a wide base. The government may have to reconsider the trade-offs between efficiency and environment on the one hand and between regional equity and efficiency on the other.

This reconsideration is especially necessary in view of the fact that current policies are not helping to provide the right kind of incentives or opportunities for productive absorption of labour in agriculture. Indeed, labour scarcity is emerging as a major problem in Bhutanese agriculture, as rural people, especially young males, are migrating in large numbers to urban areas. While the absence of educational opportunities is the major reason for migration, a significant proportion of people are migrating because they no longer find agriculture rewarding enough as an occupation.

CHAPTER 9

FOREST RESOURCES: PROSPECTS AND CONSTRAINTS

9.1 General Overview

Forest covers 72 percent of the total area of Bhutan, including about 28 percent of the land area declared as protected areas. Forests provide food, medicines, energy, shelter, animal fodder, and organic fertilizers, to name a few, to the people, providing a high degree of support at the subsistence level. Free access to such natural resources, especially for the rural people, has effectively helped to avert situations of extreme poverty, destitution and homelessness. Forests are also vital to maintain water catchment areas to support agriculture, the main source of livelihood for the people, and the hydropower sector, which is the largest source of revenue and growth.

The National Environment Strategy underscores the importance of forests by stating that: ‘Overall all sustainability of national economic development depends on the conservation of Bhutan’s forest resources.’ Hence, environment conservation forms a central tenet in the country’s development endeavour. The National Forestry Policy 1974 outlined the long-term objectives of forests and their utilization and made it mandatory to keep 60 percent of the land under forest cover. This commitment is also reiterated in the draft Constitution of Bhutan 2005.

Such stringent environment conservation policies have also brought into light varying degrees of conflicts between conservation and utilization. From a long-term perspective, the precautionary

steps taken by the government are laudable, as pressures arising from population growth and commercialization could lead to a rapid depletion of forests and overall environmental degradation. Nevertheless there is an imperative need to move from passive conservation to more active and sustainable utilization of forest resources. This is especially important because forest resources provide one of the main sources of comparative advantage for the country. Hence Bhutan must transform this comparative advantage into competitive advantage to boost growth, generate employment, upgrade skills and diversify exports.

The prevailing microclimatic conditions have bestowed the country with immense ecological diversity. The strong conservation ethics inspired by Buddhism and a cautious modernization policy has allowed the country to maintain large areas of the country under forest cover. As noted above, at present almost 72 percent of Bhutan's land is under forest cover. This includes forested areas as well as scrub forests. It should be noted that while the technical definition of forests includes only forests proper and scrub forests as indicated above, the legal definition of forests (as discussed in the next section) also includes sokshing (woodlots for collection of leaf litter) and tsamdrops (pasture land) as well as waterbodies. Proper agriculture land is limited to less than 8 percent of the total land area and prospects for expansion are limited due to the topography and stringent environment conservation policies. As a result, the interface between forests and agriculture is very important in providing food security for the people.

This chapter aims to assess the importance of forest resources for Bhutan from the point of view of subsistence and commercial use. The chapter will highlight the trade-offs made between conservation and utilization and assess if there is potential to maximize the benefits from forest resources without compromising the conservation concerns.

9.2 Current Policy Framework

As the term 'Forest and Forest Resources' is expansive and cross-cutting, and likely to be understood differently by different stakeholders, this section provides a brief overview of the related laws and concepts as understood and interpreted in Bhutan.

9.2.1 The Legal Framework

The National Assembly of Bhutan is the highest law-making body in the country and approves all laws. The Ministry of Agriculture is the main agency involved with the formulation of rules and regulations, polices and administration of the forestry sector. However, due to the nature of forests and environment, all other ministries, agencies, local governance bodies and civil society have some stake in the forestry policies.

The Department of Forestry (DOF) and the Forest Resource Development Division sets the policies and the guidelines for forestry management and the identification of forestry management units (FMUs) and determination of the annual allowable cut for timber harvest. The Forestry Development Corporation Limited (FDCL), a 100 percent government owned corporation, is the only authorized agency to harvest timber from the FMUs through scientific and environmentally

sound harvesting systems. While the FDCL also conducts the timber auctions, the actual task of felling, cross-cutting, and transportation are contracted out to private parties. The FDCL also has a social mandate to provide rural timber at subsidized rates and undertake afforestation activities.

The Forest and Nature Conservation Act of Bhutan 1995 defines forests as follows: 'Forest' means any land and waterbody whether or not under vegetative cover, in which no person has acquired a permanent and transferable right of use and occupancy, whether such land is located inside or outside the forest boundary pillars, and includes land registered in a person's name as tsamdrog (grazing land) or sokshing (woodlots for collection of leaf litter).

According to Chapter III of the Act all forests are declared as Government Reserved Forests with the exception of Community Forests. However, the latter shall revert to Government Reserve Forests when they cease to be used by the community.

Forest resources or 'Forest produce' includes the following, whether or not found in the forests:

- trees and parts or product of trees, including timber, firewood, charcoal, bark, wood-oil, resin, latex, or natural varnish, katha/kutch, etc.;
- wild plants and parts of products of wild plants, including flowers, seeds, bulbs, roots, fruits, leaves, grasses, creepers, reeds, orchids, bamboo, cane, fungi, moss, medicinal plants, herbs, leaf mould, or other vegetative growth, whether alive or dead;
- wild animals, including fish, and parts and products of wild animals including skins, hides, feathers, fur, horn/antlers, tusks, bones, bile musk, honey, wax, lac; and
- boulders, stone sand, gravel, rocks, peat and surface soil.

Among others, the Land Act 1979 regulates land utilization and conversion. For example, irrigated rice land (Chushings) cannot be converted to orchards or used for real estate development. However, there is public pressure for such conversions due to the profitability of orchards compared to paddy cultivation. Similarly with escalating property prices and high rental incomes, landowners in the urban areas or in the vicinity of urban centres have every desire to maximize benefits from their properties according to the market circumstances.

The Social Forestry Rules of 1990 was consolidated into the Forest and Nature Conservation Act of 1995. This provides for the possibility of practising community forestry and private forestry with the objective to promote community based forestry, assisting rural people to become self-sufficient, integrate tree planting into farming systems and transfer resource management to user groups.

According to the Rules on Community Forest, any area of the Government Reserved Forest that is suitable for management by a local community can be designated as a 'community forest area'. All households traditionally using a particular forestland unit can form a user group. The government provides seeds and seedlings and extension services free of cost. Furthermore, there is no royalty levied on the use of forest products by the members of the user group. If the community group sells the forest products after meeting local requirements, the proceeds must

go to the community account for use in implementing the management plan, protecting the forest and for other community purposes.

The Private Forest Rules allow any person to take forest produce from his own registered private land without permit or royalties, provided that the tree(s) was planted (or sprouted naturally) on the land no earlier than 1979. Private Forest can be established in dryland (kamshing), rotation land (pangshing—cultivated once every four to five years), shifting cultivation land (tsheri) and land adjacent to homestead provided it is registered and does not exceed the 25-acre ceiling.

9.2.2 Timber Marketing and Pricing Policy 1999

On 1 January 1999, the government introduced a timber pricing policy and banned the export of timber in the round form or the sawn form. The main basis for this policy is to conserve the environment, ensure adequate supply of timber for local consumption at low prices and then to allocate sustainable forest production, after local demand is met, to promote value-based forestry industries (Tsering 2002).

The salient features of the policy are as follows:

- Ban on the export of timber in sawn or log form, or as firewood;
- All sale of timber to be conducted through open auction where only Bhutanese nationals are allowed to participate;
- The timber prices are to be determined by market forces based on demand and supply unlike the previously administered pricing system;
- Exports of semi-finished and finished products are allowed as per technical specifications (defined in Box 9.1); and
- Export auctions for logs permitted only if the logs cannot be sold in two consecutive domestic auctions.

Box 9.1. Definitions of Timber Products

Semi finished timber products: door and window frames, door and window panels, ceiling beats, cross arms and wood panels.

Finished Timber Products: particleboard; ply wood, furniture, broom handle, lathe turned railings.

Source: Forest and Nature Conservation Rules of Bhutan 2000, Vol. 1,

Despite the export ban on timber in its primary form, the timber prices in the country increased, contrary to expectations that prices would fall as a result of the export ban. Timber prices increased from Nu. 70 per cubic feet (cft) in 1999 to Nu. 88 per cft in 2000. A study conducted by the Ministry of Agriculture revealed that the rise in timber prices was fuelled by increased exports in the form of semi-finished timber products (MOA 2002c). In April 2000, the government banned the export of semi-finished timber products as it suspected that the surge in exports of such products led to the increase in timber prices.

The decision to ban the export of semi-finished timber products was based on the fact that items like core veneer were exported with minimum processing and value addition in the country. Furthermore, vast quantities of timber in the form of planks and panels were also being exported, thus driving up prices in the local market.

9.3 Economic Significance of the Sector

It is not possible to quantify and impute the value of all the goods and services provided by forests. For example, the aesthetic value of a forest is a major source of tourism, not to mention that the forest also holds immense wealth of biodiversity, both of which cannot be monetized. Similarly, firewood is a major source of free fuel for a majority of the rural people (that too is not monetized). Hence the benefits derived from forests are not captured in the National Accounts and Statistics and there is a tendency to overlook aspects that cannot be quantified and monetized. The following tables seek to highlight some of the contributions based on what can be calculated and estimated. Table 9.1 shows that forestry sector contributes just over 10 percent of GDP. It should be noted, however, that this estimate only includes value addition from logging and processing of timber. It does not include the goods and services derived at a subsistence level in the form of food, fuelwood, medicines, fodder, to name a few.

Table 9.1 Contribution of Forestry and Logging to GDP

Year	Share of GDP (%)	Annual Growth Rate (%)
1998	11.13	2.9
1999	10.61	5.0
2000	10.64	4.5
2001	10.23	2.5
2002	10.70	3.2

Source: NSB (2004a).

The fiscal contribution of the forestry sector to domestic revenues only includes the proceeds from the Forestry Development Corporation Limited (FDCL). The direct contribution of FDCL is as shown in Table 9.2.

Table 9.2 Revenue Contribution of the FDCL

Year	Corporate Tax (Nu. million)	Royalty (Nu. million)	Dividend (Nu. million)	Total (Nu. million)	Share of total revenue (%)
1999	2.96	14.24	-	17.20	0.49
2000	8.33	12.86	6.00	27.19	0.70
2001	16.23	12.91	30.00	59.14	1.31
2002	14.24	15.85	15.00	45.09	0.88

Source: RMA Monthly Statistical Bulletin, June 2003.

It is evident from Table 9.2 that the sales and proceeds of FDCL form only a small proportion of the total revenue. This is because the above calculations do not account for the revenue forgone for timber provided at subsidized rate to the rural people, the Dzongs and the monasteries. It is not possible to obtain the accurate size of the subsidy due to data problems. The only available figure shows that in the Seventh Five Year Plan (1992-1997), the government subsidized the royalty for rural timber by Nu. 194.142 million,⁶⁶ which represents about 2.15 percent of the average current expenditure during the Plan period. If the commercial value of the timber is taken into account, the government had forgone revenue of Nu. 3684.588 million or about Nu. 737 million per annum, that is to say, about 40 percent of the average annual revenue for the Plan period.

Although Bhutan has a comparative advantage in forest resources, the contribution of the forestry sector to exports is far below its potential. As shown in Table 9.3, the contribution of wood products to exports currently constitutes less than 5 percent of total exports. Such low levels of export performance are mainly due to the strict conservation policies, the inefficiency of the industry due to low levels of technology and skills and the existing ban on the exports of logs, sawn timber and semi-finished timber products.

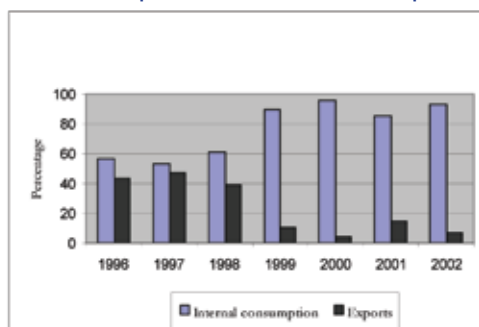
Table 9.3 Export of Wood Products
(Figures in Nu. million)

Exports	2000	2001	2002	2003
To India	294.31	240.10	n.a	232.25
To rest of the world	0.084	6.80	n.a	0.22
Total wood exports	294.39	247.04	n.a	232.47
As % of total exports	6.38	4.94	n.a.	3.34

n.a.: Not available

As shown in Figure 9.1, there was a drastic decline in the exports in 1999. The main exports are finished products, which include particle board, plywood, furniture, broom handle and lathe turned railings. With the exception of wooden broom handles exported to Europe, other products, including logs, are primarily exported to India and Bangladesh.

Figure 9.1: Trends in Internal Consumption of Timber and Exports 1996-2002



⁶⁶ National Assembly, Proceedings and Resolutions of the 79th National Assembly Session, 2001, Thimphu.

The contrast between a vast endowment of forest resources and the marginal contribution of forestry to national income and exports reflects a tension between the imperatives of utilization on the one hand and conservation on the other—with both pulling in the opposite direction. Bhutan lies in the Eastern Himalayas, which is recognized as one of the ten global ‘hot spots’ for biodiversity. The microclimatic conditions prevalent in Bhutan allow for rich ecosystem diversity, and the country is home to numerous species of birds, animals and plants. Bhutan is lauded internationally for its environmental credentials and for seeking a holistic approach to economic development. National conservation efforts are driven by traditional and cultural beliefs and the imperative to protect forests and the watershed ecosystem to support agriculture and hydropower sectors.

The Forest and Nature Conservation Act 1995 and Chapter VI of the Forest and Nature Conservation Rules 2000 empower the Ministry of Agriculture to initiate the process for declaring protected area status for any area that has biological significance locally or globally and if the area is under threat, or if the area is worthy of conservation. At present, almost 28 percent of the country is declared as protected area. Unlike other countries with wide expanse of pure wilderness, the national parks in Bhutan also include areas with human settlement as shown above. Due to the extensive interface between agriculture and forestry in Bhutan the people have traditionally depended on the forests as a source of timber, food, and fodder. Therefore, the declaration of these areas as national parks creates tensions between conservation and forest utilization.

State interventions to govern access to resources are justified on the basis that increasing population pressure and growing commercialization could lead to overexploitation of the forest resources. For the vast majority of the people dependent on subsistence agriculture and forest resources, biodiversity conservation is often a secondary concern to making a living.

For example, the establishment of the Jigme Singye Wangchuck National Park (formerly the Black Mountain National Park) in 1995 was received with mixed responses from the public. Small communities called the Monpas depend on resin tapping from chirpine forests for over 25 percent of their income. However, the Park management in 2002 banned resin tapping, citing conservation reasons, without providing compensation or alternative income opportunities (Giri 2004). It is likely that the absence of ownership and user rights to these resources will reduce the incentive for local people to conserve and manage forest resources sustainably.

The tensions between conservation and utilization was discussed at all levels (including at the National Assembly) after one of the Chimis (Assembly members) submitted that “Most of our people are agriculturists and the affect of nature conservation on agriculture should be carefully looked into.” They expressed concern that the Forest and Nature Conservation Act forbids farmers from clearing the area outside their landholdings, which turned into dense undergrowth allowing wild animals to come closer to the fields and destroy the crops (Kuensel 2002).

The main concerns are destruction of crops by wild boar and the predation of cattle by leopards and tigers. A 1996 study showed that farmers lost about 40 percent of the crops on average to boars, monkeys, deer, etc. (Choden and Namgay 1996). While wild boars can be killed within the farmlands, the law protects tigers and leopards. To address the loss of livestock, the government

has established a compensation mechanism for the loss of animals to tigers and leopards at the following rates: Horses: Nu. 3500; Mules: Nu. 7000; and jersey cows: Nu. 7500 (Kuensel 2004a). However, there is no compensation paid for cattle lost to wild dogs, known predators.

From the above assessment it is apparent that the cost of conservation is directly borne by the people through crop loss and indirectly through limited access to forest resources. As there is a direct link between the livelihood of the people and conservation, it is important to ensure that the integrated development policies pursued in the park areas is stepped up to make a meaningful difference in the lives of the people. This can best be achieved through sustainable economic benefits for the local people. This includes diversification of tourism products to include eco-tourism and community-based tourism with benefits for local communities. In the future, there is likely to be immense benefits from bio prospecting and utilization of genetic resources. Efforts must be made to ensure that local communities benefit from such scientific and commercial ventures.

9.4 Subsistence Use of Forest Resources

As the majority of the Bhutanese live in the rural areas, the forest serves as a valuable source of subsistence livelihood, helping to supplement inputs of fuel, food and medicine. For example, the Renewable Natural Resources Statistics 2000 shows that a vast majority of the people are dependent on non-timber forest products (MOA 2002b). About 42 percent of the households depended on bamboo resources used for various purposes. At least 20.7 percent of the households in the country harvested wild mushroom whose total annual harvest in 2000 amounted to 96 metric tonnes fresh weight. About 38.6 percent of the households have engaged in fern top harvest. Fern tops are either consumed by the farm households or sold to urban consumers. It forms an important ingredient of curry dishes during the season. Other forest products include caneshoots, edible oilseeds, lemon grass oil, dyes, resins, chirata and pipla.

Bhutan's microclimatic conditions, high forest cover and scattered and small-sized farms provide the basis for an intensive forest and agriculture interface (FAI). Furthermore, the lack of suitable arable land compels the people to exploit forested areas for crop production and as a source for food and other non-timber forest products. While the forest and agriculture interface can be assessed at many levels, this paper will focus only on the following three major issues.

9.4.1 Shifting Cultivation: Potential and Constraints

The practice of shifting cultivation is known in Bhutan as Tsheri, and as 'slash and burn' cultivation or 'swidden' agriculture elsewhere "The essential characteristics of shifting cultivation are that an area of forest is cleared, usually rather incompletely, the debris is burnt, and the land is cultivated for a few years—usually less than five—then allowed to revert to forest or other secondary vegetation before being cleared and used again" (Upadhyay 1995).

Tsheri cultivation is prevalent in Bhutan due to high terrain, low soil fertility, limited farm labour,

non-feasibility of irrigation, etc. Currently it is estimated that there are about 148,582 acres registered as Tsheri land. This represents about 30 percent of the total agriculture land area. In 1996, there were about 25,146 households dependent on Tsheri cultivation.⁶⁷ This represents about 39 percent of the estimated 65,000 farming households (Roder et al. 2001).

The Tsheri farmers are mainly comprised of the poor, landless and near landless who have less access to capital, credit and modern farming techniques. The main crops grown are maize, buckwheat and millet. The main advantages of Tsheri compared to the permanently cultivated land are: higher outputs per unit of input, as it does not require other inputs other than labour and seed. The Tsheri farmers either operate in groups or individually. For those with small holdings, the group system allows them to achieve economies of scale, security when farming beyond the village boundaries and equitable access to the produce.

The fallow period is of duration 6-10 years in low altitude and 10-12 years in higher altitude. However, growing population size and commercialization has led to a shorter fallow period. This causes rapid declines in soil fertility and stability, as recurrent burning destroys leguminous plants and reduces the variety of vegetation.

Due to growing concerns about the negative environmental effects of shifting cultivation, the government has indicated its desire to phase out shifting cultivation as early as possible. The Forest Act of 1969 has prohibited fresh clearances for shifting cultivation but has not discouraged its practice where such cultivation does not endanger the safety of the highway and public property. In 1986, the National Assembly resolved that if Tsheri land was left fallow for more than 12 years, the land would revert back to Government Forest. The 72nd session of the National Assembly in 1993 decided “to ban Tsheri cultivation completely by the end of the Seventh Five Year Plan (i.e., 1997) in the interest of the people and preservation and the protection of the environment.” The 1995 Forest and Nature Conservation Act also banned additional clearing of forestland for Tsheri, and the Act states that shifting cultivation can only be continued at the forbearance of the state (FAO 1999b).

With negative environmental impacts arising from forest fires, short rotation periods and the growing population pressures, the potential to expand such agro-forestry practices is limited. To address the needs of the people, the government has granted productive land for resettlement in fertile areas of the country so that the people can also benefit from closer access to health and education facilities and other modern infrastructure.

Section 16 of the Forest and Nature Conservation Act 1995 encourages people to grow and nurture forest crops on registered private lands (excluding tsamdrops and sokshing). The significance of allowing individual and community ownership of forests is that farmers will no longer practice shifting cultivation to retain ownership over the land (Tsering 2002). By 1995, the National Assembly members reported that following the ban on Tsheri cultivation, some people had converted such land to wetlands for paddy and drylands for cultivation where suitable and others to orchards and private pasture lands. However, statistics on conversion are not available.

⁶⁷ Ministry of Agriculture, ‘Report to the 74th session of the National Assembly’, 1996.

9.4.2. Migratory Herding: Potential and Constraints

The traditional farming system in Bhutan has evolved to integrate crop production, animal husbandry and forest in a mutually supportive way, highlighting the interface between agriculture and forests (Wangdi 2002). Pastoralism is a way of life for livestock holders in Bhutan and the majority of the herders are agro-pastoralists. Transhumance in Bhutan evolved as a response to the biophysical limitations characteristic of mountainous regions where seasonal migration is necessary to escape the dry cold winters and seek suitable pasture lands.

Livestock production contributes about 8 percent of the GDP and forms a major source of livelihood for the rural people, contributing to food, cash income and agriculture through manure and draught power. Tsamdrops or grazing lands constitute 1564 sq. km or about 4 percent of the total land area of Bhutan. Following the enactment of the Land Act of 1979, grazing lands became the property of the State whereby herders only enjoy grazing rights, either individually or collectively. The Forest and Nature Conservation Act 1995 includes grazing lands in the definition of forests.

The two main types of livestock migration in Bhutan are yak migration and cattle migration. The yak migration takes place from high-altitude areas (up to 5000 metres) to temperate areas (2600 metres). In the highland areas above the tree line (4000 metres), yak rearing is the only viable economic activity utilizing the abundant alpine grasslands. The herders follow traditional migratory patterns to the designated pasturelands where they have grazing rights.

The main migratory cattle breed includes Mithun (*Bos frontalis*), Mithun crosses and Siri. The migration takes place from the temperate and sub-alpine regions in the summer to subtropical regions in the winter. The cattle mainly forage in the forested areas where herders have traditional grazing rights. Cattle move from Haa and Paro to Chhukha and from Bumthang to Mongar, Lhuentse, Zhemgang and Trongsa. People are attracted to migratory cattle herding for the following reasons: to address fodder shortage; to retain ownership of tsamdrops; to prevent tsamdrops from being forested; and to cultivate crops in the lower regions. While the cattle roam in the foraging grounds, the herdsmen extract various non-timber forest produce such as cane to make handicrafts, twine to make ropes and numerous other food plants. These products help to diversify food sources and supplement income.

Cattle migration and forest grazing is being discouraged as it is believed that excessive foraging harms the environment by causing soil erosion and landslides, reducing forest regeneration, and felling of trees by herders. In the 1980s, the government made some efforts to sedentarize migratory herding. This was later discontinued due to the conflict between such a policy and the Land Act, which declared that all pastures fall in government reserve forests. The government has been trying to discourage cattle migration through the supply of improved exotic cattle breed such as jerseys and brown Swiss. However, the success has been modest. This is evident in the fact that native breeds still account for about three quarters of the 250,000 cattle numbers in the country. Despite efforts to promote private pasture, natural grasslands and forest grazing continue to form a major source of fodder.

The role of migratory cattle and yak herding is important for the income generation of the people

dependent on such livelihood. Table 9.4 is indicative of the importance of migratory cattle herding for households in Haa District. Cattle herding is the main source of income accounting for almost 70 percent of total household income. The cash income from the sale of milk and milk products is used to buy or exchange food commodities and other farm and household items.

Table 9.4 Income from Migratory Livestock for Households in Haa

Source of Income	Nu.	%
Sale of butter	43,272	36.0
Sale of cheese	36,460	30.0
Sale of meat	500	0.4
Sale of livestock	5500	5.0
Income from cattle	85,732	71.4
Hiring of horses for carrying goods	23,325	19.5
Income from livestock	109,057	90.9
Sale of cash crops	9281	8.0
Sale of vegetables	1200	1.0
Gross income per year	119,539	100

Source: Moktan et al. (2004).

Although migratory herding provides an important source of livelihood, the potential to expand the practice is limited in view of the perceived ecological threat posed by such practices. The herders themselves are largely rural folks whose voices are seldom heard. Migratory herding is attractive for the people because it does not require lumpy capital investment (for fencing materials and feed costs) and migratory cattle are more resilient to diseases compared to improved breeds raised on sedentary farms.

The potential for livestock development is huge due to a vibrant demand for dairy products such as milk, butter and cheese in Bhutan from an increasing population and growing incomes. The deficit in dairy products is evident in the large import of dairy goods from India, which amounted to Nu. 240 million (or 2.3 percent of imports) in 2003.

However, there are several environment and socio-cultural constraints that affect the productivity and future potential of this kind of livelihood. There are growing concerns on the impact of excessive grazing on rangelands and forestlands, leading to environmental concerns. Other concerns relate to illegal tree felling, excessive lopping of fodder trees and forest fires set by the herders.

In 1969, the government banned the use of fire in the grasslands. This resulted in invasion of the grasslands by other plant species and poor quality of grass (Ura 2002). The reduction in the quantity of fodder available from traditionally used grasslands has led to increased pressure on forests. The nutrient recycling process is poor in the rangelands as the herders remove the dung for fuel purposes, and leads to a decline in the quality of pasture.

The aversion to culling of unproductive cattle for religious reasons reduces herd productivity and places more pressure on natural grasslands. Herders also maintain large herd size as a symbol of social status. The practice of cattle migration reduces the potential for breed improvement, as crossbred animals are not suited to walk long distances (Roder et al. 2001). Farmers also give low priority to fodder development because their animals are not productive enough to respond to better feed (Roder 2002).

Migratory cattle herding may also be on the decline as the lack of farm help and the availability of other income generating activities in the villages makes such a lifestyle unattractive (Kuensel 2005a). While this may reduce the pressure on the forest, it is likely to increase the grazing pressure on agriculture land and the forests in the vicinity of the villages, which are also sources for water, fuel wood and non-timber forest products. Thus there is a challenge to balance the strength of domestic livestock species, particularly those depending directly on land resources, with the production and carrying capacity of these resources.

9.4.3 Biomass: Potential and Constraints

Traditional soil fertility practice in Bhutan is supported by organic nutrient sources such as animal dung, crop residue and forest litter and their combinations. Forest litter is collected from the sokshing (public woodlot on which either individuals or a community have user rights or leaf litter, fodder and dry firewood). The leaf litter collected from the sokshing is used as bedding for cattle and the decomposed material is used as a source of organic fertilizer. The access to sokshing has a direct bearing on agricultural productivity and livestock as it needs low levels of input and provides high level of sustainability for organic farming.

In the past, the person who registered sokshing in his name owned the area. However the Land Act of 1979 defined sokshing as “forest to be used as a source of leaf litter and fodder as the owner has no right over the standing trees and the land over which the sokshing is established.” The Forest and Nature Conservation Act 1995 includes sokshing under the definition of ‘forests’ over which no person has permanent or transferable right.

The organic fertilizer collected from the sokshing has vast potential, as the main input cost is labour needed to collect the leaf litter. Such organic source of fertilizer is important for poor farmers for whom chemical fertilizers are neither affordable nor desirable as it can harm the long run soil fertility. Hence, access to leaf litter is important for agriculture and livestock purposes. Natural fertilizers will be very important if Bhutan adopts an agriculture policy to capture niche markets for organically grown farm products.

A study conducted by the Ministry of Agriculture showed that the main practical constraints to utilizing organic fertilizers was the shortage of farm labour and the distance to the sokshing. For example, in one watershed community, organic fertilizer was applied only to 13 percent of the fields which were more than 30 minutes away from the leaf litter source and in 52 percent of the fields less than 30 minutes away (MOA 2001). Another study conducted in Chumey village in Bumthang district showed that nearly 50 percent of the farmland was fallow. Such a high rate of

uncultivated lands has been attributed to the difficulty of guarding the crops from animals living in the sokshing near the farmland (Wangchuk 2001).

While sokshing provides valuable inputs in agriculture, state ownership of property rights and tenure has discouraged the people from carrying out enrichment plantations in the degraded areas, as anything grown on it is government property (Wangchuk 2005). This could undermine the long run sustainability of sokshing.

9.4.4 Rural Timber: Potential and Constraints

After the nationalization of forests in 1969, the government regulated access to forests and instituted a system to provide subsidized construction timber for the rural people and free access to non-timber forest products for subsistence use. Due to the abundance of forests and free access to forest resources till 1969, construction of traditional houses is heavily wood dependent. The provision of subsidized timber has been one of the main pro-poor interventions that have allowed the people, especially the rural poor, to enjoy access to adequate shelter. This section will discuss briefly the rules and regulations governing the rural access to construction materials. The entitlement and access is shown in Table 9.5.

Table 9.5 Rural Timber Royalty Rates

Species	1993–June 2000		July 2000 onwards	
	Number of Trees	Royalty Rates per Tree	Number of Trees	Royalty Rates per Tree
Coniferous	Up to 50 trees	Nu. 10	Upto 10 trees	Nu. 40
	51–100 trees	Nu. 30	<i>Cham</i> size	Nu. 30 upto 80 trees
Broadleaved	Up to 5 trees	Nu. 60	Upto 10 trees	Nu. 120
	6–10 trees	Nu. 140	<i>Cham</i> size	Nu. 40 upto 60 trees
	11–20 trees	Nu. 180		
Sawn timber*	1 cft	Nu. 0.50 (upto 3000 cft)	1 cft	Nu. 1.00 upto 2000 cft
Logs	1 cft	Nu. 0.40 (upto 3000 cft)	1cft	Nu. 0.80 upto 3000 cft

*for those living within 1 km from a motorable road.

Source: Department of Forest and National Assembly.

The rural royalty rate is 8-25 percent for standing trees and 5-9 percent for sawn timber compared to commercial rates.⁶⁸ For example, the rural royalty rate for logs is Nu. 0.80 per cft while the commercial royalty rates are in the range Nu. 14-21 per cft. The subsidized rate for procuring timber from sawmill for rural house construction is Nu. 87 per cft, which is less than half of the commercial rate of Nu. 220 per cft. It is clear from Table 9.5 that the government has reduced the quantity of wood and revised the royalty rates upwards. In order to prevent misuse of privileges granted to the rural people, there are stringent regulations on the movement of timber from one area to another.

⁶⁸ 'Revision of Royalty for Rural House Construction', *Proceedings and Resolutions of the 79th Session, National Assembly, 2001.*

In rural areas that have road access, the government has also introduced a system for the rural people to purchase subsidized wood directly from FDCL designated sawmills rather than felling it from the forests. Rural people can get subsidized timber every 30 years within the set limits (shown in Table 9.6) for new house construction and renovation.

Table 9.6 Amount of Timber Allotted for Rural House Construction

	For New House Construction		For House Renovation	
	Conifer (trees)	Broadleaved (trees)	Conifer (trees)	Broadleaved (trees)
<i>Drashing</i> (for flooring)	4	4	3	3
<i>Cham</i> (support)	80	60	6	4
<i>Tsim</i> (for rafters)	80	60	8	6
<i>Dangchung</i>	100	80	10	8
OR				
Sawn timber *	2000 cft	2000 cft	400 cft	400 cft

*for those living within 1 km from a motorable road.

Note: 1 cubic foot = 0.028317 m³

The Forestry Resource Potential Assessment 2004 estimates that the average annual rural supply of timber from inside and outside the Forestry Management Units is about 3.3 million cft (or 94,400 m³) (FRDD 2004). Table 9.7 shows the timber extracted for rural use from FDCL authorized sawmills.

Table 9.7 Supply of Rural Timber

	2002	2003	2004
Total timber supplied (cft)	2,115,311	2,052,390	2,227,121
As % of total timber			
Rural	18.82	13.00	14.32
Commercial	76.25	78.28	80.23
Exports	4.62	4.04	1.42
Others	0.31	4.67	4.04
Total	100	100	100

Source: FDCL, May 2005.

About 10 percent of the rural wood demand is met through FDCL supplies through the designated sawmills at subsidized rates. The rest of the rural demand is met from the local use areas, which are the forest areas within 1.5 km from the village. The rural people must obtain permits from the Department of Forest and follow certain prescribed procedures. The royalty is paid on the trees felled and this ensures that care is taken to prevent wastage.

Present estimates show that the production potential to supply logs for rural use is sustainable, as shown in Table 9.8. It has been estimated that the overall rural wood production capacity can meet demand in a sustainable manner for both logs and firewood. In fact, rural supply of logs shows an excess capacity of more than 60 percent of projected demand (DOF 2004). However, there are concerns due to the skewed spatial distribution of forest resources, with some areas likely to face difficulty in accessing timber due to the villages being distant from the forest groves.

Table 9.8 Production Potential and Estimated Wood Demand by 2014
(in m³)

Product	Production Potential (m ³)				Estimated Demand	Balance
	Inside Management Areas		Outside FMUs	Total		
	In operation	Potential				
Logs FDCL	51,000	62,000	-	113,000	112,000	+ 1,000
Logs rural supply	17,000	21,000	208,000	246,000	94,000	+ 152,000
Firewood, others	43,000	81,000	407,000	531,000	505,000	+ 26,000

Note: 1 cubic foot = 0.028317 m³

Source: DOF (2004).

Although rural people have access to cheap subsidized timber, there are several constraints that limit their full utilization. One of the major constraints is the cumbersome procedure for obtaining timber. The procedure, on average, is supposed to take two months. However, to get the signature of various authorities, it can at times take up to a year. The cost and time involved in completing the procedure can be very high for people who do not live in the vicinity of the Dzongkhag Authorities, as they have to travel to these places to follow up on their applications.

The cost of extracting and transporting timber also rises if the tree-felling site is located a long distance from the village. More recently, provisions have been made for the rural people to purchase timber for house construction from designated sawmills. While this may save time by not having to physically go to the forests more time is lost by fulfilling lengthy procedures.

Numerous other issues have arisen in regard to access to timber for construction. In a submission to the 79th Session of the National Assembly, several Chimis (members of parliament) stood up to voice the following concerns:

- Added burden due to the increase in the royalty for timber;
- Need to allow more than two years to extract timber for houses with less workers;
- Allotted quantity of timber is insufficient to meet house construction needs as traditional Bhutanese houses use timber intensively;
- The 30 year minimum period to obtain timber is too long;
- The procedures for getting timber are too burdensome; and

The eligibility to purchase timber from sawmills (upto 2000 cft) is not very meaningful for the poor, as they cannot afford to buy the timber even at the subsidized rate of Nu. 94.60 per cft.

In addition to subsidized access to construction timber, the rural people also enjoy access to very cheap sources of energy through access to firewood. Bhutan is extremely dependent on firewood and has one of the highest levels of per capita consumption in the world at 1.8 m³ or 1.27 tonnes (WWF 2004). Although Bhutan is a net exporter of hydropower, traditional fuels like firewood account for over 98 percent of the total energy supply at the household level (FAO 1998). This high dependence is partially due to the large proportion of rural population and the low reach of electrification programmes at present. Even with expanding electrification programmes, firewood is likely to remain a major source of fuel for cooking and heating because it can be obtained almost free of cost for the rural people. In addition, electrical appliances are expensive and mostly beyond the reach of the majority of the poor people. To address this problem, the government removed all import tariffs on energy and labour saving devices like rice cookers, curry cookers, electrical stoves, and water boilers from 2002.

Rural households have free access to dry firewood, logs, and tree tops from the forests in the vicinity of the villages. However, if firewood collected is insufficient to meet local needs, there are provisions for a permit system for felling trees for firewood. The households must follow the procedures given below:

- i) Procure approvals of trees for felling from the forest. The royalty rate applied is Nu. 80 per truckload for rural people.
- ii) Get the approved number of trees marked for felling in the forest.

It is estimated that the average firewood demand of a household with a size of 5.5 persons is about 12 m³ or about 10 trees (Wangchuk 1991).

Apart from rural demand, there is considerable firewood demand from institutions such as the monastic body, the armed forces, and schools, to name a few. Their demand is met largely from the Forestry Management Units, which supply parts of felled trees that cannot be sold as timber. The annual requirements of the two major industries are as follows:

- Bhutan Carbide and Chemicals Limited—120,000 m³ to produce charcoal.
- Bhutan Ferro Alloys Limited—165,000 metric tonnes of firewood to produce wood chips.

The Forest Resource Potential Assessment 2003, shown earlier in Table 9.8, indicates that firewood supply may be adequate till 2014. However, there are growing concerns on the sustainability of supply due to growing population and the non-uniform distribution of forest areas. As a result, there are dangers that some forests around settlements may degrade rapidly. Furthermore, consumers prefer hardwood varieties for firewood, placing immense pressure on species like the oak. To counteract this, the commercial supply of oak species was banned from the year 2000. Various initiatives have been undertaken to reduce firewood consumption for bulk users like schools and armed forces. It is reported that the introduction of energy efficient stoves cut wood consumption by almost 50 percent in some institutions (WWF 2004). Given the high levels of demand from the industries, commercial plantations need to be initiated to meet the industrial need.

9.5 Commercial Use of Forest Resources

From a commercial perspective, timber is perhaps the most valuable forest commodity that is traded due to its value and multiple use for construction, wood industries, manufacture of handicrafts and exports. This section will assess the status, potentials and constraints faced in the commercial utilization of timber as well as non-timber forest products.

9.5.1 Timber Resources: Status and Prospects^{69,70}

With the country having a high percentage of forest cover, there is a fairly high potential for extracting timber resources in the country. The total estimated standing growing stock on all forestland is estimated at 23 billion cft corresponding to an average stock of 8200 cft per hectare. However, the entire stock of forests cannot be utilized due to strict environmental regulations and lack of commercial and technical feasibility. The commercially operable areas include only those forests that fall under the forestry management units (FMUs) managed by FDCL as shown in Table 9.9.

Table 9.9 The Pattern of Forest Use

Category	Area (Ha)	% of Forest Area	% of Land Area
1. Total forest land	2,929,085	100	73
2. Forest area restricted for timber production	1,946,723	66	48
3. Forest area available for timber production	409,564	14	10
- Under FMU Management Plan	169,991	6	4
-Not yet covered by Management Plan	239,537	8	6%
4. Forest area that could be brought under timber production	572,798	20	15
-Forest around settlements	264,779	9	7
-Degraded forest	32,356	1	--
-Forest land presently too far from roads	275,663	10	8

Source: Department of Forestry, Forest Resource Potential Assessment 2003 cited in IFC/BCCI (2005).

As can be seen from the Table 9.9, at present only 10 percent of the total land area is considered as forests suitable for commercial production. This includes areas under the 15 FMUs and other planned FMUs. The presently operational FMUs and the planned areas are all located along the highways for easy road access. An additional 15 percent of the land area can be brought under production. However, due to lack of motor road access these areas cannot be utilized at present. The main constraint is the high cost of road construction in the country due to the rugged terrain and poor slope stability. Commercial logging is restricted in the vicinity of local settlements as these areas are reserved for rural use. Given the present forest policy and operational limitations for technical and commercial reasons, only about 6 percent of the total forest areas and 4 percent of the total land area is commercially utilized.

⁶⁹ Information and data for this section have, unless otherwise stated, been derived largely from IFC/BCCI (2005).

⁷⁰ This section looks only at timber before it reaches the wood-based industries. The problems and prospects of the wood-based industry are discussed in Chapter 11.

While the total forest stock is an important indicator of existing resources, it is equally important to assess the annual allowable cut (AAC) as it provides a dynamic measure of resource sustainability. The AAC is defined as the volume of timber that can be harvested from a particular area in any one year without harming future sustainability. The AAC for each FMU is derived from assessing the Mean Annual Increment (MAI) of the particular FMU. The Department of Forest estimates that with a MAI of 2 percent of the standing volume, the AAC is 35 million cft (1 million cubic metres) per annum if the 10 percent of total land area which is under management plans and those yet to be included under management plans are fully utilized. The AAC does not have a direct relation to the requirement by law to maintain 60 percent of the total land area under forest cover.⁷¹

The AAC from the areas presently under the FMUs is estimated at 17 million cft per annum. However, the present annual cut from the FMUs is only about 8-9 million cft per annum. Thus the annual cut is only 50 percent of the AAC, indicating vast potential to double the amount of timber extracted.

In addition to the unrealized AAC, about 240,000 hectares or about 6 percent of the total land area is available for timber production. Hence there is immense potential to increase commercial timber production without adversely affecting the environment or compromising the stringent conservation policies.

From the above assessment, it is evident that Bhutan's timber resources are largely underutilized from both the stock as well as the harvest perspective. As shown in Table 9.9, about 34 percent of the total forest area could be used for timber production. However, at present only 6 percent is under management plans and 9 percent is around local settlements for supply of timber for the rural people. This leaves total forest area of about 10 percent that is either too far from the roads (making it commercially unfeasible) and another 8 percent that is not covered by management plans due to shortage of skilled personnel to prepare scientifically sound harvesting plans.

In terms of timber extraction, the annual harvest is also far below the AAC. The present FMUs manage to extract only 8-9 million cft per annum from the estimated AAC of 17 million cft per annum from the 15 FMUs. This is mainly due to the operational limitations of the FDCL and other inefficiencies.

Although there is potential to extract more than double the present amount of timber on a sustainable basis from the FMUs, there are several constraints in reaching the target. The major constraints are discussed below.

Lack of road access

Vast tracts of commercially manageable forests lie in inaccessible areas, this is due to both the terrain and the limited road networks in the country. Therefore, most of the present FMUs are located in the vicinity of the highways. Road access determines the area selected by the specialists for forestry management as well as the cost of transportation. In areas proximate to the major highways, forest roads and tractor tracks have been built to connect the logging sites to the major road networks.

⁷¹ *Personal communications with officials of the Forestry Resource Developments Division, Department of Forest, Thimphu, May 2004.*

Lack of skilled personnel

Given the environmental concerns, timber harvesting in Bhutan is a highly specialized task that requires skilled professionals in technical, planning and management aspects. Due to stringent procedures involved in identifying potential logging areas—determining technical aspects of AAC, forest regeneration, economic feasibility for instance—a considerable amount of manpower and time is needed to prepare detailed management plans. With only a few skilled foresters trained in such scientific management techniques, further explorations are hindered.

Strict ecological and social regulations

Unlike countries with vast expanses of flat areas with clearly identified large tracts of land, timber harvesting in Bhutan has to adhere to several ecological and social considerations. The fact that 26 percent of the total land area of Bhutan is declared as protected area rules out the prospect for logging in an area comprising a quarter of the total land area.

- In areas where FMUs are identified, the following restrictions are applicable:
- No logging activities in the forest shrubs for ecological reasons;
- No logging in areas with steep slopes exceeding 45 degrees;
- Areas above 4000 metres cannot be logged;
- Road buffers of 150 meters from roads must be maintained;
- River buffers of 30 metres must be maintained;
- No FMU related logging activity can take place within a radius of 1.5 km of villages to allow local use of these areas close to the village; and
- Logging activities are prohibited in forest groves considered sacred by local beliefs.

Characteristics of natural forests

Since vast commercial plantations are absent in Bhutan most of the FMUs are located in natural forests. As a result, it is difficult to gauge the quality of standing trees. In addition, the trees in such forests grow in mixed species, often making the harvest unpredictable in both quality and quantity.

Furthermore, if the trees are left intact naturally, the over-mature trees are detrimental for overall forestry management, as these trees do not contribute to regeneration and become hosts to insects and pests that can destroy surrounding forests.

Once the FMUs are identified, it is the responsibility of the FDCL to harvest the timber according to the management plan provided by the Department of Forestry (DOF). In effect, the FDCL is a contractor with the exclusive rights for extraction and sale of timber. Domestic timber sales are conducted in the seven auction yards held once or twice a month. The FDCL sets the reserve price based on production cost and overhead costs and it is estimated that bids exceed reserve price by 60-70 percent on average. At the FDCL level, there are several factors that constrain the optimization of timber harvesting and sale due to policy as well as market reasons.

Mismatch between demand and supply

Since the FDCL conducts the logging operations in areas identified by the DOF, there is a mismatch between the quality and species of timber available in a particular FMU and the market demand. Hence harvesting is not market oriented, leading to the occasional glut for some species, particularly of the hardwood varieties. The demand for hardwood species is low since carpenters and wood industries prefer softwood for ease of working. The market potential of hardwood has not been realized due to the lack of technology and drying kilns.

Glut of hardwood species

Prior to the export ban on semi-finished timber products (SFTP), mixed hardwood species were used to make ceiling beats, and wood panels for exports. Due to the lack of seasoning kilns and low levels of local demand for such species, hardwood sales formed the bulk of wood exports. The ban on exports of logs and sawn timber, including SFTP, caused a major glut in this species.

Wastage

Once a tree is felled, it is estimated that it takes at least one month for the logs to reach the auction depot. This is because several procedures like felling, cross-cutting, lifting by cable cranes to the road head and transportation to the auction yard are often time consuming, which leads to wastage. In addition, once it reaches the auction yard, the logs remain unsold for long durations, exposing them to humidity and heat. This causes warps and cracks in the timber, especially of the hardwood species. In addition, the royalty for commercial wood is levied on the volume of timber sold and not on the trees felled. As a result, there is no incentive to minimize wastage of timber at the felling site as well as in transportation.

Lack of grading

Due to diversity in species and variation in timber quality within a given FMU, FDCL cannot extract and supply a single species in large quantities. This creates problems in marketing, as major wood industries and export markets demand single species. For example, different hardwood species require different conditions for drying and wood industries prefer single species for consistence in production.

Lack of technology

The lack of the appropriate technology causes wastage and difficulties in handling different species of timber. For example, the lack of proper kiln drying facilities to season the wood makes it difficult to sell hardwood species in the domestic market. Unlike other countries where hardwood fetches higher prices, conifer species are often more expensive in Bhutan. This is due to lack of wood seasoning technology and the preference of the construction sector for softer wood due to ease of working at present technology levels.

Ban on export of timber

The direct consequence of the ban on timber export has been the reduced revenues of the FDCL. The policy requirement for conducting export auctions only if the surplus timber cannot be sold in the domestic market in two consecutive auctions has increased the time lag between harvest and exports and a rise in levels of wastage due to deterioration in timber. Since the timber sold in export auctions is domestically unsold timber, the importers from India have low levels of confidence in the quality of timber. This could affect timber prices, for which Table 9.10 provides some evidence.

Table 9.10 Average Auction Price of Timber
(Nu. per cft)

Classes of Timber	Broadleaved		Mixed Conifer	
	A	BCDE	A	BCDE
1. Average Price 1999	96	75.47	86.24	71.64
2. Average Price 2000	103	70.91	87.70	82.89
3. Average Price 2001	109	67.30	95.64	94.94
4. Average Price 2002	100	69.83	99.73	86.78

Note: ABCDE refers to timber grade.

Source: FDCL.

9.5.2 Non-Timber Forest Products: Potential and Constraints

From the earlier section, it is clear that most of the Non-Timber Forest Products (NTFP) is collected and consumed by households for subsistence. According to the Forest and Nature Conservation Rules 2003, a Bhutanese citizen can take forest produce for domestic use from the Government Reserve Forests with or without a permit. However, for trading purposes a person has to obtain a harvesting permit and pay royalties to the Department of Forestry.

There is a general dearth of data on the importance and role of NTFP. However, a detailed study conducted on the role of bamboo in a village in Zhemgang district showed that bamboo and cane products accounted for about 66 percent of the household income (Moktan et al. 2004). The major NTFP that have received major commercial attention and have high export value are lemon grass oil, Matsutake mushrooms and Cordyceps Senesis.

Lemon grass is cultivated primarily in Trashigang, Lhuentse, Trashi Yangtse and Mongar districts in Eastern Bhutan. In 2003, an estimated 85,411 kg of lemon grass was extracted. The oil extract is exported to India, Canada and the United Kingdom for use in the essential oil business. This business enables rural harvesters to earn cash income. Farmers in the lemon grass oil business have been blamed for numerous fires that have been lit to burn lemon grass stubs to foster better growth.⁷² The high incidence of forest fires led some of the National Assembly members to call for a ban on the extraction of lemon grass oil in Eastern Bhutan. A parliamentarian reported that this practice had major negative impact on the environment and limited impact on the income of the majority of the people.

⁷² Such practices are considered one of the main reasons for higher incidences of fire in Mongar and Trashigang dzongkhags. For example, it is estimated that 11,800 acres of forest land (90 fire cases) was destroyed in Trashigang and about 32,000 acres (105 fire cases) in Mongar from 1997 to 2004. (Kuensel 2005b).

Matsutake mushroom, or Sanjay Shamu as it is locally known, is a naturally occurring product found in the temperate forests of Haa, Paro, Thimphu and Bumthang. Discovering a niche market for this high-value mushroom in Japan, and starting from 1991 with 362 kg, the export of this mushroom peaked to 11,470 kg in 1998 and fell drastically to 196 kg in 2000 due to declining production as well as competition from other countries like USA, China and Korea.

The price paid by the exporters to collectors for a kilogram of Matsutake varies from Nu. 800 per kg in 2000 and Nu. 250 per kg in 2002 to Nu. 480 per kg in 2003. This is a significant amount considering that the daily average wage for a worker in Bhutan is Nu.100 per day. This brings considerable income for the farmers in the mushroom growing areas. The average per capita income from Matsutake in 110 households surveyed in Genyekha village, Thimphu district, ranged from Nu. 5661 to Nu. 75,076 per year. Such high cash flow has enabled the people to take financial credit from the development bank and invest in cattle, farm machines and improved cattle breed (Namgyel 2003). However, mushrooms grow in the forests and there are growing concerns related to their sustainability, as people tend to overexploit the resource and also destroy the natural soil conditions needed for optimal growth.

Cordyceps Sinensis (locally known as Yartsa Goenbub, literally meaning plant in summer, insect in winter) is a rare fungal species found in the high-altitude valleys of Bhutan. It is listed in Schedule I of the Forest and Nature Conservation Act 1995, and is a highly protected plant species. It is highly valued in oriental medicine due to its supposed qualities as an aphrodisiac and a tonic. The high demand for the product has given rise to thriving trans-border smuggling and poaching activities in northern Bhutan. A study estimated that annual revenue losses were in the range Nu. 57.6 million to Nu. 144 million (US\$1.28 million to US\$3.2 million).

In July 2004, the cultivation and sale of *Cordyceps Sinensis* was legalized so that local people could benefit from additional income and ensure its sustainable use. The government has set a minimum floor price of Nu. 37,000 per kg and collects 10 percent royalty from the collectors. In August 2004, the highest bidder paid Nu. 87,100 per kg of *Cordyceps*. This is almost double the value of the amount that the collectors could get for selling it in the previous years. The product is exported to Hong Kong, Singapore and the United States.

The collection season is also fixed at 1-31 July every year. The transaction between the rural collectors and exporters is also monitored in the presence of the village head and forestry officials. While rural collectors do not need any licence, the exporters must register with the Ministry of Agriculture and also obtain phytosanitary certificates from the Bhutan Agriculture Food Regulatory Authority (BAFRA).

The legalization of collection and sale is expected to boost the income of the communities living in the high-altitude valleys of Bhutan who mainly depend on animal rearing. The communities have established local committees to monitor the collection and protect the growing areas.

With the exception of Matsutake mushrooms, there is scope for higher value addition in the case of *Cordyceps* and essential oils like lemon grass oil. The potential for exporting lemon grass oil is vast as there is a high demand for essential oils for use as natural ingredient in food, flavourings, cosmetics and aromatherapy. However, the production capacity is constrained, as the supply base

is limited and dependent on natural growth in the forest areas. With growing concerns about forest fires set by lemon grass collectors, environmental concerns may limit its cultivation. The other constraints arise from the lack of technology and skills to produce consistently high quality oil.

With growing markets in Hong Kong, China, Japan, Singapore and USA, Cordyceps cultivation has a vast potential. In 2003, the price for a kilogram of the product ranged from US\$800 to US\$1759 (Vinning and Tobgay 2004). However, there are many constraints due to lack of proper technology and skills to dry and process the product. For example, Cordyceps grow in the high-altitude areas of Bhutan, and are dried in the open by those harvesting them, which blackens the product due to strong sunlight. As the duration taken by the drying method is longer, the product also becomes brittle and hollow, leading to lower prices.

Since Cordyceps is mainly used to produce pills and capsules, there is potential to add value to the harvest in Bhutan. Considering the growing global market for oriental medicines, there is immense opportunity to enter into the international supply chain. While the Institute for Traditional Medicine uses the product in producing some of its medicinal products, it does not produce Cordyceps products for exports.

A major concern with all the three products stated above is the need to manage the resources in a sustainable manner. This is especially pertinent as these resources are all availed from the common property areas where private ownership is not legally established. To avoid the tragedy of commons and overexploitation, there must be a means of regulating access to these resources by the community themselves.

9.6 Policy Analysis

The discussion in the preceding chapters shows that Bhutan has vast expanses of natural forests covering almost 72 percent of the land area. The forests provide sustenance for the rural people and various non-timber forest products. However, only about 10 percent of the area can be utilized for commercial extraction of timber due to technical and commercial limitations. There are also limitations posed by stringent conservation policies.

This section will highlight how Bhutan can maximize the returns from forest resources given the high level of importance accorded to biodiversity conservation. It can be assessed at both the subsistence and the commercial level. However, there is limited scope for expanding the use of forest products at the subsistence level due to the ban on Tsheri cultivation, restrictions on livestock grazing and stringent policies on access to rural timber. These limitations are largely due to the conservation policies of the government. Thus, concerted efforts should be made to balance subsistence use of forest resources and their conservation through active dialogue between the government and the local people.

The ban on the practice of shifting cultivation was largely driven by its adverse effect on the environment. While the National Assembly passed the decision, it is not clear whether the views of the Tsheri cultivators, who live in scattered and remote communities, were heard. Further, there is

no data available on whether there was land conversion from Tsheri to other use as well as on the number of shifting cultivators who resettled in other areas. While the ban and resettlement may have uprooted the people from their traditional ways of life, resettlement would have definitely provided them better access to modern infrastructure, including health and education facilities.

With the ban on Tsheri, the government must facilitate people dependent on Tsheri to convert their land to other uses and legally register such land accordingly. In the case of resettlement, it is vital for the government to ensure that former Tsheri cultivators receive adequate training and necessary support to establish permanent farms in resettled areas.

The growing concern for environmental conservation has also cast the spotlight on livestock migration due to its impacts on forest degradation. Migratory herding continues to provide livelihood for the herders who derive dairy products as well as other non-timber forest products. Sokshing also plays an important role in promoting sustainable and organic agriculture practices. However, in both cases the lack of ownership rights limits the possibilities for overexploitation of these resources. Apart from providing resources for subsistence, the scope for further expansion is limited due to conservation concerns.

The provision of subsidized timber in rural areas is perhaps one of the ways to compensate the rural people for bearing the high cost of conservation activities. From a subsistence economy point of view such subsidies should continue to be provided as the rural people lack the monetary income to purchase timber and firewood, which are critical basic necessities. However, the present procedures to obtain rural timber are lengthy and burdensome for the people. Long and cumbersome procedures can lead to rent seeking behaviour among the forestry officials and also encourage the people to evade the regulations. Efforts must be made to either decentralize authority for granting rural timber from the central to the district level or improve efficiency by simplifying procedures.

On the commercial front there is immense potential to expand timber utilization from the perspective of standing stock as well as the AAC. The present annual cut from the FMUs is less than 50 percent of the AAC. With proper investment in technology, infrastructure and better management practices there is potential to increase the output levels even further without compromising on conservation.

To overcome the problems of unpredictable output (in quality and species) from natural growth forests, the government should further encourage private and community forestry. This will, to an extent, help to address problems associated with lack of supply of uniform species and wood grade for use in wood-based industries. The government should allow market incentives to determine production and marketing and limit its role to providing an enabling environment and ensuring uniform application of rules.

There is also immense potential to increase timber export. While the export ban on raw timber and semi-finished timber products (SFTP) exports may have helped to stabilize domestic timber prices it may be a temporary phenomenon. The excess timber available in the domestic market was absorbed by large government funded infrastructure projects and the booming construction sector. With the completion of large projects and stabilization of local demand there is likely to

be an excess quantity of timber. If the FDCL or other agencies can, in the future, increase timber extraction to the AAC permissible limits, then the ban on wood exports should be lifted to take advantage of export markets.

The ban on export of semi-finished timber products (SFTP) in 2000 had unintended consequences for timber industries as it effectively discouraged private investment in downstream activities. For example, firms that produce SFTP are most likely to specialize and diversify into producing finished products as they gain skills and accumulate capital to make further investments. Prior to the ban, firms made use of unwanted wood to make block boards for exports, which is considered as SFTP and is now not permitted. The government should reconsider allowing the export of selected SFTP to allow wood based industries to gain marketing experience and technical skills so that they can progress to higher value added production in the future.

From a market perspective, the major policy criticism is the monopoly held by FDCL in the extraction and sale of timber products. As a state owned entity it is less likely to provide the most efficient avenue to manage forest resources. There is immense scope for FDCL to improve its operations to enhance efficiency within the existing operational and policy parameters. For example, it is estimated that it takes 2-3 years for an FMU to become operational after approval is granted by the Department of Forestry. This is due to the need for road and bridge construction, installation of equipments such as cable cranes etc. Investments in mechanization of road construction and enhanced skill development can help to overcome this time lag.

The mismatch between demand and supply of timber is also a problem resulting from the lack of effective coordination between the Forest Department (the custodians), FDCL (the harvesting and marketing agent) and the sawmills and wood industries (consumers). In the present set-up there is no incentive for the Forest Department to identify areas that match market demand with supply. At present, FDCL operations are driven by harvesting targets that are not connected to the market demand. As a result, the end consumers of timber must adjust to the quality and diversity of timber available. The lack of single species in a consistent quality hampers the end users from attaining economies of scale. The FDCL could take measures to grade and sort out the timber according to species and quality. Similarly, FDCL should reduce the time taken to transport the timber from the felling site to the auction yard to reduce wood rot and cracking.

In order to overcome the difficulties with marketing hardwood species, FDCL should invest in a drying kiln to season the wood. Due to the lumpy investment needed, most wood processing industries are reluctant to invest in kilns. With a drying kiln, FDCL can correct the existing price distortion and obtain prices close to the actual market value of the wood for hardwood species. The supply of seasoned hardwood could in turn encourage wood-based industries to invest in technologies and skills to make wood products out of hardwood. This will not only boost production but also help to enhance exports of finished products.

Bhutan's wood industry must seek greater market shares in the Indian and Bangladeshi markets. The wood industry needs to enhance market penetration and ensure its competitiveness in these markets, which are already captured by domestic wood products and imports from Southeast Asia. To compete in these markets, Bhutanese industries must capture economies of scale as

well as upgrade the technology and skills base. Although forests and wood based industries are open to FDI, there has not been any investment in this sector as it is hampered by the minimum investment size of US\$1 million, which is a large amount considering the present policy and market environment in Bhutan. The government should consider revising the minimum level of investment downwards for the forestry sector.

From the discussions above it is clear that policies related to wood and wood-based industries exhibit high volatility. Such an unpredictable policy environment is not conducive to attract even domestic investments, let alone FDI. The government should frame and enact long-term policies that will allow industries to plan their business and also provide adequate notice for policy changes, if at all necessary.

In terms of non-timber forest products (NTFP), the decision to legalize collection and sale of Cordyceps provided an economic boon for the high-altitude people as well as helped to counter poaching and smuggling by illegal entrants from across the northern border. Such recognition of traditional rights of the collectors provide a valuable community based resource management mechanism to ensure resource sustainability.

Apart from the three products discussed above there are various other non-timber forest products in Bhutan whose export values have not been assessed. Given the vast potential, efforts must be made to explore markets for these resources as well as increase domestic value addition. For example, essential oils can be converted into flavourings and scents and Cordyceps can be processed into pills within Bhutan. However, foreign investment in technology and skill and effective strategies will be required to penetrate the markets in East Asia and beyond.

To conclude, there is vast potential to increase the utilization of forest resources without undermining the environmental concerns. Given narrow resource endowments and the other structural challenges facing the Bhutanese economy, forest represents an area of strong comparative advantage. Therefore, there is a need to balance resource utilization and conservation through policy amendments, improvement in technologies and skills and exploration of export markets.

9.7 Summary and Conclusions

Bhutan has a constitutionally mandated policy of keeping at least 60 percent of land under forest cover. The present coverage is estimated to be about 72 percent, which is a great asset for the people of Bhutan. Free access to forest products, especially for the rural people, has effectively helped to avert situations of extreme poverty, destitution and homelessness. Besides, timber and wood-based products derived from the forests are an important source of export earnings. Forests are also vital for maintaining water catchments areas to support agriculture, the main source of livelihood for the people, and the hydropower sector, which is the largest source of revenue and growth.

Present estimates show that the production potential to supply logs for subsistence rural use is sustainable. In fact, rural supply of logs shows an excess capacity of more than 60 percent of

projected demand. Although rural people have access to subsidized timber, there are several constraints that limit their full utilization. One of the major constraints is the cumbersome procedure for obtaining timber, which on average takes about two months.

Use of timber for commercial purposes is also underutilized from both the stock as well as the harvest perspective. The annual cut is only 50 percent of the allowable annual cut (AAC) consistent with sustainability. Moreover, an additional 6 percent of the total land area is available for timber production, which if utilized would further enhance the annual allowable cut. Hence there is immense potential to increase commercial timber production without adversely affecting the environment or compromising the stringent conservation policies.

One of the major reasons for underutilization of timber is that the government has banned the export of raw timber as well as of semi-finished timber products in order to promote finished wood products with greater degree of value addition. While the desire to move toward higher value-added products is understandable, it must also be recognized that while these industries remain small and negligible Bhutan loses valuable foreign exchange by prohibiting the export of timber and semi-finished timber products. What matters for economic efficiency is that encouragement be given to products with comparative advantage; and products with higher value-added do not necessarily have comparative advantage over those with lower value-added. If the market reveals that Bhutan has a comparative advantage in raw timber and semi-finished timber products rather than finished products, then the efficiency loss from current policy restrictions must be justified on some other ground.

One such ground is environment. It is possible that the government does not want to encourage large-scale export of raw timber and semi-finished timber products on environmental grounds, even if they were found to have comparative advantage. From a long-term perspective, the precautionary stance taken by the government is laudable, as pressures arising from population growth and commercialization could lead to a rapid depletion of forests and overall environmental degradation. However, as noted above, there is still a vast potential for increasing timber extraction, without compromising the concern for sustainability.

Apart from timber products, Bhutan also has a range of non-timber products such as lemon grass oil, Matsutake mushrooms and Cordyceps Senesis that can be developed into the kind of low-volume, high-value exports that Bhutan aspires for.

For the sake of both meeting subsistence needs and earning badly needed foreign currency, it is imperative to move from passive conservation to more active and sustainable utilization of forest resources. Bhutan must transform its natural comparative advantage in forest resources into competitive advantage in order to boost growth, generate employment and diversify exports.

CHAPTER 10

WATER RESOURCES AND HYDROPOWER

10.1 Water Resources and the Bhutanese Economy

Bhutan is endowed with abundant water resources with a potential for multiple uses. The Royal Government of Bhutan recognizes this as one of the main resources required for fulfilling Bhutan's objective of socio-economic development based on increasing agricultural self-sufficiency, harnessing hydropower potential and industrial development. This chapter examines the importance of water resources for the Bhutanese economy and hydropower development.

Section 10.1 establishes the size and use of water resources and its importance for agriculture, industry and hydropower generation. The sequence of hydropower development, its cost and financing, domestic and export tariffs, and the trends in consumption and export of electricity are covered in Section 10.2. Section 10.3 looks at the policies regarding domestic use of electricity and their impact as well as the link between power consumption and poverty. Section 10.4 examines the macroeconomic impact of hydropower development through its contribution to GDP and employment generation, its impact on public revenue, expenditure and debt and on the trade balance. The potential and constraints for the further development of hydropower in Bhutan are discussed in Section 10.5, and the main conclusions are summarized in Section 10.6.

10.1.1 Size and Use of Water Resources

The Water Resources Management Plan (WRMP) 2004, which updates the 1993 Power System Master Plan, estimated the average flow draining the country to be 2325 m³/s (Norconsult 2004). This puts the mean per capita availability of water per annum at 109,000 m³, the highest in the region. Bhutan's water resources are sustained by a forest cover of around 72 percent of the total

surface area, snow and glaciers (which form another 7.5 percent), and the bountiful precipitation on its mountainous topography brought by the monsoon (MOA 1997).

Bhutan's four major river basin systems (Drangme Chhu, Punatsang Chhu, Wang Chhu and Amo Chhu) have their sources in the alpine zone and flow north to south to join the Brahmaputra in India. Bhutan's water resources are of pristine quality, except for localized pollution problems near urban and rural habitation.

Three sources of water and their use have been identified by the WRMP 2004. The main rivers provide water for hydropower generation, waste assimilation, tourism, recreation and ecology, with only exceptional use for irrigation (Paro Chhu). Tributaries and streams are the main source for most water users, with headwater streams used for irrigation and water supply. Subsurface sources in the form of springs and aquifers provide water for domestic water supply and small-scale irrigation.

Agriculture accounts for around 90 percent of consumptive water demand, which is mostly through traditional irrigation conveyance systems that are small, gravity-based with few properly engineered headworks and feeder canals. Industrial demand is currently less than 1 percent and municipal, rural and livestock demands make up the remaining 9 percent of the total consumptive water demand in Bhutan. Although not comparable due to its non-consumptive use, hydropower production uses an overwhelming amount of water relative to the other sectors and this is expected to increase to about 97 percent within the next ten years (Norconsult 2004).

10.1.2 Importance of Water Resources for the Bhutanese Economy

Bhutan's economy is based on its water resources, whose continued availability is crucial for agricultural production, hydropower generation and industrial development, in addition to domestic uses.

Water is indispensable for agriculture, the predominant sector in the Bhutanese economy, which provides a livelihood for around 75 percent of the labour force. Irrigation is largely limited to land that is terraced and supplied by an irrigation canal (wetland) and accounts for around only 14.5 percent of total agricultural land. Wetland is mainly used for paddy cultivation and occasionally for relay crops such as wheat and oilseeds. The largest category of agricultural land, dryland (48.4 percent), is largely used for maize cultivation and is dependent on the monsoons (MOA 2005a).

Although agriculture continues to account for the largest share of GDP, hydropower is the engine of Bhutan's small economy. The average annual GDP growth rate of almost 7 percent since 1985 has been largely propelled by the construction and commissioning of the 336 MW Chhukha hydropower plant. Electricity export to India is Bhutan's main export, accounting for almost 38 percent of total national revenue in 2004. In addition to boosting GDP growth directly through the construction of hydropower plants and power exports, hydropower development has also facilitated the establishment of several energy-intensive industries such as cement, ferro alloys, and calcium carbide.

In Bhutan, the main source of energy for heating, cooking and lighting in rural areas continues to be fuelwood, accounting for 70 percent of the total energy consumption (RGOB 2002b). The annual per capita consumption of fuelwood at 1.2 tonnes is one of the highest consumption rates

in the world (WEC 2001). It is the policy of the Royal Government of Bhutan to replace fuelwood as the principle energy source with hydropower so as to raise the living standards of its people and conserve the environment at the same time.

Given the importance of water resources for Bhutan, the Bhutan Water Partnership was established in August 2001 to strengthen functional linkages at policy, planning and programming levels among water user institutions. It is also the focal body to the South Asia Technical Advisory Committee and the South Asian Network of the Global Water Partnership. The Bhutan Water Act, Bhutan Water Policy and the Water Resources Management Plan have been drafted and the next step is the possible establishment of a Ministry of Energy and Water Resources.

10.2 Development of the Hydropower Sector

Bhutan's mountainous topography and its four fast flowing major rivers that descend from altitudes of over 7000 metres above sea level have endowed Bhutan with an estimated hydropower potential of 23,500 MW with a mean annual energy production capability of 99,200 GWh. The Power System Master Plan 1993 identified 78 potential run-of-river sites in Bhutan for hydropower development with a capacity above 10 MW and estimated that if 25 out of 78 sites are developed, 16,435.8 MW of electricity can be generated (Norconsult 2004).

10.2.1 A Brief History

Bhutan's hydropower development started with the commissioning of the first hydropower plant in 1967 in Thimphu with an installed capacity of 360 kW. Since then, 26 hydropower plants of varying sizes have been constructed (Table 10.1).

Table 10.1 Hydropower Plants in Bhutan

	Year(s) of Commissioning	Installed Capacity (MW)	Energy Generated in 2004 (Million Units)
<i>Existing hydropower plants</i>			
Small/mini/micro (23 Nos.)	1967–2001	7.35	37.846
Chhukha Project	1986–1988	336.00	1927.584
Kurichhu Project	2002	60.00	345.361
Basochhu Stage I	2002	24.00	181.493
Basochhu Stage II	2005	40.00	-
Total in 2004		467.35	2492.284
<i>Under construction</i>			
Tala	2006	1020	3,962*
Chendebji	2006	0.070	-
Total by end of 9th FYP		1487.42	

* Estimated generation based on a 90 percent annual dependable flow.

Source: Department of Energy, 2005.

The first major hydropower project, the 336 MW Chhukha hydropower plant, built by the Government of India on a turnkey basis, was fully commissioned in 1988 followed by the 60 MW Kurichhu Hydropower Project in Eastern Bhutan. It was started in 1992 and fully commissioned in 2002. The third major hydropower project, Basochhu, developed in two phases, was fully commissioned in 2005 with an installed capacity of 62 MW. The construction of the largest hydropower project to date, Tala with an installed capacity of 1020 MW, broke ground in 1993 and is scheduled for completion in March 2006.

A demonstration hydropower project under the Clean Development Mechanism (CDM) is also under construction with assistance from the E7 Fund for Sustainable Energy Development at Chendebji in central Bhutan. The 70 kW micro hydropower plant is due for completion in early 2006. Besides the energy goals, the project will test the principles of CDM (in particular, small-scale CDM) under the Kyoto Protocol of the United Nations Framework Convention on Climate Change, to which Bhutan is party. This micro hydropower project in Chendebji village in Trongsa dzongkhag seeks to apply the CDM strategy of reducing the amount of greenhouse gas emission by substituting electricity from diesel generators with hydropower. Bhutan will be paid Euros 10 per kWh by the E7 Fund for every unit of energy generated by this CDM plant. Apart from the major power plants, 23 small, micro and mini hydropower plants of less than 20 MW have been constructed around the country since 1967 with a total of 7.35 MW.

Bhutan has so far developed only 467.35 MW or 1.98 percent of its estimated identified hydropower potential by building 27 hydropower plants of various sizes. As can be seen from Table 10.1, this is scheduled to change dramatically with the commissioning of the Tala Hydropower Project (targeted for completion by 2006). With an installed capacity of 1020 MW, the Tala Project will more than treble the country's current installed capacity and increase firm annual generation by around 1500 GWh (Norconsult 2004).

Although six potential storage dam schemes have been identified, Bhutan has instead opted to tap its hydropower potential through the development of run-of-river plants so as to minimize the impact on the environment. However, run-of-river hydropower plants are dependent on the flow of water, resulting in large seasonal variations. While almost maximum installed generation capacity is attained between the months of April and October, during the winter months available capacity is barely sufficient for Bhutan's own needs. The installed capacity and generation of the major hydropower plants are shown in Table 10.2.

Table 10.2 Capacities and Generation of Major Hydropower Plants

	Chhukha	Kurichhu	Basochhu I	Basochhu II	Tala
Installed capacity (MW)	336	60	24	40	1202
Firm capacity (MW)	67	24	5	10	168
Mean annual generation (GWh)	1850	400	106	186	4865
of which :					
Firm energy (GWh)	587	210	44	88	1472
Seasonal energy (GWh)	1263	190	62	98	3393

Source: Norconsult (2004).

In line with the Electricity Act 2001, the Department of Power (under the Ministry of Trade and Industry) was restructured in July 2002 into the Department of Energy (DOE), the Bhutan Electricity Authority (BEA) and the Bhutan Power Corporation (BPC). The DOE is responsible for policy and planning, the BEA for the regulation of the energy sector, and the BPC, which is a public-owned utility service company, is responsible for transmission, distribution and supply of electricity within the Kingdom.

The management of the three major hydropower plants is run by the Chhukha Hydropower Corporation, Kurichhu Hydropower Corporation and the Basochhu Hydropower Corporation. These Corporations are responsible for the operation, maintenance and sale of electricity from their respective plants. The construction of the Tala plant is managed by the Tala Hydropower Authority.

10.2.2 Cost and Financing

As with most aspects of Bhutan's planned development, India has been associated with the development of Bhutan's hydropower potential since the commissioning of the first 360 kW hydropower plant in 1967 in Thimphu. Apart from the large hydropower projects, India has also helped Bhutan construct eight small and mini hydropower plants.⁷³

Indian assistance for the construction of the major hydropower plants has been based on a 60 percent grant and 40 percent loan financing model. While based on the same financing scheme, the hydropower-related rupee-denominated loans have varying terms. Chhukha received the best terms and conditions with an interest rate of 5 percent per annum and a repayment term of 24 years. Kurichhu carries the highest interest rate of 10.75 percent and a repayment period of 12 years. The Tala loan has an interest rate of 9 percent and 12 years for repayment. The grace period, which is up to the time of commissioning of the project, is the same for all the three loans. Table 10.3 shows the cost and financing of the major hydropower plants.

Table 10.3 Cost and Financing of Major Hydropower Projects

Name of Hydropower Project	Capacity (MW)	Start of construction	Commission Year	Total cost (Nu. million) *	Source of Finance
Chhukha	336	1978	1988	2815.5	India
Kurichhu	60	1994	2002	6675.5	India
Basochhu I	24	1997	2001	1440.8	Austria
Basochhu II	60	2004	2005	1446	Austria
Tala	1020	1997	2006	43,450**	India
Total	1500			55,827.8	

* Capital plus interest during construction, ** Estimated

Source: Department of Energy, 2005.

⁷³ According to DOE classification, power plants with an installed capacity of more than 20 MW are large, 1-20 MW are small, 100 kW-1 MW are mini and plants with less than 100 kW are micro hydropower plants.

Apart from the Government of India; Austria, Japan and the Netherlands have also become involved in the development of Bhutan's hydropower potential. The two-stage Basochhu Hydropower Project—the biggest project assistance undertaken by Austria with a third country—was fully commissioned in 2005. The first phase of the project was developed under a special arrangement whereby the government of Bhutan only has to repay the principal. The total loan for Basochhu I was Euro 17.151 million, to be repaid in equal instalments over 30 years. The loan for the second phase was Euro 31.249 million. This has slightly harder terms and conditions with an interest rate of 2.8 percent and a repayment period of 15 years, a commitment fee of 0.15 percent and a management fee of 0.25 percent of the total loan, payable in four instalments.

The Government of Japan provided assistance from 1986 to 1993 for the construction of 13 mini and micro hydroelectric plants ranging from 70 kW to 200 kW. Dutch assistance was received for the construction of the 200 kW Rongchhu hydropower plant in Lhuentse, which was commissioned in 2001.

Since 1997, Bhutan has also received external assistance for the power sector for rural electrification from the Netherlands through the Sustainable Development Agreement, from the Asian Development Bank, from the Austrian Cooperation Bureau and from the Japan International Cooperation Agency.

Hydropower export earnings are channelled to the government via surplus transfers, corporate taxes and dividend payments. All investments in the power sector are recorded outside the government budget.

10.2.3 Pricing Policy

Domestic tariff

According to the Electricity Act of 2001—keeping in mind the social obligations of assistance to the underprivileged and regional development—the power tariff in Bhutan will be regulated to promote efficient use of energy. The power tariff policy of Bhutan is to gradually increase the tariff to the economic cost while maintaining provisions for poverty alleviation.

After the commissioning of Chhukha, the tariff for rural consumers was reduced from the average tariff of Nu. 0.86 per unit (kWh) in 1982 to Nu. 0.40 per unit in 1987.⁷⁴ This was raised to Nu. 0.50 in 1995 and currently, the tariff for low voltage consumers (the rural consumer classification was discontinued from 2003) is Nu. 0.60 per unit. While this represents an increase of 20 percent in nominal terms (18 percent when adjusted for inflation), it is still lower than the tariff in 1982. On the other hand, while the current average domestic power tariff is Nu. 0.92 per unit, the actual cost of providing electricity to domestic consumers is Nu. 4 per unit (MOTI 2005). Hence, although the electricity tariff has been revised eight times since 1982, power consumption in Bhutan is still heavily subsidized. This holds true even when compared to power tariffs in the region, as shown in Table 10.4.

⁷⁴ Prior to 1987, rural power tariff varied with location.

Table 10.4 Comparative Power Tariffs
(US cents/kWh)

	Domestic	Commerce	Industry
Bhutan	2.0	2.1	2.0
India	3.3	8.0	7.8
Nepal	9.7	8.8	7.7
Bangladesh	5.8	8.5	6.1

Source: Audinet (2002), Karmacharya (2002).

The most significant revision occurred in January 2003 and replaced the previous flat rate system with a progressive charge with different rates for domestic use, small and large industries (see Box 10.1). This was followed by the most recent revision in July 2004, which, while maintaining the tariff at Nu. 0.60 per unit for those who consume less than 80 kWh per month increased the rate from Nu. 0.90 per unit in 2003 to Nu. 0.95 a unit for those who consume between 80 units and 200 units a month. The tariff for consumers in the third low voltage block was increased the most from Nu. 1.00 per unit to Nu. 1.20 per unit, which represents a nominal increase of 20 percent or around 14 percent when adjusted for inflation.

Box 10.1. Domestic Power Tariff Revisions since 2000

Effective from January 2000

Rural consumers: Nu. 0.50 per unit

Other categories: Nu. 0.70 per unit

Effective from July 2001

Rural consumers: Nu. 0.50 per unit

Other categories: Nu. 0.80 per unit

Effective from January 2003

Low voltage consumers: Nu. 0.60 per unit for less than 80 kWh per month

Nu. 0.90 per unit for 81–200 kWh per month

Nu. 1.00 per unit for more than 201 kWh per month

Medium voltage consumers: Nu. 0.95 per unit

High voltage: Nu. 0.90 per unit

Effective from July 2004

Low voltage consumers: Nu. 0.60 per unit for less than 80 kWh per month

Nu. 0.95 per unit for 81–200 kWh per month

Nu. 1.20 per unit for more than 201 kWh per month

Medium voltage consumers: Nu. 0.95 per unit plus capacity charge of Nu. 54,000 per MW per month

High voltage: Nu. 0.90 per unit plus capacity charge of Nu. 54,000 per MW per month

Source: Department of Energy.

At Nu. 0.90 or US cents 2.0 per kWh, industrial consumers in particular benefit from these low rates due to the large quantities drawn by this category. Although the tariff for the medium and the high voltage users has not been increased, the Bhutan Power Corporation (BPC) has introduced a demand charge of Nu. 54,000 per MW per month besides the regular energy charges so as to improve efficiency. Thus, industrial users have to pay for the units of energy consumed as well as for capacity demand.

The largest subsidy per unit consumed, however, goes to rural and urban households as a result of the high transmission and distribution costs associated with supply to these consumers.⁷⁵ The rationale for cheap power rests on the arguments of environmental protection by decreasing firewood consumption as well as improving the living standards of the population. Low industrial tariffs are explained as being necessary for ensuring industrial competitiveness.

BPC purchases energy from Chhukha at Nu. 0.30 and from Basochhu at Nu. 0.50 per unit. Basochhu also sells its energy to Chhukha at a tariff of Nu. 1.50 a unit, which is fed to the domestic industries in the southern belt. Electricity from Chhukha is wheeled through India to supply points in central and eastern Bhutan and a wheeling charge of Nu. 0.05 per kWh is levied by India for energy supplied at 66 kV and above and Nu. 0.20 per kWh for supplies at 33 kV and 11 kV.

Export tariff

Prior to the construction of every export-oriented hydropower plant, a power purchase agreement (PPA), which states the export tariff of electricity, is negotiated with India, currently the only market for Bhutanese hydropower exports. Revision of this tariff is negotiated at the political level.

The tariff for electricity exports from Chhukha has undergone six revisions since the export price was fixed at Nu. 0.19 per kWh in 1988. It was revised to Nu. 0.27 in 1990, Nu. 0.37 in 1993, Nu. 0.50 in 1995, Nu. 1 in 1997, Nu. 50 in 1999 and to Nu. 2 per kWh in January 2005. The latest increase in the export price of Nu. 0.50 represents an increase of 33.33 percent. When compared to the base year (1988), the nominal electricity export tariff (EET) has increased by around 950 percent (Table 10.5).

Table 10.5 Increase in the Electricity Export Tariff (EET)
(Base year: 1988)

	1988	1990	1993	1995	1997	1999	2005**
EET per kWh in Chhetrums	19	27	37	50	100	150	200
Nominal increase in EET (%)		42.1	37	35.13	100	50	33.33
Real EET per kWh in Chhetrums*	19	22.37	20.91	24.66	42.03	52.95	59.94
Real increase in EET (%)		17.7	-6.5	17.9	70.4	26.0	13.2
Cumulative change in real EET (%)		17.7	10.1	29.8	121.2	178.7	215.5

* Since CPI series are on a July year ending basis, EET revisions are assumed to take effect from the closest July

** The CPI is calculated on quarterly basis from 2004. A forecast is made assuming an inflation rate 5 percent.

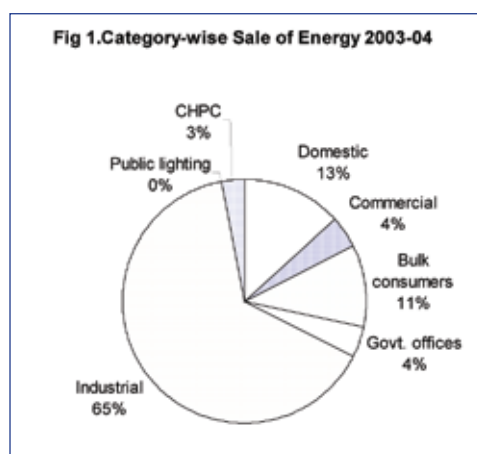
⁷⁵ About Nu. 100,000 is spent for electrifying one household (MOTI 2005).

After adjusting for inflation, EET has increased in real terms. The highest increase in EET was in 1995 when there was an upward revision of 100 percent in nominal terms and 70.4 percent in real terms. Until the latest revision, real EET rose by 179 percent since 1988. The latest revision would take this figure to roughly 215 percent, although the latest figures cannot strictly be compared with the earlier ones because of recent changes in the methodology of constructing the CPI.

10.2.4 Trends in Domestic Consumption and Export of Electricity

Internal consumption of electricity is categorized into domestic, commercial, industrial, bulk, government, public lighting and consumption by Chhukha Hydropower Corporation. As shown in Figure 10.1, industrial consumers accounted for the around 65 percent of total domestic consumption in 2003/04.

Fig 10.1. Category-wise Sale of Energy 2003-2004



Source: MOTI (2005).

Since its commissioning, Chhukha continues to export over 90 percent of its power generation and the remaining is supplied to seven western and south-western dzongkhags. Chhukha dzongkhag, which has the maximum number of power-intensive industries, accounts for 70 percent of domestic consumption. Kurichhu exports over 80 percent of its generation to India and the remaining power is supplied to the eastern and central parts of Bhutan. The value of electricity exports to India increased from Nu. 41.96 million in 1986/87 to Nu. 230.66 million in 2003/04 and the total energy sales increased from Nu. 236.37 million in 1998/99 to Nu. 538.99 million in 2003/04 (MOTI 2005).

As can be seen from Table 10.6, against the total installed capacity of 445 MW, the domestic peak power demand was 112 MW in 2003/04. Out of the total generation of 2528 GWh in 2003/04, only 580 GWh or around 23 percent was consumed internally. In the same year, 72 percent (1844 GWh) was exported to India. However, electricity is also imported from India for areas that are not connected to the distribution system and to tide over shortages in the dry season. During 2003/04, for example, 18,720 GWh of electricity was imported from India.

Table 10.6 Electricity Generation, Consumption, Exports and Imports

	1996/97	1999/2000	2001/02	2002/03	2003/04
Installed capacity (MW)*7	356.7	360.8	430.1	445.3	445.3
Domestic peak demand (MW)	77.0	92.0	92.0	105.0	112.0
Generation (GWh/year)	1876.7	1877.2	2059.5	2200.5	2528.7
Exports (GWh/year)	1357.2	1380.2	1500.1	1560.9	1844.5
As % of generation	72.3	73.5	72.8	70.9	72.3
Internal consumption (GWh/year)	381.4	402.0	510.5	571.3	580.2
As % of generation	20.3	21.4	24.7	25.9	22.94
Imports (GWh/year)	7.5	9.9	6.9	24.3	18.7

*Including hydropower, diesel and solar

Source: Power Data, various years, Department of Energy.

Although currently India is the only market for Bhutanese hydropower, the risks of reduced demand from India is very small. Northern India faces chronic power shortages and the estimated shortage of roughly 10,000 MW is projected to rise to 20,800 MW by 2010 (WEC 2001). At present, Bhutan supplies less than 0.5 percent of India's demand and according to the Bhutan Power Sector Master Plan, India can presumably absorb all the hydropower that Bhutan can develop over the next 20 years.

The Water Resources Master Plan 2004 forecasts the domestic power demand until 2022 based on two scenarios; the base-case forecast and forecast for the planning of the transmission system (Norconsult 2004). The difference between the two is that the latter forecast covers new loads proposed by new industrial estates and load increases for the existing major industries in addition to loads projected in the base-case forecast.

It can be seen from Table 10.7 that total domestic demand is growing by 5.7 percent and the total energy requirement, which includes losses, is projected to reach 1793 GWh by 2022, with a corresponding peak demand of 352 MW. On the other hand, Bhutan's total installed capacity is currently 467.35 MW (Table 10.1) which is already around 32 percent of the estimated base-case peak demand of 352 MW in 2022. With the commissioning of Tala in March 2006, the installed capacity will reach around 1487 MW or 177 percent more than the projected transmission line planning peak demand of 536 MW in 2022 which takes into account the establishment of new industries. Hence, Bhutan's hydropower resource base is far greater than its foreseeable domestic requirement, indicating that there is significant scope for exports without compromising likely domestic requirements.

Table 10.7 Projected Domestic Energy Demand 2005-2020

	Category	2005	2010	2015	2020	Annual Rate (%)	Growth
<i>Base-case forecast</i>							
Energy consumption (GWh)	Domestic	88	141	202	272	7.60	
	Industrial	487	584	779	988	4.69	
	Commercial	30	46	67	95	7.88	
	Public	29	43	63	91	7.92	
	<i>Total</i>	<i>615</i>	<i>813</i>	<i>1110</i>	<i>1447</i>	<i>5.72</i>	
Loss (GWh)		75	134	179	193	6.27	
Energy requirement (GWh)		690	947	1289	1640	5.78	
Peak load (MW)		129	191	252	323	6.08	
<i>Forecast for Transmission line planning</i>							
Peak load (MW)		136	328	413	476	8.40	

Source: Norconsult (2004).

However, the Master Plan cautions that if no new hydropower plants are developed after Tala, the peak power supply capacity will fall short of the projected peak power requirements. This is especially true for the power system in eastern Bhutan which is only supplied by Kurichhu with an effective output of 45 MW. The Master Plan estimates that the peak demand in this system will be more than the maximum output of the Kurichhu power station before 2010, and energy imports from India will be necessary to cover the shortfall.

10.3 Domestic Consumption of Electricity

10.3.1 Policies Regarding Domestic Use and their Impact

As noted earlier, the main source of energy in rural areas continues to be fuelwood, which the Ninth Five Year Plan estimated accounts for 70 percent of the national energy consumption. Access to electricity is a key component of the government's poverty eradication and sustainable development strategy and critical for the achievement of the Millennium Development Goals. The availability of electricity is a stimulus for the extension and creation of rural craft, industry and trade. Furthermore, the supply of electricity to lower income households is expected to enhance their income-earning potential.

While hydropower export revenues enable the government to continue its people-centred approach to socio-economic development, the government also seeks to raise the living standards of its people and, at the same time, reduce the consumption of fuelwood by extending the rural electrification network. The importance given to rural electrification is evident from the substantial subsidized energy tariffs discussed above. The Ninth Five Year Plan sets a target of connecting 15,000 new rural consumers during the plan period (2002-2007). These connections are in addition to the urban connections that are part of the normal extension programme. The aim is to reach full country

coverage by 2020 (RGOB 2000b). According to the Department of Energy, as of June 2004 48,027 households were electrified; 43,841 households were electrified from the national grid, 1721 households from the micro hydropower plants, 129 households from diesel powered plants and generators and 2336 households from solar energy. The number of electrified households increased to 51,017, or 47.7 percent of the total number of households, by May 2005.⁷⁶

Rural electrification is constrained by the difficult terrain and the scattered nature of habitation, and also because electrification solely through the grid extension is very expensive. The other options are to set up micro or mini hydropower projects, solar and wind energy and biomass resources. Furthermore, as about 30 percent of all unelectrified households are in protected areas, measures to avoid adverse environmental impacts also need to be put in place while electrifying these households (ADC undated).

As regards environmental impact, apart from the clearing of a right of way for safety, protection of transmission lines and maintenance, the installation of distribution lines, in general, does not cause major environmental destruction. Construction of distribution lines through protected areas is avoided whenever possible. In order to mitigate adverse environmental impact, covered conductors, which reduce the area to be felled for the right of way, are used for grid extension in protected areas. Vegetation management is also carried out in the vicinity of power lines to avoid complete clearing for the right of way. Although grid extension provides most reliable electrification, alternative renewable energy sources, such as solar power, are being developed so as to avoid damage to protected areas.

The Environmental Assessment Act 2000 requires an environmental clearance from the National Environmental Commission (NEC) Secretariat prior to the implementation of a new project—clearance is applicable for rural electrification projects as well. Furthermore, the NEC adopted the Regulation on Strategic Environmental Assessment in April 2002 to ensure that environmental concerns are fully taken into account by all governmental agencies while formulating, renewing, modifying or implementing any policy, plan or programme, including national Five Year Plans. The Environmental Assessment Sectoral Guidelines was revised in 2003 to incorporate environmental protection parameters into the project cycle, particularly at the early planning stage, and includes the Sectoral Guidelines for Transmission and Distribution Lines (Biodiversity Action Plan 2002).

Rural electrification is also constrained by the lack of funds. At the present cost of Nu. 100,000 per household, the DOE estimates that Nu. 1500 million is needed to achieve the goal of electrifying 15,000 households by the end of the Ninth Five Year Plan. Rural electrification will be undertaken in phases, and funds for the current fourth phase have been made available by Austria (Nu. 77 million) and the Netherlands, through the Sustainable Development Secretariat (Nu. 301 million). The RGOB has also secured a direct equity of US\$3.6 million and a soft loan of USD 9.4 million from the ADB with an interest of 1.5 percent per annum for the electrification of 12,000 households.

Affordable power is a comparative advantage for the Bhutanese industry and the RGOB has prioritized the development of power-intensive industries. The growth of the manufacturing sector was propelled by the commissioning of Chhukha with the establishment of large industries

⁷⁶ The total number of households is taken as 106,900 as given in NSB (2004b).

such as the Penden Cement Authority Limited (PCAL), Bhutan Ferro Alloys Limited (BFAL), Bhutan Carbide and Chemicals Limited (BCCL) and many other smaller plants. While these industries do contribute to revenue and employment generation, the establishment of industries based solely on subsidized industrial power tariff needs to be reviewed.

The current pricing system implies a considerable subsidy to all consumers, particularly the industrial users who account for about 65 percent of domestic electricity consumption. A cost-benefit analysis on the sale of electricity to the manufacturing sector conducted by the Policy and Planning Division of the Ministry of Trade and Industry in 2004 found that the viability of BFAL is solely based on the power subsidy. In 2002, around 328 million units of electricity was sold to BFAL, PCAL and BCCL at the then tariff rate of Nu. 0.80 per unit, representing an opportunity cost of Nu. 0.70 as this could have been exported to India at Nu. 1.50 per unit, amounting to Nu. 264.6 million. On the other hand, these three companies contributed Nu. 161.3 million in the same year as corporate tax, amounting to a net loss in revenue of over Nu. 100 million as a direct result of the power subsidy.

While the study found that the establishment of these industries has broadened the industrial base and contributed substantially to government revenue (through direct and indirect taxes, dividends and profit) and employment generation, the Royal Government of Bhutan should not promote industries that are not viable without the power subsidy. New industries should be based on their potential for employment generation, import substitution, use and value addition to local raw materials and their potential for establishing backward and forward linkages.

On the other hand, since energy consumed locally has an opportunity cost equivalent to the export price, the domestic tariff should also be at a level that reflects the export price plus the costs of transmission and distribution. Increasing the tariff will improve economic efficiency and mobilize additional revenue for domestic programmes. In 1995, when the tariff was Nu. 0.5/kWh, it was estimated that a 50 percent reduction in the subsidy to households and industrial consumers could raise revenues by Nu. 100 million or 1 percent of GDP (World Bank 1996). The introduction of a capacity charge of Nu. 54,000 per MW per month for medium and high voltage consumers will increase efficient use of energy.

10.3.2 Link between Power Consumption and Poverty

As balanced regional development and preservation of the environment are part of the long term goals of the RGOB, rural electrification is identified by the Ninth Five Year Plan as a vital tool for improving the quality of life, addressing poverty alleviation and preserving the environment.

While the results of the ongoing impact study on rural electrification are not yet available,⁷⁷ it is evident that the efficient provision of energy is central to the basic human needs of nutrition, health and education and contributes indirectly—through economic growth—to poverty reduction. Rural electrification is linked to rural economic development through increased productivity (purchases of electrical appliances and equipment and establishment of off-farm enterprises), improvement

⁷⁷ *The Impact Study on Rural Electrification is being conducted in three phases over a period of five years and the result will be available towards the end of the Ninth Five Year Plan.*

in the health of the rural population as a result of reduced use of fuelwood and improvement in the quality of life through the availability of more time. The productive use of electricity is expected to increase employment opportunities and reduce rural-to-urban migration.

Electricity supply to social services, such as schools and hospitals, and to cultural institutions, such as monasteries and temples, improves the standards and performance of these institutions, which in turn impacts the overall living standard and well-being of the population (Santer 2004). Electricity used for lighting also brings new possibilities for education, a critical element for breaking the poverty cycle.

The Village Baseline Survey for Rural Electrification conducted for the Integrated Master Plan Study for Dzongkhag-Wise Electrification 2005 (also called the Rural Electrification Master Plan) compared the living standards of electrified and non-electrified villages and found that non-electrified villages had limited access to means of livelihood, with average agricultural landholdings being 50 percent less than those of electrified villages (MOTI 2005). The average annual household income of the non-electrified households (Nu. 28,481) was about 65 percent of that earned by households in electrified villages (Nu. 43,942).

The survey also found that non-electrified villages had low access to social services compared with electrified villages—with most public facilities being located in the gewog and dzongkhag centres. Commercial facilities are also limited in distant villages, and non-electrified villages were generally found to have low access as they were located around six hours walking distance from a motor road.

The Rural Electrification Master Plan estimated the poverty impact ratio, which is derived by dividing the total net benefits accruing to the poor by the total economic benefits generated by the rural electrification programme. The ratio was found to be 54 percent, implying that the poor receive 54 percent of the net benefits created by the project (MOTI 2005).

In the provision of electricity, it should also be noted that the cost of using electricity arises not only from monthly tariff, but also from the initial connection costs. The average connection cost in Bhutan is estimated at Nu. 3145 per household, which is equivalent to around one month's income for low income families and therefore prohibitive for many households (especially when households living in absolute poverty are unable to even afford the necessary wiring and maintenance costs).

The ADB-funded rural electrification programme (third phase) includes free connections for low income families (MOTI 2005). As of May 2005, the number of households without electricity stood at 55,883 or 52.3 percent of total households. Firewood, kerosene and dry cell batteries are the most popular choices of energy for households without electricity (MOTI 2005).

10.4 Macroeconomic Impact of Hydropower Development

10.4.1 Contribution to GDP and Employment

While agriculture continues to account for the largest share of GDP, since hydropower development

started, electricity has been the driving force in the Bhutanese economy. The output of the hydropower sector increased from Nu. 2.5 million in 1980 to Nu. 229 million in 1987, the year when Chhukha came on-line. Its share to GDP in constant prices shot up from 0.2 percent to 11.6 percent over the same period and has remained in the range of 8-11 percent thereafter.

The direct impact of hydropower development on GDP comes from the increasing power exports, as well as from the growth of the construction sector (through the works related to the newly completed medium-sized hydropower schemes and the ongoing construction of Tala). As a result, the average annual growth rate of GDP of almost 7 percent since 1985 has been propelled by the development of the hydropower sector.

Hydropower development also boosted GDP growth indirectly by facilitating the establishment and growth of many large and small industries, especially power-intensive industries. This is brought out by the fact that while there were 188 licensed business establishments (manufacturing, construction and services) in 1982, a total of 173 new firms were established in 1988 alone, when Chhukha was fully commissioned (CSO 1996). If production is considered, the GDP share of the manufacturing sector more than doubled in real terms from 3.2 percent in 1980 to 7 percent in 1990 (NSB 2005).

The direct contribution of hydropower development to employment generation is not very large, with only around 3000 Bhutanese employed in the entire power sector, including the government agencies and power projects. Since data is not available, it can be assumed that direct employment in the construction of the major power plants was not very significant, given the enclave nature of the power sector, the high reservation wages of the Bhutanese and the availability of cheaper Indian labour.

However, the indirect contribution of hydropower development has been very significant for employment generation in Bhutan. As discussed earlier, the growth of the manufacturing sector is directly linked to the commissioning of Chhukha. Although employment data is limited, the Statistical Year Book of Bhutan 1990 shows that less than 1 percent of the population was employed in the private sector as a whole in 1984. This increased to 3.3 percent and 5.9 percent for the manufacturing sector alone in 1998 and 2004, respectively (DOE 2003, 2004).

10.4.2 Impact on Government Budget

The summary of budgetary operations for the period 1981/82-1986/87 in the Sixth Five Year Plan shows that in the financial year 1987/88 following the commissioning of Chhukha, there was a sharp increase in government revenues, and, as a percent of GDP, there was a jump of total domestic revenues from around 11.9 to 21.2 percent of GDP. Although the actual extent of the impact of Chhukha on these revenues is not known, it can be assumed that this growth was the result of the commissioning of the Chhukha hydropower plant.

Over the period leading up to the end of the Eighth Five Year Plan for which actual data is available, the energy sector continued to be a major contributor to government revenues, with

its contribution increasing along with the increases in the export price to India as well as domestic tariff rates. The average share of hydropower revenues to total domestic revenues for the period 1992/93-2001/02 was around 30 percent. Not surprisingly, the growth in hydropower revenues is linked to the revision of the export price of electricity to India. More importantly, there has been a strong correlation between the growth of revenues from the export of hydropower revenues and total domestic revenue performance.

In the first two years of the Ninth Five Year Plan the contribution of hydropower revenues to total domestic revenues was marginally higher at 31 percent. It is expected to rise sharply by Nu. 743 million in 2005/06 with the full impact of the recent electricity export tariff hike of around 33 percent, from Nu. 1.50 per kWh to Nu. 2 per kWh. Consequently, the share of the power sector to total domestic revenues is expected to increase to around 42 percent.

The hydropower sector's contribution to domestic revenues will be further boosted by around Nu. 2.6 billion a year with the commissioning of Tala in 2006 (at a tariff of Nu. 2 per kWh). At the current export price, total revenue from the hydropower sector is projected to account for around 50 percent of total domestic revenues in 2006/07. In absolute terms, the contribution of the hydropower sector to total domestic revenues is expected to more than double following revenue inflows on account of Tala. As a percent of GDP, domestic revenues are projected to grow from around 19 percent in 2005/2006 to around 25 percent in 2007/08, the first year of the Tenth Five Year Plan.

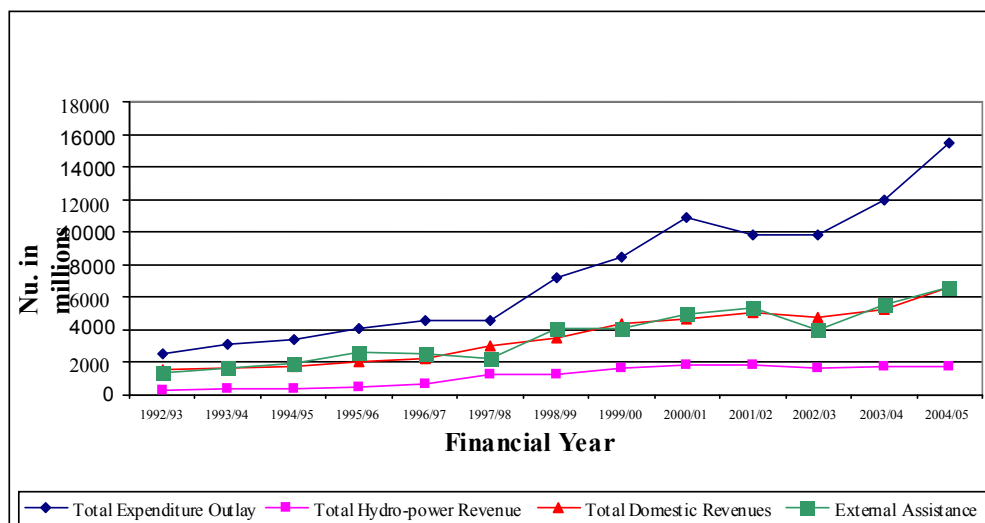
It is thus evident that a significant component of total domestic revenues is constituted by hydropower revenues, as they are a relatively large and stable source of revenues and also the single biggest cause of the large increase in domestic revenues.

Through its huge impact on revenue, hydropower has had a profound impact on the government's ability to enhance the size of public expenditure. In the Fifth Five Year Plan, domestic revenues to total expenditure averaged around 28 percent. This was not very stable as the actual year-to-year figure ranged from a low of 21 percent in 1985/86 to a high of around 37 percent following the commissioning of Chhukha. During the same period, the Royal Government of Bhutan was unable to meet its fiscal objective of current account balance, which averaged around 74 percent and ranged from a low of around 58 percent in 1985/86 to a high of around 81 percent in 1987/88. Therefore, while domestic revenues increased substantially following the commissioning of Chhukha, it was still not sufficient to cover current expenditures, let alone the investments required for Bhutan's further development.

Since then, the picture has improved substantially, largely due to the intermittent increases in export price of electricity. During the last decade (1992-2002), on average, the government was able to achieve its objective of meeting current account expenditures from domestic revenue. The current account balance was 110 percent and total domestic revenues as a percent of the total expenditure outlay averaged around 53 percent, a substantial improvement from the Fifth Five Year Plan level of around 28 percent. On a year-to-year basis, the government was not able to meet this objective in only two years of the period under review, in 1994/95 (when it was around 91 percent) and in 1996/97 (when it was around 99 percent). Again, this largely reflects the fact that, in between the upward revisions of the export tariff of electricity, revenue

growth was not able to keep up with expenditure growth, especially current expenditure growth. The more significant finding, however, is the fact that while domestic revenue, aided largely by hydropower export revenues, has grown rather rapidly, it has not kept up with the development needs of Bhutan, as can be seen in Figure 10.2.

Fig. 10.2 Comparison of Total Expenditure Outlay to Total Export Hydropower Revenues 1992/93-2004/05



Source: Department of Budget and Accounts.

From the above, it is evident that the commissioning of Tala will have a significant impact on total public expenditure and more so if the projects in the pipeline are developed steadily. With the improvement in the current account coverage, the sustainability of investments will be enhanced considerably. As this happens, the lower dependence on external assistance should bring in its own benefits for public expenditure management. In particular, increased flexibility and predictability of resources should translate into better programming and implementation of investment projects. In the short run, however, Bhutan will have to continue to rely considerably on external assistance to finance capital expenditure, even after the commissioning of Tala.

But in the longer run, Bhutan needs to harness more of its hydropower potential if it is to achieve its objective of economic self-reliance. This is not easy given the fact that hydropower development requires substantial financing, which is beyond the scope of grant assistance. Consequently, loans have to be resorted to for hydropower development, with significant implications for public debt.

10.4.3 Impact on Public Debt

As of December 2004, Bhutan's total stock of public debt amounted to around US\$598 million, mostly made up of concessional loans. The Indian rupee loans accounting for 71 percent of the

total stock, were entirely for Chhukha, Kurichhu and the Tala hydropower projects. Out of the total debt stock, the total outstanding convertible currency debt was US\$233 million, of which borrowings related to the only third country financed hydropower project, Basochhu, accounted for around 26 percent.

Given their large size, these loans made a huge impact on the stock of public debt. As of December 2004, Bhutan's total debt outstanding to GDP was around 84 percent, mainly due to large disbursements for the Nu. 43 billion Tala hydropower project. Thus far, only around 39 percent of the total estimated loan component for this project has been disbursed but it already accounts for around 26 percent of total debt.

Among the three large hydropower projects, Kurichhu—which is targeted for meeting domestic demand—poses some potential financial problems as its cost is high when compared to Chhukha. This is due to the large differential in export and domestic price of electricity (Nu. 2 per kWh against a weighted average domestic tariff of Nu. 1.10 per kWh), which is subsidized by the government. In the case of Chhukha, the government received substantial revenues from the first day of the commissioning of the project as the revenues from export of electricity exceeded the debt repayment obligations. In 1986/87, power exports from Chhukha earned Nu. 86.2 million as against the annual loan repayment of Nu. 49.182 million. Power exports further increased to Nu. 374.7 million in 1987/88 when it was fully commissioned. The same scenario is expected for Tala.

Since revenue received from electricity exports are much larger than the annual loan repayments, the impact of hydropower on total debt is, under the present circumstances, mostly statistical as they do not add any net burden to the existing loan repayment obligations. Moreover, there is the added advantage that 71 percent of total loans are denominated in Indian rupees, to which the ngultrum is pegged at par, thus reducing considerably exchange rate and liquidity risks as export revenues are also in Indian Rupees. Consequently, if the present terms and conditions can be negotiated for future hydropower plants, there is little reason for the government to be concerned with additional debt on account of hydropower projects.

As discussed earlier, the Austrian government-assisted Basochhu project is the only hydropower project undertaken with a partner other than India. The electricity from this project will be used for meeting domestic demand. Therefore, due to the low domestic electricity tariff, the projected return from this project is lower than for the projects developed with the Government of India.

Nevertheless, Basochhu is expected to be able to meet its loan servicing obligations and to contribute some revenue to the government exchequer. It is important to note that while this financial outlook is true so far as Basochhu itself is concerned, the actual benefit to its owner, the Government of Bhutan, in terms of revenue is far greater. This is due to the fact that, to the extent Basochhu meets domestic demand, it is actually displacing the domestic supply that used to be met by Chhukha. As a result, the hydropower revenues on account of export of electricity to India by Chhukha will increase to the same extent. Since all the hydropower projects supported by India are accompanied by a power purchase agreement for all surplus power from these projects, and given that there is a

ready and large market in India for the surplus electricity, the real contribution of Basochhu to the Government of Bhutan is much greater than what accrues directly to the project.

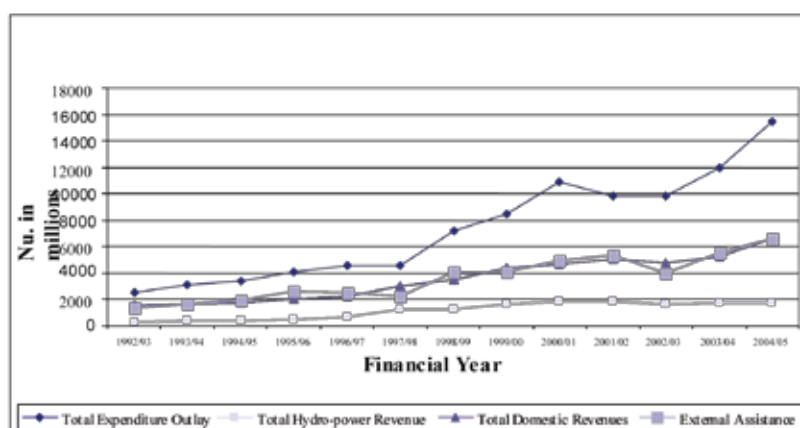
This provides the possibility of developing additional hydropower projects besides those earmarked for Government of India support. Moreover, with the estimated energy shortage of around 100,000 MW for India's Tenth Five Year Plan (WEC 2001), exporting surplus power to India, even beyond the Power Purchase Agreement limits, should be possible. The only caveat to such developments is that the terms and conditions of the financing of such projects should not be markedly different from that obtained for Basochhu so that their benefit is not reduced.

It is important to note that every borrowing, however concessional, is accompanied by risk as they have to be eventually repaid. Therefore, it will be important to ensure that, apart from the proper management of hydropower projects, the arrangements under which these projects are established are rigorous so that the risk of such borrowings are reduced. Given the long close relationship between the Governments of India and Bhutan, and the fact that the hydropower development in Bhutan represents a win-win situation for both India (which continues to face substantial energy shortage) and Bhutan, this appears to be a hypothetical risk. Nonetheless, it is important that it be recognized as containing possible risk.

10.4.4 Impact on the External Sector

Electricity is Bhutan's dominant export, accounting for around 10 percent of GDP. As illustrated in Figure 10.3, the share of electricity in total exports increased with the commissioning of Chhukha (48.5 percent in 1987/88), Kurichhu (48.1 percent in 2002) and Basochhu (49.5 percent in 2003/04). As discussed in Section 10.2, these increases were the result of increases in quantity as well as export tariff.

Figure 10.3 Hydropower Exports (as a percentage of total exports and GDP)



Source: World Bank (2002a) and NSB (2004a).

With the increase in the export of electricity to India, the overall trade balance with India, Bhutan's predominant trading partner, improved from a deficit of Nu. 228.9 million in 1989 to a positive balance of Nu. 558.3 million in 1997. Since then, the trade deficit with India again grew

to Nu. 333.7 million in 2002/03, mainly due to the import of plant and machinery related to the construction of the Tala hydropower plant.⁷⁸ However, according to RMA (2004), the balance of payments with India turned positive to about Nu. 1032.7 million as a result of lower trade deficit (down to 9.5 percent from 11.2 percent for the previous year) and higher inflows of financial aid in the form of concessional hydropower project-related loans from the Government of India.

Bhutan has pinned its hopes on the development of its considerable hydropower resources, for which there exists a vast market in neighbouring India, to propel the growth and development of its small economy. These hopes seem to be coming true, as electricity has become its dominant export, accounting for around 30 percent of total government revenue during the period 1992/93-2001/02. This revenue is expected to increase to around 50 percent with the recent increase in the export electricity tariff and the commissioning of the Tala Hydropower Project in 2006.

However, the increase in hydropower exports were accompanied by significant structural changes in the Bhutanese economy along with the possibility of an appreciation in the real value of the ngultrum against the Indian rupee, thereby eroding Bhutan's export competitiveness with India. Since 2000, concern has been raised as to whether this is a sign of the 'Dutch disease', the phenomenon in which the exploitation of a natural bounty may render the rest of the economy uncompetitive, and whether this has undermined the country's growth prospects by discouraging production and investment in the tradable sector (agriculture and manufacturing).⁷⁹

Although the evidence is not conclusive, the balance of evidence would suggest that Bhutan has so far been able to avoid the 'Dutch disease'. However, the possibility of its emergence always remains, so the authorities will have to remain on guard on this issue.⁸⁰

10.5 Further Development: Potentials and Constraints

10.5.1 Potential

Bhutan's geophysical setting has blessed the country with an estimated identified hydropower potential of 23,500 MW. The Water Resources Management Plan identified 78 potential run-of-river sites in Bhutan for hydropower development with a capacity of above 10 MW and estimated that if 25 out of the 78 sites are developed, 16,435.80 MW of electricity can be generated (Norconsult 2004). Nine screenings were conducted of potential projects based on development and transmission costs, mean river flow, generation capacity, environmental impact and the sequence of development. Based on the screening results, six projects, with an installed capacity of 4389 MW or around 26 percent of the identified potential, have been selected for implementation during the Power Master Plan period (2003-2022). Table 10.8 provides details of these projects.

⁷⁸ According to RMA (2004), Tala imports alone accounted for 18 percent of total imports during the year.

⁷⁹ World Bank (2000) is the first reference that explicitly mentions the 'Dutch disease' in connection with the development of Bhutan's hydropower sector. It identifies a peculiar strain of the 'Dutch disease' brought on by the large inflow of foreign aid and hydropower exports that are large relative to the total economy.

⁸⁰ The issue of 'Dutch disease' in the context of Bhutan is discussed in some detail in Annex 5.

Table 10.8 Selected Potential Major Hydropower Projects

Project	Installed Capacity (MW)	Estimated Investment (US\$ million) ¹	Construction Period
Punatsangchhu I	1002	861	2007–2011
Mangdechhu	670	588	2009–2013
Punatsangchhu II	992	875	2011–2015
Chamkharchhu I	671	547	2014–2019
Chamkharchhu II	568	407	2018–2022
Kholongchhu	486	383	2020–2023
Total	4389	3661	-

¹In 2003 prices, inclusive of transmission lines to India, exclusive of interest during construction.

Source: Norconsult (2004).

Although the Water Resources Master Plan 2004 also identified six storage scheme hydropower plants with a total installed capacity of around 7000 MW, it is the policy of the government of Bhutan to develop run-of-river hydropower plants as such schemes are environmentally benign compared to storage schemes.

The cost of production of hydropower in Bhutan is competitive compared to India, as brought out by a pre-feasibility study conducted in 1993. The study found that market prices for energy in India in 1993 were 10.5 US cents per kWh (peak), 7 cents per kWh (firm), and 3.5 cents per kWh (seasonal), which form the ceiling price for electricity sales from Bhutan. The pre-feasibility study estimated the unit cost of supply of electricity from Bhutan's hydropower plants to be 2.34 cents per kWh.

Although hydropower can be generated at a lower cost than the current market price in India, Bhutan a further comparative advantage in hydropower development as a result of its ability to create an institutional framework that enables export-oriented hydropower projects to be implemented more easily than in India. Hydropower development in Bhutan is subject to fewer delays due to interstate water disputes and rehabilitation controversies. This is true to a lesser extent in relation to Nepal as well, where NGO opposition led to the cancellation of the Arun III project (WEC 2001).

Bhutan's size and political structure is also an advantage. The kingdom is unencumbered by the complex Centre-state relationships that characterize the Indian polity, which gives Bhutan some advantages compared to India and Nepal. However, this may change with the advent of democracy and multi-party politics in Bhutan, which can lead to a fragmentation of the political will, short-sightedness and rent-seeking by interest groups.

Given Bhutan's overall advantages, the government should accelerate the development of its hydropower potential through expanding its funding options and markets for Bhutan's hydropower. Although it would require India's acquiescence, Bangladesh, is a potential market. In this regard, Bhutan must actively participate in efforts, such as the South Asia Regional Initiative for Energy

Cooperation and Development programme (SARI), to develop a regional electricity grid connecting Bhutan, India, Bangladesh, Nepal and Pakistan. A grid will increase efficiencies, rationalize tariffs and reduce power generation and transmission costs.

The progress made in rural electrification must be continued so as to capitalize on its potential for poverty alleviation, employment generation and reduction in rural-to-urban migration. The government should also continue its efforts to develop small, micro and mini hydropower plants to meet domestic needs, especially since Bhutan continues to import electricity from India during winter. Their development will enable the output of the larger hydropower plants to be totally exported, as brought out by the development of Basochhu.

The potential for constructing future small hydropower projects under the Clean Development Mechanism must be pursued as it is tailor-made for Bhutan's strategy of developing its hydropower potential while conserving the environment. With the reforms in the power sector and the ratification and commencement of the Electricity Act, the stage is set for greater private sector participation in all aspects of hydropower development. Given the increasing rate of unemployment, it is imperative that the government encourage participation of independent power producers and operators. Private sector involvement would also result in the selection of the most cost-effective projects, provide additional options for future development of the sector and introduce competition into the process.

A feature of rural power demand in Bhutan is that the peak demand is remarkably high compared with other developing countries because of the use of electricity for cooking even in the rural area (MOTI 2005). In order to depress the peak demand in the morning and evening and level demand fluctuations, the potential of producing hydrogen by electricity in the off-peak hours and storing it for cooking should be studied. This would result in cost reductions and more efficient use of energy.

The potential for installing overhead fibre optic ground wires (OPGW) to connect the transmission networks with the regular switching centre for information and telecommunications also needs to be undertaken so as to increase the use of information communication technology.

10.5.2 Constraints

Although hydropower projects, with an estimated installed capacity of around 16,435 MW have been identified for development, Bhutan faces several constraints in developing even 50 percent of this potential. These include market limitations, financing, environment and the inherent weaknesses of run-of-river plants.

Market limitations

The main constraint facing the development of Bhutan's hydropower potential is the fact that India is the only market for Bhutanese hydropower. This, coupled with the fact that hydropower development in Bhutan is largely financed by India, gives India a strong bargaining advantage in the fixation of power tariffs as well as in the selection of future hydropower plants for development.

Even if future plants are funded by sources other than from India, a power purchase agreement with India will be required.

Financing

Hydropower plants are expensive relative to the economy. As seen in Table 10.8, the implementation of the six selected projects will require a total investment of around US\$3660 million, exclusive of interest during construction, new transmission lines, substations and other necessary reinforcement. This translates into an average annual capital expenditure of US\$183 million. By comparison, the total government capital expenditure, excluding hydropower projects, during the fiscal years 2000-2003 averaged around US\$115 million per year. For the same three years, the government received on an average US\$73 million per year in grants and borrowed around US\$17 million per year from abroad (Norconsult 2004). While India is likely to finance Punatsangchhu I and Mangdechhu, the high levels of investment required for Bhutan to develop the other identified projects imply an increase in funding requirements significantly beyond the present level of the government's sources of finance, whether domestic or foreign.

Increased hydropower development also present challenges and potential problems in absorbing the investments and associated activities into a small economy as well as avoiding the negative effects of structural changes and real exchange rate appreciation associated with the 'Dutch disease.'

While India is likely to assist in the construction of Punatsangchhu I and Mangdechhu, it is uncertain whether it will be willing to finance the other selected projects. Yet, even if it does, given India's own limited financial capacity, it will probably be at a slower pace and or at a lower level of assistance. Hence, while reserving Indian financing for larger hydropower projects, the government should expand its financing options.

Securing international financing will be dependent on the prospects for a return on capital, acceptable levels of risk and the ability to meet the financial requirements of lending agencies. The government should move towards a public-private model of ownership, such as build, operate, own and transfer (BOOT), backed by international lending agencies such as the World Bank, IFC and ADB. A major challenge will be to devise financing packages with debt servicing and maturities that match the long-term revenue profiles of hydropower projects.

Environment

Glacial Lake Outburst Floods (GLOF) are another threat for hydropower plants in Bhutan. According to a report published by the International Centre for Integrated Mountain Development (ICIMOD) and United Nations Environment Program, 24 of the 2674 glacial lakes in Bhutan could potentially burst over, resulting in a GLOF as the glaciers that feed them are reported to be melting because of accelerating global warming. The frequency with which GLOFs are occurring in the Himalayas is rising sharply, with one major event anticipated each year by 2010 (Norconsult 2000). Since the breach of the Luggye Tsho glacial lake in the upper Punatsangchhu basin produced a flood wave that resulted in the loss of more than 20 lives in 1994, the government is identifying potential

hazards, monitoring and assessing potential risks and developing mitigation plans.

Hydropower development in Bhutan also faces two large threats due to physical factors. First, Himalayan rivers carry a huge amount of sediment that can drastically reduce the life span of a dam, and second, the area is generally prone to high seismic activity.

Technical limitations

A self-imposed constraint lies in the choice of the Government of Bhutan to opt for eco-friendly run-of-river schemes as opposed to storage schemes or thermal plants. However, one of the major problems with run-of-river hydropower plants is that there is a wide disparity between the lean and monsoon flows of rivers and hence, these plants typically have an installed capacity based on three or four times the minimum flow in the river. This is a major drawback as this means that Bhutanese hydropower plants are unable to operate at full capacity all the time.

The construction of large hydropower plants is also more technically demanding than thermal plants as each and every plant has to be tailored to the particular hydrological, geological, environmental and social conditions. Hydropower development in the Himalayas is especially difficult as expensive and time-consuming tunnelling is required.

Competition

Although hydropower development in Nepal has been hampered by corruption, environmental opposition, political opposition and instability and bureaucratic hurdles, in the long run, Bhutan will face direct competition from Nepal when the latter's major hydropower projects come on stream. On the other hand, while India is the market for hydropower, it is also a producer of hydroelectricity, and thus Bhutan will also face competition from Indian plants, especially after the power industry reforms in India.⁸¹ India and Nepal also signed an agreement in 2000 to allow any governmental, semi-governmental or private enterprise in Nepal or India to develop hydropower sites and to buy and sell power to each other (Gyawali and Dixit 2000).

10.6 Summary and Conclusions

Bhutan's mountainous topography and its fast flowing four major rivers have endowed the country with an estimated hydropower potential of 23,500 MW with a mean annual energy production capability of 99,200 GWh.

So far only 467.35 MW or 1.98 percent of its estimated identified hydropower potential has been developed. This is due to change dramatically with the commissioning of the Tala Hydropower Project which is targeted for completion by 2006. With an installed capacity of 1020 MW, it will more than treble the country's current installed capacity and increase firm annual generation by around 1500 GWh.

⁸¹ *Out of the hydropower potential of 84,000 MW in India, 74 percent lies in North and North Eastern India (ICHD 2001) and 12 hydropower projects with a combined capacity of 23,071 MW have been identified for development (NHPC 2002).*

The first major hydropower project, the 336 MW Chhukha plant, was fully commissioned in 1988, and was followed by the 60 MW Kurichhu project in Eastern Bhutan. The third major hydropower project, Basochhu, developed in two phases, was fully commissioned in 2005 with an installed capacity of 62 MW. The construction of the largest hydropower project to date, Tala, with an installed capacity of 1020 MW, was started in 1993 and is scheduled, as noted above, for completion in 2006.

Most of the major projects have been developed with Indian assistance based on a 60 percent grant and 40 percent loan financing model. Apart from the Government of India, Austria, Japan and the Netherlands have also been involved in the development of Bhutan's hydropower potential. The Basochhu project, the biggest project undertaken with third-country assistance (Austria), was commissioned in 2005.

Since the commissioning of the Chhukha project in the 1980s, hydropower has emerged as the driving force of the economy. It looms large in almost every aspect of the economy—as a major contributor to GDP, as the single biggest source of government revenue and as, by far, the most important item of export. The contribution of hydropower to the economy of Bhutan has increased over time, not just because of the commissioning of new projects, but also because of periodic revision of export tariff, which has more than doubled in real terms since 1988.

Hydropower has also made it possible to establish a number of power-intensive industries, helped by generous subsidy on electricity tariff. It has also helped sustain a big programme of heavily subsidized rural electrification, whose beneficial impact on the rural poor has been found to be substantial. The only shortcoming of hydropower, from the perspective of poverty reduction, is that it is very capital-intensive (as are the power-intensive industries) and as such do not directly create much employment opportunities for the poor.

Since the revenue received from electricity exports are much larger than annual repayments of loans incurred for hydropower projects, the impact of hydropower on total debt is, under the present circumstances, mostly statistical as they do not add any net burden to the existing loan repayment obligations. Moreover, there is the added advantage that 71 percent of total loans are denominated in Indian rupees, to which the ngultrum is pegged at par, thus reducing considerably any exchange rate and liquidity risks as export revenues are also in Indian rupees.

Bhutan clearly has a comparative advantage in hydropower, as its costs of production are substantially lower than the current market price in India. Bhutan also has the advantage of possessing an institutional framework that enables export-oriented hydropower projects to be implemented more easily than in India, where hydropower development is hampered by interstate water disputes and rehabilitation controversies. This is true to a lesser extent for Nepal as well, where NGO opposition to large hydropower projects has been a serious problem.

Although currently India is the only market for Bhutanese hydropower, the risk of reduced demand from India is very small. Northern India faces chronic power shortages and the estimated shortage of roughly 10,000 MW is projected to rise to 20,800 MW by 2010. At present, Bhutan supplies less

than 0.5 percent of India's demand, which can presumably absorb all the hydropower that Bhutan can develop over the next 20 years.

One potential danger of rapid expansion of hydropower that has been much discussed of late in Bhutan is the possibility of 'Dutch disease', the phenomenon in which the exploitation of a natural bounty may render the rest of the economy uncompetitive. The discussion has not reached any definite conclusions yet, but most analyses show that the danger is possibly small.

In view of the vast unexploited potential for the production of hydropower in Bhutan and an equally vast potential market in India, Bhutan should strengthen its efforts to make even greater use of its water resources. There are constraints too, not least of which is the potential environmental hazard of a glacial lake outburst flood, lurking in the Himalayas as a consequence of global warming. But Bhutan needs its hydropower, not just for short-term gains but also primarily for providing the resources with which the country can build a future based on human skill and technology, in which dependence on natural resources, including water resources, would be greatly diminished.

CHAPTER 11

THE INDUSTRIAL SECTOR: PROSPECTS AND CONSTRAINTS

11.1 Introduction

Bhutan embarked on the path of modernization with the inception of economic development plans in 1961. However, structural transformation from a largely agrarian economy to an industrial one only occurred in the late 1980s with the commissioning of the Chhukha Hydropower Project. Since the Sixth Five Year Plan (1987-1992) the Government has recognized the private sector as the engine of growth. Today, private sector development and industrialization are essential components of the development strategy. Private sector development will help generate employment, diversify the economy and foster successful integration into the global economy.

However, the country faces several challenges in successful industrial development due to its small size, remote location, and various other structural and regulatory constraints, including the lack of skilled labour and technology. The policy of holistic development with emphasis on cultural preservation and environment conservation also compels some trade-offs in the process of industrialization. Due to structural and policy constraints, it is clear that in the long run Bhutan must focus on the development of niche industries that deal in 'high-value low-volume' products and services. These challenges will be examined in this chapter, separately for the manufacturing industry and the tourism industry, each of which has its own problems and prospects.

In this context, this chapter seeks to identify the sectors in which Bhutan has a comparative advantage, which can be successfully used in the transitional period towards the aforementioned long-term goal. First, the trends and structure of the industrial sector will be briefly discussed

with emphasis on the six sectors in which Bhutan has a comparative advantage. Then the chapter assesses the constraints to industrial development arising from economic structure as well as policies and regulations. Finally it discusses the future potential and the recommendations to boost the industrial sector by addressing policy constraints as well as sector specific constraints.

11.2 Overview of the Industrial Sector

11.2.1 Size and Structure

The industrial sector in Bhutan is comprised of the production and manufacturing sector, the services sector and contracts (related to construction sector). Today, there are 14,310 registered establishments, as shown in Table 11.1. It should be noted that the figures shown in this table indicate the number of licences issued and do not necessarily represent the number of industries in operation as present data fails to capture those firms that never began operations and those that have exited. The ownership pattern of the industrial sector in Bhutan, according to licences issued is as shown in Table 11.2.

Table 11.1 The Size of the Industrial Sector

Type	Number of firms in 2003	as %
Production and Manufacturing	730	5
Services	4478	31
Contracts (construction sector)	9102	64
Total	14,310	100

Source: NSB (2005).

Table 11.2 Ownership of Industries

	1998	1999	2000	2001	2002	2003
Private	4813	5678	8959	12,807	13,833	14,230
Joint	5	5	23	24	24	24
Public	33	33	34	47	51	56
Total	4851	5716	9016	12,878	13,908	14,310

Source: NSB (2005).

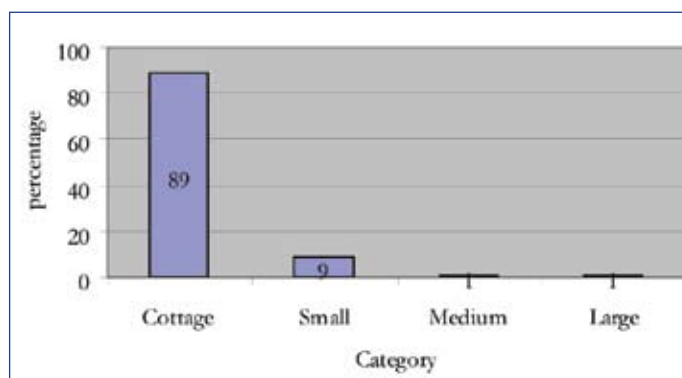
The private sector consists of enterprises in which the government does not have any share. The 'joint sector' consists of enterprises owned and operated jointly by the government and the private sector but in which the government does not own more than 49.9 percent of the shares. The 'public sector' is comprised of enterprises in which the government owns not less than 50 percent of the shares. In terms of numerical size, public enterprises comprise less than 1 percent of the industries, as shown in Table 11.2. However, in terms of firm size, most of the large enterprises such as telecom, airline, banks, hydropower power corporations etc. are in the public sector.

The current industrial identification method classifies the scale of businesses solely in terms of size of input capital, as shown in Table 11.3. Akin to many other developing countries, Bhutan's industrial and services sector is dominated by cottage or small-scale industries. The cottage-scale firms including micro enterprises (mostly small family run businesses such as restaurants, tea stalls, rice mills etc.) comprise almost 90 percent of the firms, as shown in Figure 11.1. Most of these enterprises are sole proprietorships with limited scope for growth due to demand as well as supply side constraints. The medium- and large-scale industries include firms that manufacture alcohol, soft drinks, cement, ferro silicon, calcium carbide and services like telecom, power etc. These larger enterprises have mostly been established by the government and then privatized or are still government owned, as shown in Table 11.4.

Table 11.3 Size Classification of Industries

Classification	Input capital in ngultrum	Input capital US\$ equivalent
Cottage	less than 1 million	22,000
Small	1 million to 10 million	22,000 to 0.22 million
Medium	10 million to 100 million	0.22 million to 2.2 million
Large	100 million and above	2.2 million and above

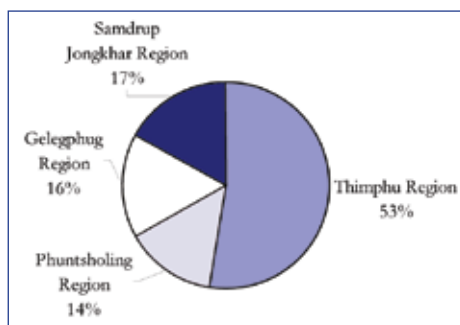
Figure 11.1 Industries Classified by Size (percentage)



Source: NSB (2005).

Figure 11.2 shows the regional distribution of all business licenses (includes trade, industry, services and contracts). The disaggregated data for all the four types of business licenses is generally consistent with the overall pattern shown above. This regional aggregation provides a clear perspective on the spatial concentration of economic activities in major urban centers due to larger population, job opportunities and higher rates of economic growth. The only anomalies lie in the construction sector where a large number of licensees are based in dzongkhags that have major donor funded activities such as hospitals, roads, schools etc.

Figure 11.2 Regional Distribution of Business Licences 2003



Source: NSB (2005).

11.2.2 Relative Roles of Private and Public Sectors

Like in many other small developing countries, the public sector is dominant in Bhutan due to late modernization, a weak private sector, the high cost of infrastructure and the need to provide numerous public services that are indivisible. Government related expenditure (including expenditure in hydropower projects) accounts for almost half the GDP, whereas donor financed capital investments represent almost half the government expenditure. The civil service is a major source of formal sector employment and the construction sector is dependent on contracts related to government or donor-funded activities.

It is for this reason that the country is dependent on state-led economic development and change. The hydropower sector, which is the major engine of economic growth, is entirely financed and managed by the government. Due to limited capital and entrepreneurial capability of the private sector, the government played a central role in establishing most of the industries, as shown in Table 11.4.

Table 11.4 Government Share in Industries as of June 2002
(in percentage)

Company (year of establishment)	Initial Govt shares	Current Govt Share	Shares Divested	Private Shares
Bank of Bhutan (1968)	80	80	nil	--
Bhutan Fruit Products Ltd (1973)	100	0	100	100
Penden Cement Authority Ltd (1974)	100	42.68	57.32	57.32
Bhutan Tourism Corp Ltd (1974)	100	6.67	93.33	93.33
Bhutan Board Products Ltd (1983)	80	23.90	56.10	76.10
Bhutan Carbide and Chemicals Ltd (1984)	80	0	80	100
Bhutan Polythene Company (1986)	100	0	100	100
Eastern Bhutan Coal Co (1988)	100	0	100	100
Bhutan National Bank (1997)	67	27.22	40	72.78
State Trading Corporation Ltd (1969)	100	51	49	49
Sha Slate mines (n.a.)	100	0	100	100
Bhutan Dairy (n.a.)	100	0	100	100

Source: Ministry of Trade and Industry.

Since the Sixth Five Year Plan (1987-1992), the government has either privatized most of the industries or divested its majority shareholdings in the firms that are economically viable. For example, the government has fully privatized the tourism and transport sector. Though tourism has been successful in private hands, the government was compelled to provide support for the transport sector, especially on non-profitable routes due to low passenger volumes.⁸²

Several public sector agencies have been corporatized to encourage them to function as commercial entities and enjoy greater autonomy and flexibility to achieve long-term sustainability. It is hoped that this would allow them to provide improved services for the public. Although these agencies are expected to function along commercial lines, the chairman of the Board of Directors is often a government minister or a senior civil servant and the chief executive is a civil servant on deputation.

The enterprises listed in Table 11.5 have been kept in public control for reasons related to natural monopolies (Druk Air, power corporations, Bhutan Post); to serve social welfare functions (Druk Seed, Post, Food Corporation); for environment conservation (forestry development) or commercial non-viability (Bhutan Agro Industries).

Table 11.5 List of Public Sector Enterprises Corporatized

	Agency	Main Activity
1	Kuensel Corporation	Print media
2	Bhutan Broadcasting Service Corp*	Television and radio
3	Bhutan Telecom	Telecommunication
4	Bhutan Post	Postal services
5	Forestry Development Corp Ltd	Timber logging and marketing
6	Druk Seed Corporation*	Agriculture
7	Army Welfare Project Distillery	Alcoholic beverages
8	Wood Craft Center	Furniture
9	Bhutan Agro Industries Ltd*	Food processing
10	Druk Air Corporation Ltd*	Airlines
11	Food Corporation of Bhutan	Food distribution
12	Bhutan Power Corporation	Electricity transmission and distribution
13	Chhukha Hydropower Corp.	Electricity generation
14	Kurichhu Hydropower Corp.	Electricity generation
15	Basochhu Hydropower Authority	Electricity generation

* Firms that receive some form of subsidy from government

11.3 Trends and Structure of Manufacturing Industry

The production and manufacturing sector is comprised of three main subsectors as shown in Table 11.6. About 70 percent of the industries are based on agriculture, forest and mineral, reflecting

⁸² The import of passenger buses is tax and duty free and non-profitable routes receive interest subsidy on the transport loans.

Bhutan’s natural resource endowments. The mineral-based industries are highly power-intensive and owe their existence to availability of cheap hydropower. While forest-based industries are numerically large due to the high dependence on forest products within the country, in terms of commercial size and export contribution the industrial sector is dominated by power-intensive mineral-based industries.

Table 11.6 The Structure of Industries

Type	Number of Industries 2003	As %
Mineral based	46	6
Forest based	336	46
Agro based	126	17
Others	222	30
Total	730	100

Source: NSB (2005).

Some new industries recently established include polymer yarn texturizing, palm oil refinery, and copper drawing , to name a few. These industries have largely sprung up in response to the provision of infrastructure and space at the industrial estates, the granting of tax holidays, exemption of tax on import of raw materials and exemption from excise duties. Most of these industries are geared for export to the Indian markets and enjoy preferential access due to the bilateral free trade agreement between Bhutan and India.

In June 2005, the government issued a notification that the Ministry of Trade and Industry will not encourage/entertain any new proposals pertaining to: manufacture of ferro silicon, drawing of copper wires, polyester yarn texturizing and refining vegetable oil. Although the reason for doing so has not been published, such decisions must have resulted from the increasing requirement of under priced electricity for ferro silicon plants, and the requirement of convertible currency to import raw materials for the other three industries. Further, these industries derive their competitive edge from the lower tax rates on import of raw materials compared to India and the free access to the Indian markets rather than from intrinsic gains in productivity and efficiency. In addition, there is some suspicion that the Bhutanese business people are ‘fronting’ for non-nationals.

The other proposed industries include a beer brewery, LPG bottling plant, jute plant, paper and packaging materials factory, car batteries and other mineral based industries like magnesium metal, ferro chrome, and silico manganese. All these industries are concentrated in Phuentsholing, an area bordering India with easy road access and availability of cheap day labourers from across the border.

11.3.1 Power-Intensive Mineral-Based Industries

Bhutan’s manufacturing sector is dominated by power-intensive industries that engage in processing raw minerals. These industries enjoy access to domestic mineral sources and cheap and reliable electricity. The main minerals found in Bhutan are coal, dolomite, gypsum and limestone. Dolomite,

gypsum and limestone are used as input for the large mineral-based industries such as cement, ferro silicon, calcium carbide, or plaster of Paris. Most of these industries were established in anticipation of, or after, the commissioning of the Chhukha Hydropower Project in 1988.

In the last few years, there have been several proposals to establish more power-intensive industries. The government has accorded approval for the establishment of six new ferro silicon plants. One plant in Samdrup Jongkhar district has reached an advanced stage of construction and is expected to become commercially operational in February 2006. The other five are at various stages of project preparation phase. In just the last two years two iron ingot-processing plants have also been established in Phuentsholing. The construction of the Dungsam Cement Project, which was suspended in 1990, due to security problems in the area is expected to be revived. Table 11.7 shows the level of dependence on power in three industries.

Table 11.7 Cost of Power in the Power-Intensive Industries
(As percentage of total cost of production)

	1998	2002	Average 1998–2002
Cement	3.95	5.96	4.87
Ferro Alloys	21.30	29.34	23.93
Calcium Carbide	15.03	14.25	13.89
Average	13.43	16.52	14.23

Source: MOTI (2004).

Due to the low volume of consumption by other users and the low rates of domestic electrification the power-intensive industries consume about 73 percent of total domestic consumption. These industries receive a large subsidy in power prices when compared to the export price (as shown in Table 11.8). Access to cheap power is the main source of comparative advantage for these industries, especially in light of the fact that domestic tariff in Bhutan is less than one third of that obtaining in India and other South Asian countries (World Bank 2002a).

Table 11.8 Differential Power Tariff for Domestic Industry and Export
(Nu. per unit)

Year	Industrial	Export
1998 and 1999	0.60	1.00
2000	0.70	1.50
2001	0.80	1.50
2003	0.90	1.50
2005	0.90	2.00

Note: Nu. 0.90 is the block rate for high voltage consumers.

There is a demand charge of Nu. 54,000 per month per kWh from 2004 onwards.

Source: Department of Energy.

With the exception of the cement industry, the other power-intensive industries are all export oriented, as shown in Table 11.9.

Table 11.9 Direction of Sales of Power-Intensive Industries
(in Nu. million)

Industry	1993	1996	1999	2002	2004	2004 (%)
(1) Bhutan Carbide & Chemicals Limited						
Exports to India	355.58	542.59	546.76	704.73	714.67	97.7
Other countries	0.55	nil	nil	nil	0.00	0.0
Sales within Bhutan	0.69	18.62	22.56	2.78	16.92	2.3
Total Sales	356.82	561.21	569.33	707.51	731.59	100
(2) Penden Cement Authority Limited						
Exports to India	95.92	124.20	433.67	258.15	265.14	31.3
Other countries	2.10	0.27	nil	nil	0.00	0.0
Sales within Bhutan	15.73	85.06	250.78	556.12	586.69	68.9
Total sales	207.78	209.53	684.45	814.27	851.83	100
(3) Bhutan Ferro Alloys Limited						
Exports to India	--	497.14	534.73	643.16	712.85	95.3
Other countries	--	nil	nil	nil	24.19	3.2
Sales within Bhutan	--	nil	nil	nil	11.15	1.5
Total sales	--	497.14	534.73	643.16	748.29	100

Source: RMA (2004).

Penden Cement Authority, the largest cement plant, has a daily production capacity of 1600 metric tonnes. About 70 percent of its sales are in the domestic market due to the demand from hydropower project construction. This domestic demand is likely to taper off in the coming years with the completion of the Tala Power Project. Lhaki Cement, a smaller private firm, has a daily capacity to produce 150 metric tonnes and exports 70 percent of its products to India.

Due to high dependence on power subsidy, the long-term viability of these industries is questionable on two accounts. First, with the corporatization of power transmission and distribution, the Bhutan Power Corporation, in an effort to ensure its sustainability has indicated that power tariff will progressively increase to match high transmission and distribution costs and to keep up with inflation. Given the wide gap between industrial price in Bhutan and electricity prices in India, the industries should expect prices to rise further to match the export prices at the very least.

Secondly, the liberalization of the Indian market in line with its multilateral commitment poses competitive challenges for Bhutanese firms. For example, there were concerns that calcium carbide exports from China was driving down the price in India, thereby, posing a threat to Bhutan's Calcium Carbide exports. In 2000, India imposed antidumping duty on calcium carbide originating from China and Romania at the rate of US\$13.88 and US\$24.29 per metric tonne respectively. Similarly ferro silicon originating from China and Russia are subject to an antidumping duty of US\$764 per metric tonne. This has shielded the prospects of two major industries, which continue to enjoy access to a protected market in India.

The cement industry will also have to improve efficiency and seek new markets as added competition is expected from the planned establishment of large cement industries in North East India, which is currently supplied by Bhutanese firms.

11.3.2 Forest-based Industries

Industries based on forest resources fall into two categories: those extracting timber and those producing wood-based products. The timber industry happens to be a natural monopoly in the form of the Forestry Development Corporation Limited (FDCL), a 100 percent government-owned corporation. It is the only authorized agency to extract, harvest and sell timber in the domestic and international markets. The FDCL is also mandated to carry out the implementation of forestry management plans in the Forestry Management Units (FMUs) identified by the Department of Forestry. The FMUs are the designated logging areas managed by the FDCL, as per the scientific and environmentally sound harvesting guidelines.

The prospects and problems of the timber industry were discussed extensively in Chapter 9, here we will only summarize the main conclusions. At present, the annual cut from FMUs is about 8-9 million cft per annum, whereas the Annual Allowable Cut (AAC) from the areas presently under FMUs is estimated at 17 million cft per annum. Thus the annual cut is only 50 percent of the AAC, indicating vast potential to double the amount of timber extracted. In addition to the unrealized AAC, about 240,000 hectares or about 6 percent of the total land area is available for timber production. Hence, there is immense potential to increase commercial timber production without adversely affecting the environment or compromising the stringent conservation policies.

It is thus evident that Bhutan's timber resources are largely underutilized from both the stock as well as the AAC perspective. As shown in Table 9.9, about 34 percent of the total forest area can be used for timber production. However, at present only 6 percent is under management plans and 9 percent is around local settlements for supply of timber for the rural people. This leaves a total forest area of about 10 percent that is too far from the roads (making it commercially unfeasible) and another 8 percent that is not covered by management plans due to shortage of skilled personnel to prepare scientifically sound harvesting plans.

In January 1999, the government introduced a new timber pricing and marketing policy which endorsed market-based pricing mechanism, stipulated that urban, commercial and industrial consumers could obtain timber through auctions and banned the export of logs and sawn timber. Export auctions are allowed only if the timber cannot be sold in Bhutan, even after 2-3 consecutive auctions. The FDCL has to obtain permission from the Ministry of Agriculture to conduct such exports. The objectives of this policy are to strengthen forest conservation, ensure that local demand is met, and to encourage higher value downstream processing. In April 2000, the government banned the export of semi-finished timber products⁸³ in order to discourage the export of barely processed timber. As a result, exports declined drastically in 1999. However, domestic consumption remained buoyant due to strong growth in the construction sector, driven by large government projects and a private housing boom.

83 *Semi-finished timber products are defined as: door and window frames, door and window panels, ceiling beats, cross arms and wood panels. Finished timber products are defined as: particle board; plywood, furniture, broom handle and lathe turned railings (Forest and Nature Conservation Rules of Bhutan 2000, Vol. 1),*

The wood-based industries, which produce finished products based on timber, form the single largest group of production and manufacturing industries with 336 firms comprising 46 percent of the total number of industries. The firms are all privately owned and include sawmills, furniture workshops, firms that manufacture and export broom handles, ready-to-assemble furniture, particle boards, plywood, sawdust briquette, packing boxes for fruits etc. The Wood Craft Center located in Thimphu is the only exception. It is owned by the government and was established in 1991, with assistance from the Danish government, to train local people in making furniture.

The wood-based industries of Bhutan enjoy a competitive advantage in the availability of cheap timber at prices ranging from US\$65 per m³ to US\$102 per m³ compared to international prices in the range of US\$126 per m³ to US\$238 per m³. The labour costs are also competitive at US\$89 per month compared to US\$136 in Bangladesh and US\$156 in the Philippines.⁸⁴ The labour cost in this case refers to industrial wages that take into consideration the employment of Indian workers. However, due to the lack of technology, the lack of economies of scale and the overall low productivity levels, Bhutanese furniture cannot compete effectively with imported furniture from Thailand despite the 40 percent tariff levels.

The wood-based industries complain that the timber available through auctions is of mixed species that vary in grade, size and quantity, creating several problems. For example, to use kiln-drying facilities, different types of hardwood have different drying schedule. As firms cannot get sufficient quantity of a single species to fill the kiln, it compromises the quality-seasoned hardwood available in the market.

The non-availability of a single species also poses problems for processing the wood for higher value-added goods—as such products require uniformity in size and colour. Thus, the FDCL should consider grading and sorting the timber based on quality and species before the auction. However, it may be reluctant to do so as it is likely that buyers will only purchase the good quality logs and leave large quantities of inferior quality logs unsold. The present practice benefits FDCL as it can dispose of all kinds of logs in a single lot.

The current regulations make it impossible for vertical integration, which is common in the industry. For example, access for private firms to logging operations can guarantee the availability of raw materials for higher value-added downstream processing and enable it to manufacture a diverse range of timber products using the logs (for veneer) as well as the lops and tops (for particle board) and other uses that do not require high quality timber (ITC 2000).

The wood industries also face problems due to lack of skilled workers. Most of the employees in the wood industries are foreign workers. As the workers employ obsolete technology, the products often lack uniformity and are shoddily finished. In recent years, the furniture units in Bhutan have been facing increasing competition from Thailand's cheaper and better quality imports.

In seeking to balance conservation and utilization, the forest-based industries face several constraints arising from government policy and low levels of technology, managerial capacity etc.

⁸⁴ A detailed discussion on this issue can be found in World Bank (2002b).

However, there is also great potential for exporting both timber-based and non-timber products. These constraints and potentials have been discussed at length in Chapter 9.

11.3.3 Agro-Based Industries

Agro-based industries constitute an increasingly important component of Bhutan's industrial scene. There are 126 licensed agro-processing industries, of which the largest two, by far, are Bhutan Fruit Products Limited and Bhutan Agro Industries Limited. These two firms process fresh fruits and vegetables to produce fruit juices, jams and jellies and pickles. The main export markets are in India and Bangladesh. The other major agro-business is a distillery that produces whisky, rum and other alcoholic beverages. The sales and export figures of the industries are shown in Table 11.10.

Table 11.10 Sales and Exports of Major Agro Industries Products
(in Nu. million)

	1993	1996	1999	2002	2003	2003 (%)
Bhutan Fruit Products Limited						
Exports to India	81.10	119.51	104.90	107.88	145.00	83.30
Exports to other Countries	4.40	9.79	7.76	4.22	8.53	4.90
Sales within Bhutan	6.77	3.92	12.24	21.77	20.54	11.80
Total sales	92.27	133.22	124.90	133.87	174.07	100.00
Bhutan Agro Industries Limited						
Exports to India	--	7.07	14.54	8.19	11.47	32.89
Exports to other Countries	--	0.55	1.71	0.69	2.83	8.12
Sales within Bhutan	--	4.79	5.12	18.78	20.57	58.99
Total sales	--	12.41	21.38	27.65	34.87	100.00
Army Welfare Project Distilleries						
Exports to India	45.45	73.36	64.57	66.34	20.79	9.00
Exports to other Countries	0	0	0	0	0	0
Sales within Bhutan	104.95	125.25	170.30	188.64	213.13	91.00
Total sales	150.40	198.61	234.87	254.97	233.83	100.00

Source: RMA (2004).

Agro-based industries deal with perishable products where the quality—which is mainly a factor of the freshness of product—fetches the premium price in the export market. A major constraint for these industries is the absence of a reliable transport network. The problems associated with transportation include the following:

The exporting season coincides with the receding monsoons, which can cause landslides and disrupt transportation networks within Bhutan;

- The time taken for goods to reach from Thimphu to Kolkota (the nearest port 950 km away) can take up to six days due to trans-shipment requirement and poor road infrastructure;
- Exports to Bangladesh face further problems as the fruits have to be trans-shipped to Bangladeshi trucks at the India-Bangladesh border.

Export of fruits and vegetables to countries beyond the immediate region is also difficult due to transportation problems. Furthermore, there are various sanitary and phytosanitary standards that have to be met for exports to countries such as Thailand and Singapore. In 2004, the Government of India informed Bhutan that its organic products exports must be certified to comply with India's Prevention of Food Adulteration Act 1954. However, this was waived off for the time being as Bhutan did not have testing facilities to certify the exports.

11.4 Employment Implications of the Industrial Sector

The production and manufacturing sector in Bhutan, which comprises only 5 percent of the licenses issued, is dominated by agro mineral and wood based industries. These industries have low employment elasticity and are engaged in producing intermediate goods, which are bulky in nature. These industries are also capital-intensive and have minimal forward and backward linkages in the local economy. However, as seen in Chapter 3, the proportion of labour force engaged in industry (defined broadly to include hydropower) has increased in recent years. According to the Labour Force Surveys, the share of industry in total labour force has increased from 6 percent in 1998 to 10 percent in 2004 (Table 3.10).

Global experience has shown that the promotion of micro, cottage and small enterprises are a viable option to meet national development goals related to poverty alleviation, rural development, employment creation and developing local production structures. Cottage and small industries also play an important role in the conservation and promotion of traditional handicrafts sector, which is of critical importance for Bhutan. The important role of cottage as well as small and medium enterprises (CSMEs) in economic development is evident in the historical experience of developed countries, which shows that CSMEs plays a vital role in industrial development, technological innovation and export promotion.

Cottage and small industries comprise almost 90 percent of all enterprises in Bhutan⁸⁵ and provide employment for a large number of people. However, due to a lack of a comprehensive survey, data on employment by cottage and small enterprises is not available.

11.5 Constraints to Industrial Development

Private sector development has been a focus of the government's policy from the Sixth Five Year Plan (1987-1992) onwards. Since then, the private sector has been designated as 'the engine of growth' for generating income as well employment opportunities. Despite numerous efforts to boost the private sector the performance of the private sector has been modest. The causes for

⁸⁵ *The status of cottage and small industries in Bhutan are discussed at length in Annex 4.*

weakness of the private sector are well documented in various studies and surveys. Some of the major concerns are highlighted below.

11.5.1 Home Market Constraint

As with many small developing economies, Bhutan faces numerous constraints in industrial development due to its small size and isolation from major markets. On the supply side, the small size of the country leads to high dependence on a narrow range of resources. Similarly, due to small population, both the workforce and markets are limited. This, combined with large distance from foreign markets, results in a lack of competition as often the market can support only one producer. As a result, economies like Bhutan cannot benefit from the effects of competition, efficiency gains and innovation.

With an estimated GDP per capita of US\$830 and Gini coefficient estimated at 0.42, signifying relatively high concentration of income (NSB 2004b), the domestic demand base is fairly low. In addition, vast majorities of the people live a subsistent agrarian life with limited access to cash income and low levels of monetization. As a result, the domestic demand base is limited. However, this limited domestic demand is offset by the free access to the vast Indian market.

11.5.2 External Market Constraint

Bhutan faces numerous constraints in the external markets due to small size, lack of diversification and low levels of competitiveness. For example, Bhutan's trade is heavily concentrated in the Indian market, which forms the source for 88 percent of all imports and the destination for 97 percent of all exports. Further exports are concentrated in a few commodities such as electricity, products of power-intensive mineral industries and agriculture produce.

Export diversification in terms of products and markets has been constrained by domestic economic factors as well as distance from the overseas markets. The high cost of transportation to and from Bhutan renders exports non-competitive in international markets. Hence, Bhutan has not been able to penetrate markets beyond India and Bangladesh.

The lack of domestic skills and information about the foreign markets also hamper export diversification. In addition, most countries impose strict restrictions on trade in agriculture products. The Bhutanese traders are not aware of SPS standards and the other quality control requirements. Even if Bhutanese firms can gain market entry, most firms cannot supply sufficient quantity of products demanded due to the small resource base. Tourism is one of the major exports to countries other than India and Bangladesh. However, this industry is highly volatile and is often affected by factors beyond Bhutan's borders.

11.5.3 Labour Market Constraint

Bhutan faces a peculiar situation in the context of the labour market. Estimates show that about 50,000 young Bhutanese will enter into the job market between 2002 and 2007. With the

present unemployment rate estimated at 2.5 percent, the government is concerned at the rising unemployment rate. At the same time, the economy continues to employ about 40,000 workers from India, mainly in the construction sector.

Such a peculiar situation can be attributed to the following factors. Firstly, there is a mismatch between the aspirations of those who leave school without technical or vocational skills and the jobs they hope to obtain. They prefer desk jobs while the jobs available are mainly blue-collar jobs. Secondly, from an employer's point of view, it is cheaper and more productive to hire non-Bhutanese workers due to the high reservation wages among the Bhutanese. Although there is no minimum wage legislation in Bhutan, the wage rates for the national work force, which is an administered wage for people engaged in government funded projects, acts as the de facto minimum wage. The national wage rate of Nu. 100 per day, is much higher than the wages paid to the Indian workers. Table 11.11 shows the average monthly salary for workers in two major towns, Thimphu, the capital, and Phuentsholing, the major commercial centre on the border with India.

Table 11.11 Average Monthly Salary of Bhutanese and non-Bhutanese Workers (Nu.)

City	Nationality	Production	Non- Production	All
Thimphu	Bhutanese	4823	13,811	6112
	Non-Bhutanese	3905	8839	5609
Phuentsholing	Bhutanese	4176	9000	5718
	Non-Bhutanese	2393	6369	3048

Source: World Bank (2002b).

In addition to lower wages, employers also prefer migrant workers, because Bhutanese workers are more prone to job-hopping often frequently seeking leave during rice transplanting and harvest season, or for pujas and other family and religious events, which are numerous in the Bhutanese social calendar. Bhutanese people are also averse to menial works and repetitive tasks. In addition, most Bhutanese take for granted the existence of strong family and social networks that can provide them some cushion between jobs.

The government set the ceiling for foreign workers in the country at 30,000 in 1994. This was revised to 45,000 in 2000 to meet the high requirement for construction workers in the large hydropower projects. In 2005, it is estimated that there are about 32,000 to 37,000 foreign workers in the country (RGOB 2005b). These figures do not include the day workers who come to the border towns, without permits, which are estimated to number 10,000 to 20,000.

While these foreign workers play a vital role in fuelling growth, especially in the construction and hydropower sector, the government is concerned about illegal migration and the need for employment opportunities for young Bhutanese. Hence, the government has set strict criteria for recruiting non-national workers, closed off certain employment categories to non-nationals and encouraged industries to sign an agreement for employment of Bhutanese nationals. Government

projects and the private sector can recruit non-national workers based on the size of contract. However, for personal residential construction the person is allowed a maximum of 12 workers.

The implications of a strict policy on imported labour along with the lack of skilled domestic labour (both qualitatively and numerically) pose severe constraints on industrial growth in Bhutan. While access to cheap power may confer some advantage, this can be offset by high labour costs. It is not surprising, therefore that most industries locate in the border towns, which have access to cheap day workers from across the border.

11.5.4 Capital Market Constraints

Bhutan's financial sector is small and nascent, comprising of two commercial banks, one development bank and one insurance company. The main constraint in the development of the financial sector is the weakness in the private sector and the low levels of monetization as most people are dependent on subsistence agriculture. The small and fragmented nature of the domestic economy also impedes the growth of the financial sector. In early 2000, the financial institutions faced excess liquidity problems caused largely due to lack of domestic investment opportunities and high interest rates, high collateral requirements and conservative lending practices.

One of the main complaints of the private sector is the high cost of borrowing funds due to the high interest rate charged by the financial institutions. The financial institutions state that their interest rates are largely due to the high level of non-performing assets, which increases banking costs. Interest rates are also high as the banks determine rates based on terms and sectors rather than on the underlying risk of the actual borrower (World Bank 2002b). This serves as a simplistic measure to overcome risks associated with information asymmetry. Although the interest rates have been liberalized since 1997, the rates between the commercial banks have not diverged much.

The cost of funds is also high due to the collateral requirements, which can be 100-200 percent of the value of the loan. Banks justify their prudent cautious lending policy on the information asymmetry and the inability to identify profitable projects from risky projects. Banks also lack the procedure and expertise to manage risks partly because market infrastructure such as accounting, and audit systems are not in place (ADB 2002). The lack of a contract law and enforcement mechanisms also affects the decisions taken by the banks. In addition to the high cost of funds, the financial institutions do not provide more sophisticated financial instruments and limit their activities to simple lending and borrowing operations.

11.5.5 Foreign Exchange Constraint

Due to concerns about the depletion of convertible currency reserves, there are several limitations on access to foreign exchange. While industries can access convertible currency for import of plant and machinery, foreign exchange is available for import of raw materials only if the industry earns sufficient convertible currency from its export. Recently many industrial proposals, such as polyester

yarn texturizing and edible oil refining have been made to take advantage of the tax shelter provided by the free trade agreement with India. However, most of these industries involve import of raw materials from third countries, using hard currency. The government has announced that approvals will not be accorded to establish industries for palm oil refining, polymer yarn texturizing and copper drawing as they require convertible currency for importing the raw materials.

11.5.6 Infrastructural Constraint

One of the major constraints to industrialization and private sector development in Bhutan is the lack of good infrastructure, in particular road transportation. Most of the roads that are built on steep terrains are narrow and unreliable due to frequent landslides especially during the rainy season. This increases the transportation costs and also affects reliability. For example, the rate charged per tonne of freight between Thimphu and Phuentsholing (179 km) is about Nu. 570, which is only marginally lower than the cost of Nu. 650 per tonne between Phuentsholing and Kolkata (the nearest seaport in India at a distance of 770 km). The higher cost for transportation is attributed to the poor and narrow road condition that limits the vehicle size to smaller lorries and high fuel consumption due to steep gradient.

The present road network in the country, estimated at 4152 km, is also inadequate to cover the scattered population. The Poverty Assessment and Analysis Study 2000 shows that out of the 201 gewogs, 33 percent are not at all connected to feeder roads and another 33 percent are only partly connected to feeder roads (RGOB 2000). Hence, in the absence of a cheap and efficient transport system, farmers do not have any incentive to move from subsistence farming to market-oriented agriculture.

Agriculture exports such as mushrooms and asparagus are easily perishable and must be delivered for consumption in the shortest period after harvest. Hence, air transportation is necessary to reach high value markets in Southeast Asia. However, Bhutan's air transport infrastructure has been constrained by the small passenger and cargo capacity of the two BAe 146 aircrafts that comprised the entire fleet of Druk Air, the national airlines. The fleet was upgraded in 2004 with the addition of two Airbus A319 aircrafts with increased passenger and cargo capacity. However, the operational limitations of Paro Airport, which depends on visual navigation, make air transport unreliable during the rainy and cloudy monsoons season. This also constrains the development of the tourism sector.

Other infrastructure constraints relate to the long distance from Kolkota, the nearest port in India through which Bhutan has access to the sea. The cargo that may come by sea or airfreight has to be unloaded in Kolkota, presented for customs clearance and then again loaded on to trucks bound for Bhutan. This increases both the time and the cost of cargo handling.

The rough terrain and the scattered nature of most rural settlements in the country impose a high cost for expanding basic infrastructure services such as telecommunication and electricity. The low density of population and high fixed costs of infrastructure also makes delivery of such services expensive and unattractive for private sector participation.

At present telephone connections are limited to major cities and towns. Only 76 of the 201 gewogs are connected to the national network (MIC 2003). With rapid technological developments, wireless and cellular telephone has increased communication access to other remote areas. However, current national tele-density stands at about 3.25 per 100 inhabitants, and rural tele-density is even lower at about 0.01 percent. The government has plans to set up at least 10 telephone lines in all the 201 gewogs by 2006.

Druknet, the national internet service provider, has about 2500 customers in a population of approximately 600,000. There are about 7000 computers nationwide. At the most, 5000 people must be accessing the Internet, which is less than 1 per 100 inhabitants. Increased use of ICT infrastructure is constrained by the low literacy rate and an even lower ICT literacy.

On the electricity front, estimates show that electricity connection has reached to about 50 percent of the households. The cost of electrification per household is one of the highest in the world due to the terrain, low consumption rates and scattered nature of households. Present estimates show that it costs about Nu. 100,000 to connect one customer and the cost of supplying power to an average household is Nu. 4 per unit while the cost varies between Nu. 0.60 and Nu. 2.00 per unit for consumers based on a progressive consumption scale. The Bhutan Power Corporation (BPC) has the social mandate to provide electricity access and the government has set a target to attain 100 percent electrification by 2020.

11.5.7 Regulatory Constraints

The licensing and regulatory burden, which is often complex and long in Bhutan, increases the transaction costs and hampers private sector development. For example, to get a licence in Bhutan an individual must fulfill 11 procedures, which takes an average of 62 days. Such procedural requirements are a strong barrier for entry for small business as it represents a large cost in proportion to the size of their business. Table 11.12 provides a comparison at the regional level and with OECD countries.

Table 11.12 Costs of Starting a Business

Indicator	Bhutan	Regional Average	OECD Average
Number of Procedures	11	9	6
Time (days)	62	46	25
Cost (% of income per capita)	11	45	8

Source: World Bank (2005).

The figures in Table 11.12 are based on the assumption that the entrepreneur is a resident of Thimphu. The cost of starting a business is higher for people who live outside Thimphu. Furthermore, to establish a production and manufacturing unit, the procedures can take between a week and six months as it must also comply with various environmental standards which are considered rigid by regional norms.

Due to the short history of the private sector, the size and level of economic development, the legal and institutional mechanisms to support a commercial culture are still evolving with the enactment of various legislations and establishment of new institutions. Further, as a small and relatively homogenous society, commercial litigations have been few and often settled out of court. Statistics on the costs of enforcing contracts, shown in Table 11.13, reveal why most people may not want to settle disputes in the law court given the time and cost involved.

Table 11.13 Costs of Enforcing Contracts

Indicator	Bhutan	Regional Average	OECD Average
Number of Procedures	20	29	19
Time (days)	275	349	229
Cost (as % of debt)	114	38	11

Source: World Bank (2005).

If Bhutan's private sector is to develop further, an efficient legal system is important for enforcing contracts between debtors and creditors, suppliers and customers. In the absence of efficient means to enforce contracts it is difficult for businesses to engage with new customers or borrowers. This in effect limits business interactions among a small and often elite group linked by kinship and knowledge of available assets. For firms to grow beyond a proximate geographic region and interact with anonymous suppliers and dealers, there is a greater need for formal contractual assurance (McMillan and Woodruff, 2002).

11.6 Tourism Industry

The tourism industry began in 1974, coinciding with the coronation of the fourth King of Bhutan. Since its inception till 1991, the tourism industry (including infrastructure hotels, transport, guide services etc.) was a government monopoly run by the Bhutan Tourism Corporation (BTC). The BTC was privatized in 1991 and the market opened up to other competitors. This sector was further liberalized in 1999 and currently there are about 165 licensed tour operators, of which 104 are operational (DOT, 2004). However, about 50 percent of the market share is dominated by the top six tour operators.

The tourism sector plays an important role in Bhutan's economic development as the largest commercial source of convertible currency earnings. This sector has significant potential for backward linkages in the domestic economy and for employment generation for the rising numbers of educated youth. Foreign tourists also play a vital role in informing the global community about Bhutan and generating international goodwill for the country.

The direct contribution of the tourism sector to GDP and hard currency earnings is shown in Table 11.14. It should be noted, however, that these figures tend to underestimate the importance of tourism for the economy of Bhutan. The contribution to GDP does not include contributions made by the tourist-related economic activities such as hotels, handicrafts, transport, etc. Further, the convertible currency contributions of this sector will be significantly higher considering that all tourists must purchase their Druk Air tickets in convertible currency.

Table 11.14 Overall Contribution of the Tourism Sector

	2001	2002	2003
Tourism receipts (US\$ million)	9.2	8.0	8.3
Tourism receipts/GDP (%)	1.8	1.4	1.2
Tourism receipts/hard currency exports (%)	181.6	131.8	124.9

Source: Royal Monetary Authority of Bhutan, June 2005

While Bhutan's location, terrain and relative isolation have posed significant barriers to economic or industrial diversification, these very conditions provide a strong comparative advantage for Bhutan as a special tourist destination for nature and cultural tours. The 'high value, low volume/impact' policy has been in place since the inception of tourism in the early 1970s. Under this policy, tourists must visit Bhutan in organized groups through a travel agent who offers an integrated package that includes food, lodging, transport and guide services. The minimum tariff is fixed by the government at US\$200 and US\$165 per person per day for the peak season and lean season, respectively. From the above amount, the government deducts US\$65 and US\$55 as tourism royalty. Such a cautious policy has successfully ensured that the local culture and the environment are not overwhelmed by mass tourism.

The success of the tourism industry is, however, highly dependent on factors beyond national control. For example, the tourism industry experienced a steady growth from 1997 to 2000. However, in 2001, following the 9/11 attacks in the United States and other incidents such as the Maoist insurgency in Nepal, communal attacks in India, SARS epidemic, war in Iraq etc., there was a decline in tourist arrivals to Bhutan. As a result, the contribution of tourism receipts to the GDP declined from 2.2 percent in 2000 to a low of 1.3 percent in 2002. However, in 2004, the number of international arrivals to Bhutan in the year 2004 crossed 9000 tourists, the largest number thus far (Table 11.15). The increase is largely attributed to the wide media coverage that Bhutan received, free of cost, with the establishment of two high-end resorts in the country (Kuensel 2005c).

Table 11.15 Tourism Arrivals and Receipts

Years	Arrival (no.)	Gross Earnings (US\$ million)	Revenue (US\$ million)
1997	5363	6.55	2.48
1998	6203	7.98	3.02
1999	7158	8.70	3.42
2000	7559	10.5	4.10
2001	6393	9.2	3.27
2002	5599	7.98	2.78
2003	6261	8.324	2.922
2004	9259	12.5	4.34

Source: Department of Tourism..

It should be noted that the above official statistics of tourist arrivals only records international tourists visiting the country on trips arranged by the tour operators through the integrated packages. The two categories, which are part of international tourism statistics, but are excluded from Bhutan's official tourism statistics, are those on official visit and visitors from some neighbouring countries.⁸⁶ It has been estimated that official visitors numbered some 3600 in 2003. In addition, some 15,000-20,000 Indian tourists come by road every year, who are not included in the annual tourism statistics.

11.6.1 Challenges faced by Tourism Industry

The tourism sector faces numerous challenges in expanding its capacity due to several reasons, the most important of which are discussed below.

Government regulations

The administered pricing system requires the tour operators to charge a minimum daily rate discussed earlier. This pricing mechanism while serving the 'high value low volume' tourism policy limits incentives for the tour operators to compete and upgrade services. The need to use integrated packages also confines the spillover effects of the industry to a few hotels and restaurants and has little impact on the local or rural economy, even if tourists visit villages and go on treks.

Seasonality

A vast majority of the tourists visit Bhutan on cultural tours, which fall during the spring and autumn season coinciding with the local festivals. The peak months of April, September, October and November constitute 70 percent of the bed nights (DOT 2004). Such high levels of seasonal concentration dissuade investments in hotels and other infrastructure as the risk of these lying underused in the other eight months is high. During the low season, hotel occupancy drops to 15-20 percent. The problem is compounded by the tendency of government guests and donor missions to visit Bhutan during those months.

Hotel infrastructure

Although the number of hotels is rising, the concentration of tourists in the peak seasons makes it difficult for most tour operators to find quality rooms in places beyond Thimphu and Paro. During the festival seasons, many tour operators hire private houses or pitch tents to accommodate the rush of tourists. This has created some resentment among the tourists who are required to pay the fixed tariff irrespective of facilities.

Air transport

The limitations arising from weak air transport infrastructure is a major constraint. Druk Air, the national airline, used to operate only two BAe 146 airplanes with 85 seats each. The fleet has

⁸⁶ Nationals of Bangladesh, India and Maldives are not required to come through tour operators and/or to pay the fixed tariff rates, which is applicable to all other nationalities.

been expanded with the acquisition of two Airbus A319 aircraft with 124 seats and double the cargo capacity. Despite expanded capacity, tour companies continue to face problems in making reservations for the tourists. The operational limitations of Paro airport poses problems during the monsoons as airplanes cannot take off and land in inclement weather due to the reliance on visual navigation and the risks of flying into a narrow airstrip positioned between high hills. Although the national carriers of Nepal, India and Thailand (destinations to which Druk Air flies) have reciprocal rights to fly into Bhutan, they have not done so partly for the above reasons.

11.7 Policies for Industrial Development

In order to boost the private sector and facilitate industrial development the government has undertaken some policy initiatives as well as established infrastructure to encourage business growth. This section outlines the various policy and initiatives taken in the recent past.

11.7.1 Fiscal Incentives

In an effort to boost private sector development the government announced the following incentives in the National Budget Report 2002-2003.

- Removal of sales tax and customs duty on plant and machinery;
- Removal of sales tax on raw materials and even removal of customs duty for raw materials used by convertible currency earning businesses;
- Income earned in convertible currency by manufacturing industries, Information Technology industries or services, and agriculture produce to be exempt from income tax.

Further, to foster investment, encourage market diversification and balanced regional development, the government announced the following tax holidays:

- Three years for manufacturing industries;
- Three years for Information Technology training and vocational institutes;
- Five years for hotels, schools and auto-mechanical workshops established in the interior;
- Seven years for manufacturing industries established in the interior parts of the country.

The tax holidays are applicable to new industries only, and commence from the date of commercial production/operation. In addition, the export tax on oranges, apples and cardamom exports was abolished.

In 2001, the government abolished customs duty and sales taxes on domestic electrical appliances to enable the rural people to take advantage of rural electrification and also reduce consumption of firewood to conserve the environment. Similarly, taxes on tin sheets used for roofing were removed to alleviate the difficulties of frequently re-roofing the houses with wooden shingles and also to protect the environment. The sales tax and customs duty on passenger buses were removed to allow cheap and efficient passenger transport.

The revenue forgone on account of the tax holidays enjoyed by 11 firms in 2004 was estimated at Nu. 32 million. Similarly the revenue forgone on account of customs duty and sales tax exemption on raw materials was estimated at Nu. 327 million and the import duty forgone on import of plant and machinery amounted to Nu. 804 million. Hence the total revenue forgone on account of the exemptions was Nu. 1163 million in 2004 (MOF 2005). This amount is significant as it corresponds to 17 percent of total domestic revenue for 2004-2005.

11.7.2 Monetary and Financial Policies

Exchange rate policy

Since the introduction of the ngultrum as the Bhutanese currency in 1974, it has been pegged at par to the Indian rupee. The two currencies are freely convertible and float side by side within Bhutan. There are no restrictions on payments for current transactions and all payments are denominated in Indian rupees. Fixed exchange rate and free current account convertibility with India are designed mainly to boost industrial development in Bhutan by stimulating trade with India.

By contrast, convertible currency payments are subject to current and capital account restrictions as per the Foreign Exchange Regulations 1997. Foreign exchange controls on current account apply to traders and holiday travellers, although this is to be revised to eventually abandon the control. The four categories of current account controls include: ceilings on amount of foreign exchange that commercial banks can hold; limits on foreign exchange requirements for importers; limits on foreign exchange earnings that exporters can retain in foreign currency; and limits on foreign currency that business people or private travellers can take out of the country.

Capital account controls relate to investment and borrowings abroad and include controls on FDI, offshore investment and borrowings. The offshore investors have to obtain permission from the Royal Monetary Authority to invest or borrow from abroad.

While the above limitations are maintained because of the very limited ability of Bhutan to earn currency, it should be recognized that controls may sometimes aggravate the problem of scarcity by distorting the production structure and inhibiting the growth of export-oriented industries having potential to earn foreign exchange.

Interest rate liberalization

Prior to 1997, the financial institutions had limited autonomy as the interest rates on both deposits and advances were administered by the RMA. In October 1997, the shift from a controlled monetary management system to a more liberal regime was initiated with the liberalization of interest rates according to a spread system that allowed the financial institutions to set their own deposit and lending rates while maintaining the overall interest spread of a maximum of 6 percentage points. This spread system was discontinued in 1999 and today interest rates are completely liberalized, allowing greater competition (RMA 2004).

However, the two commercial banks have not diverged much from previous interest rate structures, with the exception of minor variations. The interest rates of the two banks closely shadow each other. This limited impact of interest rate liberalization can be attributed to the lack of competition among financial institutions and small size of the market.

Credit guarantee scheme

In 2003, the government launched a credit guarantee scheme to provide start-up capital and encourage self-employment for young people in the age-group of 18-30 years. The applicants must possess technical and vocational skills based on which their enterprise will be established, and must also complete a course in small business management. The Bank of Bhutan and the Bhutan National Bank guarantee the loan and share the risks on a 60:40 basis. Under this scheme, successful applicants receive collateral free loans of up to Nu. 200,000 on establishment and an additional Nu. 100,000, if needed, after the business venture is established. The course intends to target small service and production sectors such as hairdressing, tailoring units, and photography.

11.7.3 Trade Policy

For a small country like Bhutan, international trade is very important to compensate for the limited domestic resources as well as to overcome the limitations of a small local market. As Bhutan is an import dependent economy there has been minimal compulsion to protect the domestic economy with import tariffs or quantitative restrictions. Due to the limited domestic market, the industrial sector has been largely export oriented. The domestic agriculture sector has also not lobbied for agriculture protection, typical in many countries, due to the scattered population and the dominance of small subsistence farmers.

The most important trade policy instrument employed by Bhutan is the bilateral Free Trade Agreement with India. Since India accounts for about 95 percent of Bhutan's export trade and over 80 percent of its import trade, this agreement ensures that Bhutan follows, by and large, an open economy policy. Bhutan also has a Preferential Trade Agreement (PTA) with Bangladesh, which is Bhutan's second largest export market. The PTA allows for various concessions on duties on a range of products under which Bangladeshi products are granted duty free access in the country while Bhutanese exports are imposed 50 percent of the normal duty in Bangladesh. Bhutan has expressed its intention to further liberalize trade with Bangladesh through negotiations for deeper reduction in tariff and elimination of non-tariff barriers and expansion of product coverage under the existing PTA (RGOB 2002b).

In the regional context, Bhutan is a member of the South Asian Preferential Trade Association (SAPTA). Bhutan also signed the South Asian Free Trade Agreement (SAFTA) in January 2004. SAFTA will work towards lowering import tariffs among SAARC member countries and broadening the scope for trade within the region. In 2004, Bhutan also became a member of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). At the multilateral level, Bhutan has applied for membership in the World Trade Organization in 1998, for which accession negotiations are currently taking place.

Trade with countries other than India used to be controlled rigidly by a quota system until the early 1990s. Since then, the quotas have been replaced by tariffs, as part of a move towards a more liberalized system. Currently, the tariff regime comprises of the Bhutan Sales Tax (BST) and the Customs Duty. The BST is imposed on all imports. However, in accordance with the Free Trade Agreement with India, the Indian exporters can claim the BST as a rebate against the Indian Sales Tax, hence nullifying the impact of BST on Indian imports. Moreover, import of raw materials is exempt from BST. The customs duty has seven slabs, ranging from zero percent to 100 percent. Customs duty is exempt on imports of industrial plant, machineries, their spare parts and raw materials if the final product has at least 40 percent value addition and/or the convertible currency earned by the company during the year covers at least the cost of the raw materials.

While Bhutan has liberalized its trade policy by replacing quantitative restrictions with tariffs and by entering into various bilateral, regional and international trade agreements, it has not tried to bring down the tariff rates unlike other liberalizing countries. On the contrary, the present sales taxes and customs duty were revised upwards by an average of 30 percent in September 2004. The stated rationale for the revision was mainly to “conserve hard currency” by discouraging imports from third countries as “most of the essential items were available in the domestic market or could be bought from India” (Kuensel 2004b). Customs duty and sales tax were also increased on items like plastic to discourage its use due to environmental concerns.

11.7.4 Foreign Direct Investment Policy

In December 2002, the government approved the Foreign Direct Investment (FDI) Policy with a view to foster private sector development, generate employment, enable transfer of capital, technology and skills and enhance convertible currency earnings. In the case of Bhutan, FDI is understood as investments made in convertible currency only (i.e., non-rupee investments). The foreign investor can hold up to 70 percent of the equity. Prior to the policy, limited foreign investment was allowed into the banking, tourism and industrial sector on a ‘case-by-case basis’.

The sectors open for foreign investment and the minimum investment therein are:

- Manufacturing (minimum investment of US\$1 million): mineral processing, agriculture and agro-processing, forest- and wood-based industry, livestock based industries, light engineering, engineering and power-intensive industries;
- Services (minimum investment of US\$0.5 million): tourism including hotels, transport services, roads and bridges, education, business infrastructure, information technology, financial services and housing.

The FDI Policy sets the broad parameters for foreign investors by delineating areas and size of investments; skills transfer requirements, and the need to comply with the Foreign Exchange Regulations. Section 7(a) relating to Foreign Exchange Regulations 1997 stipulates the following: foreign currency requirements for import of capital goods be met out of foreign equity, repatriation

of profits and dividends must be balanced by net foreign exchange earnings, and repayment for foreign currency loans shall be permitted subject to prior approval of the loan by the government (RGOB 2002c).

While the adoption of a FDI policy is significant, the policy is still conservative. This reflects the cautious approach of the government to ensure that local entrepreneurs are not unduly disadvantaged. Considering the small Bhutanese market and few comparative advantages that Bhutan offers it is unlikely that foreign investors will rush into Bhutan apart from limited sectors such as tourism and power-intensive industries. Not a single foreign investor has come into Bhutan since the adoption of the FDI policy in 2002.

Although FDI will be important to promote export-oriented industries, the structural and locational constraints place severe limitations on its success. While access to the vast Indian market, via Bhutan, would have been an attraction even a few years ago, the economic liberalization process underway in India makes such a move unnecessary today. Given the geographic realities, India will remain the most important market for Bhutanese products. The non-convertibility of the Indian rupee on the capital account will constrain potential foreign investors from investing in Bhutan.

11.7.5 Infrastructure Policy

In addition to the above incentives, the government has also taken measures to develop industrial estates. This has been done to overcome the difficulties of finding suitable land for establishing industries and also to benefit from the economies of scale related to clustering of industries. The following industrial estates have been planned and will be spread across the country:

- Singhigaon for the south-western region
- Chuwabari for the south-central region
- Tintibi for the central region
- Bodima for the northeastern region and Samdrup Jongkhar for the south-eastern region.
- Samdrup Jongkhar for south-eastern region

While most of the industrial estates are in the planning stage, Pasakha in Phuentsholing, has become operational, with about 34 proposals, of which some have been established.

The government has also started plans to establish dry port facilities in Phuentsholing and Gelephu. This will ease custom clearance formalities at ports in Kolkota and both imports and exports will reach faster and traders will save time and cost. The dry port will allow consignments to be transported directly between the seaport in Kolkota and the dry port in Phuentsholing, with the customs clearance done in Phuentsholing.

In 2005, the government began a feasibility study to link five places in Bhutan to nearby connection points in India. The study will look at the possibility of laying broad gauge links from Hashimara to Phuentsholing, a distance of about 18 km, from Kokrajar to Gelephu (70 km), from Pathshala to Nanglam (40 km), from Rangia to Samdrup Jongkhar (60 km), and from Banarhat to Samtse (16 km).

11.8 Summary and Conclusions

This chapter examined the prospects and constraints of the manufacturing sector and the tourism industry of Bhutan. The manufacturing sector includes three major groups: power-based industries, forest-based industries and agro-based industries. All three groups are highly capital-intensive and generate very little employment. However, the proportion of labour force engaged in industry (including hydropower) has increased in recent years—from 6 percent in 1998 to 10 percent in 2004.

As in most developing countries, the public sector has played a dominant role in the early days of industrialization of Bhutan. Since the late 1980s, however, there has been a decisive move towards gradual transfer of ownership and control to the private sector. This has in part taken the form of outright privatization, but in many instances it has led to corporatization of public enterprises, retaining some share of government ownership but granting a greater degree of management autonomy. Very recently, attempts have been made to attract foreign private investment as well.

In numerical terms, the majority of enterprises are in the private sector, but these are mostly small and cottage enterprises, accounting for only a small proportion of output. The public sector, defined broadly to include the corporations, still dominate the industrial scene in terms of output and value-added. Most of the large-scale private firms are those that have been privatized before. Independent growth of large-scale private enterprise is still a rarity in Bhutan.

The manufacturing sector is dominated by power-intensive industries that engage in processing raw minerals. These industries enjoy access to domestic mineral sources and cheap and reliable electricity. The main minerals found in Bhutan are coal, dolomite, gypsum and limestone. Dolomite, gypsum and limestone are used as input for the large mineral-based industries such as cement, ferro silicon, calcium carbide, plaster of Paris etc. Most of these industries were established in anticipation of, or after, the commissioning of the Chhukha Hydropower Project in 1988.

The wood-based industries form the single largest group of production and manufacturing industries comprising 46 percent of total number of industries. The firms are all privately owned. The comparative advantage of these industries lies in the availability of cheap timber at prices ranging from US\$65 per m³ to US\$102 per m³ compared to the international prices ranging from US\$126 per m³ to US\$238 per m³.

Agro-based industries constitute an increasingly important component of Bhutan's industrial scene. There are 126 licensed agro-processing industries, of which by far the largest two are Bhutan Fruit Products Limited and Bhutan Agro Industries Limited.

All these industries are export-oriented in varying degrees, with India being the biggest market, although a substantial amount of agro-products are exported to Bangladesh as well. A Free Trade Agreement with India and Preferential Trade Agreement with Bangladesh have greatly facilitated the growth of manufacturing industries. Their main advantage, however, lies in the access to domestic raw materials, derived from plentiful natural resources, bolstered by access to generously subsidized electricity.

The industries also face a range of constraints. Apart from the usual constraints of shortage of skill, technology and capital that afflict the industry of most developing countries, Bhutan faces a few additional constraints, the most serious of which is its combination of small domestic market with landlockedness. This combination implies that the industries of Bhutan cannot aspire for either inward orientation or outward orientation (beyond India) on a large scale. Two other problems that are currently restricting their growth is environmental restrictions on the supply of natural resources (timber, for instance) and a shortage of convertible currency that limits the inflow of necessary capital goods and technology. Lack of convertible currency would appear to be the most limiting constraint to industrial development in Bhutan at present.

In this context, the tourism industry assumes special significance, because it is currently the biggest earner of convertible currency in Bhutan. This industry has been fully privatized in order to bolster competition and upgrade the quality of service.

The biggest constraint facing the tourism industry is the administered pricing system that requires the tour operators to charge a minimum daily rate, which is quite high and a substantial part of which goes to the government coffers. This pricing policy is intended to serve the 'high-value, low-volume' tourism policy adopted by the government, but it limits the incentives for the tour operators to compete and upgrade services. The need to use integrated packages also confines the spillover effects of the industry to a few hotels and restaurants and has little impact on the local or rural economy, even if tourists visit villages and go on treks.

In view of Bhutan's pressing need to ease the hard currency constraint, the restrictive policy towards tourism needs to be reviewed urgently. As in most other cases (such as the timber- and wood-based industry) where the government of Bhutan has adopted a restrictive policy, the principal reason behind restrictions is a concern for the environment. But as this report argues (see Chapter 12), in order to move towards a future in which the economy's demands on the environment would be minimized, Bhutan must invest in skill and technology that would require a much greater access to hard currency. And this hard currency will have to be earned through a more vigorous approach towards tourism as well as greater export of natural resource based products. This implies an inter-temporal trade-off—in order to have an environment-friendly future it may be necessary to make some compromises with environmental concerns at present.

CHAPTER 12

TOWARD A PRO-POOR DEVELOPMENT STRATEGY FOR BHUTAN

12.1 The Setting

The welfare state of Bhutan has taken good care of its people and met their basic needs over the last few decades. Yet, income poverty remains a serious problem for nearly one third of the population who live mostly in rural areas. Poverty in Bhutan, however, is not primarily a problem of people not finding jobs but a problem of people working in activities that do not reward them enough. Any pro-poor development strategy for Bhutan must, therefore, aim in the first instance at raising the productivity of poor people living on agriculture. In view of the limited absorptive capacity of agriculture, the strategy must also aim at transferring as many poor people as possible to productive activities outside agriculture.

Elaboration of this two-pronged development strategy will have to be guided by both an overarching philosophy as well as some objective constraints that are specific to Bhutan. The philosophy is enshrined in the distinctive approach to development that the King of Bhutan enunciated under the rubric of gross national happiness (GNH). In essence, this philosophy maintains that while the pursuit of material prosperity is a legitimate goal of any society, this pursuit must be circumscribed by other considerations that are also valuable to the society. In particular, the approach to development must seek to ensure the following four conditions: (i) an equitable and regionally balanced development, (ii) sustainable environment, (iii) maintenance of spiritual and cultural values, and (iv) good governance. These four conditions are the four operational components of the GNH philosophy. Any pro-poor development strategy for Bhutan must be consistent with these four components.

The development strategy must also conform to two objective constraints that limit the options open to Bhutan. These constraints are the demography and the geography of Bhutan.

The demographic constraint emerges from the small size of its population. With a population of just over half a million, Bhutan is one of the smallest economies in the world. While most other countries of South Asia suffer from an excess of population relative to resources, Bhutan faces the opposite problem. There are two economic implications of small population that are relevant in designing any development strategy.

First, a small population means a small domestic market for producers of goods and services. The problem caused by a small domestic market has exercised economists since the time of Adam Smith, the founder of modern economics. A small market limits the scope for specialization and makes it hard to reap the benefits of economies of scale, without which sustained productivity growth cannot be achieved.

Second, small populations also mean a small labour force. All economic activities depend on the use of labour power and there are worrying signs that scarcity of labour is already beginning to limit the scope of production in different sectors of the Bhutanese economy, especially agriculture. In other sectors such as hydropower, construction and, to a limited extent, manufacturing, the problem of labour shortage has been circumvented to some extent by the use of cheap Indian labour. While it makes good economic sense to use cheaper labour from elsewhere, when domestic labour is in short supply, there are political and cultural limits to how far an economy can be propped up by foreign labour. There are indications that Bhutan is close to reaching those limits. It is, therefore, quite likely that at least in quantitative terms, a shortage of labour will remain a persistent feature of the Bhutanese economy.

The geographical constraint has two dimensions—one internal and one external. The internal constraint arises from the fact that the limited population of Bhutan is scattered over a large mountainous terrain. The result is low density of population combined with lack of accessibility. This is a pernicious combination for the following reasons: firstly, transportation adds enormously to the cost of production; secondly, the provision of any kind of services to the people becomes hugely expensive; and thirdly, setting up any local-level enterprise becomes uneconomic as it is difficult to reach a reasonable scale of production.

The external constraint emerges from the fact that Bhutan is a landlocked country, surrounded by two giant neighbours, India and China. Friendly relations with India has enabled Bhutan to circumvent the problem to some extent by using India both as a market and a source of technology, capital as well a source of various consumer and intermediate goods. However, reaching out to the wider world remains a major problem. Moreover, political realities inhibit the prospect of taking advantage of China's presence as a big and resourceful neighbour in the same way that India's presence has been made use of.

The formulation of any development strategy for Bhutan will have to be cognizant of these multifarious constraints imposed by its demography and geography. Not all implications of these constraints are immutable. For instance, shortage of labour can be mitigated to some extent by use of cheaper labour from India. Similarly, the problem of landlockedness could be mitigated somewhat if political developments allowed Bhutan to have easy access to ports in India and Bangladesh. In a large measure, however, the impact of these constraints will remain with Bhutan for the foreseeable future.

Finally, a development strategy for Bhutan will have to be cognizant of the far-reaching political changes that are going to take place with the introduction of multi-party democracy under the framework of constitutional monarchy. The reign of absolute monarchy over the last few decades has bestowed unto Bhutan a hallowed tradition of compassionate governance, offering the country a degree of stability and sense of direction that is rare among the developing countries. The new era will not necessarily throw away that tradition, but politicking for power within a multi-party democracy has its own logic and its own compulsions. What kind of development strategy will work best in the context of Bhutan will depend a great deal, not just on pure economic logic, but also on the political economic implications of the strategy.

12.2 The Need for a Two-Stage Strategy

A pro-poor development strategy for Bhutan that is respectful of the GNH philosophy and cognizant of the constraints emanating from its demography and geography must be conceived of in two stages: a long-term strategy and a transitional strategy. The long-term strategy should focus on the kind of economy Bhutan would ideally like to become in future. The transitional strategy is about how to get as close to the long-term strategy as feasible and as soon as possible. The long-term strategy is more of a vision, and the transitional strategy is more of an operation tool for realizing that vision.

The essentials of the long-term strategy can be summarized as follows:

An outward-oriented development strategy that relies on exporting low-volume high-value goods and services based on skilled manpower and modern technology, in return for imports of most consumer goods, except for some basic foodstuff.

The virtue of this strategy is that it is perhaps the only pro-poor strategy that is fully respectful of the demands of GNH philosophy on the one hand and consistent with Bhutan's demographic and geographical constraints on the other. The pro-poor nature of this strategy lies in the fact that it attacks directly the problem of low productivity of labour, which, as argued before, lies at the root of poverty in Bhutan. Specialization in high-value products using skilled manpower and modern technology is bound to raise the productivity of labour, helping the poor to escape poverty.

To see how this strategy is respectful of the GNH philosophy, consider its implication for the different components of the GNH approach. First, the strategy is inherently equitable because given the small size of the population, almost all of it can be turned into skilled human capital (over time), so that everyone will be able to benefit from the growth of productivity. Second, since this strategy will rely more on human skill and modern technology than on intensive use of natural resources, it is also likely to be environmentally friendly. Third, it has the potential to be culturally more sensitive than some other possible alternatives, such as excessive reliance on tourism, which many other small countries around the world have tended to adopt as the preferred route to material prosperity. Fourth, being an outward-oriented strategy, it is more likely to promote good governance compared to inward-oriented strategies, which are typically beset with rent-seeking activities that tend to erode the foundations of good governance.

The strategy is also fully consistent with the constraints of demography and geography. First, it overcomes the constraint of a limited home market caused by small population. It does this by gearing production towards the world market rather than the home market, and obviates the problem of small manpower by relying on the quality rather than the quantity of labour. Secondly, it overcomes the geographical constraint of transportation barriers within home and abroad by concentrating on low-volume, high-value products.

Exactly what those high-value, low-volume products would be cannot be predicted at this stage. But the theory and history of specialization suggest two general points worth bearing in mind. First, which particular products a country will successfully specialize in is often an accident of history. A country may come to dominate a particular market for the simple reason that for some historical reasons it came to that market first. This is especially true for products involving substantial economies of scale or requiring intensive learning-by-doing. Second, although a country cannot typically aim at a particular pattern of specialization in the distant future, it can equip itself to take advantage of emerging opportunities by acquiring general capabilities of skill and technology. The objective of policy should, therefore, be to develop those general capabilities rather than to aim at a particular pattern of specialization from the very beginning. One of the aims of the transitional strategy should be to develop those capabilities.

12.3 Elements of the Transitional Strategy

The long-term strategy can only be put into effect once Bhutan has built up the necessary skill and technological base. This is inevitably going to take time. Meanwhile, a transitional strategy will have to be pursued, with two objectives in view:

- Building the skill and technological base necessary for the transition into a long-term strategy.
- Devising alternative means of improving the livelihood of the poor during the transition period in a way that is as consistent as possible with the GNH philosophy and the constraints of demography and geography.

It should be understood, however, that the transitional strategy is unlikely to be entirely consistent with the goal of GNH and the constraints of demography and geography—at least not as completely consistent as the long-term strategy would be. For if it were, there would be no need to make a distinction between transitional and long-term strategies—the so-called transitional strategy could have been maintained in the long term as well.

This means that, unlike the long-term strategy, the transitional strategy may involve certain tensions with the long-term objectives and constraints—leading to trade-offs of various kinds. Identification of these trade-offs and figuring out how best to handle them, while moving as quickly as possible towards the long-term strategy, is the major developmental challenge facing Bhutan today.

But the first task is to identify the major components of an acceptable transitional strategy. This task is perhaps best accomplished by employing the method of exclusion—by considering possible

alternative strategies and then choosing the one that appears to be most consistent with Bhutan's goals and constraints. The choice will be based on how well the strategies being considered address three well-known constraints to development—namely, the demand constraint, the wage-goods constraint and the foreign exchange constraint—in the specific context of Bhutan.

The demand constraint refers to the idea that consumers must demand whatever goods and services the producers plan to produce, otherwise the planned production will not be profitable and hence will not materialize. This constraint may exist as much for specific products as for total output as a whole. The latter aspect is especially important in the context of growth, because growth will suffer if there is not enough demand to absorb the total output that is being produced.

The wage-goods constraint refers to the availability of the so-called wage-goods, that is to say, foodstuff and other essential goods that wage earners spend most of their money on. If the demand for labour rises but the availability of wage-goods does not rise *pari passu*, then the prices of these goods will shoot up. This could constrain growth in two possible ways. First, the employers might have to offer increasingly higher wages, unrelated to productivity increase, simply to maintain the workers' standard of living in terms of real purchasing power. In that case, profits will be squeezed, the funds as well as the incentive for investment will dwindle, and growth will suffer. Alternatively, the government may be so concerned at the rising prices of essential commodities that they would be tempted to adopt strict anti-inflationary policy that will depress the economy and stifle growth.

The foreign exchange constraint is a bit more subtle. Since no country produces everything it needs, it has to import goods and services from abroad. Typically, if it aims to grow faster, its imports also rise faster, and so does the demand for foreign exchange. If the required amount of foreign exchange is not forthcoming, growth will suffer. In principle, this should not happen, because any amount of foreign exchange can be obtained simply by saving more national output and exporting it abroad. But the problem is that even if a nation is willing to save more, it may find it difficult to convert the savings into exportable goods and services. In that case, a foreign exchange constraint will be blamed for hampering growth. In the context of Bhutan, the foreign exchange constraint needs to be split up into two components—the Indian rupee component and the hard currency component, because even though both of them count as foreign exchange the inconvertibility of the rupee makes the two components non-substitutable. In particular, a surfeit of rupees will be of no help if Bhutan needs more hard currencies when they are in short supply, because rupees cannot be converted into hard currency.

We shall now examine three alternative transitional strategies in light of how well they address these three general constraints. We will also consider the constraints of demography and geography that are specific to Bhutan. All three strategies have been pursued by some group or another of developing countries as a means of transforming traditional backward economies into modern industrial economies.

1. Agriculture-led development strategy: This has traditionally been the favourite strategy among development economists for initiating a process of equitable growth in countries at a low level

of development. The idea is that since the majority of the poor people live in rural areas, the process of development must start there. Once agriculture develops making farmers prosperous, the rest of the economy will also benefit through various kinds of linkages, paving the way for the eventual transfer of labour from agriculture to modern industry and services.

In general, this can potentially address both demand constraint and wage-good constraint not to mention, to some extent, the foreign exchange constraint. The demand constraint can be eased when the majority of the people, who live in rural areas, enjoy increasing purchasing power through broad-based agricultural development. The wage-goods constraint will obviously be eased because an agriculture-led growth strategy will enhance the production of basic foodstuff. The foreign exchange constraint can also be eased to some extent by exporting agricultural goods abroad.

These arguments do not, however, apply with the same force in Bhutan as they do in many other developing countries, specifically other countries in South Asia. In the first place, the strategy will fail to solve the demand constraint because a small population base inevitably leads to a small purchasing power. By the same token the strategy will also fail to solve the foreign exchange constraint because of geographical barriers. The wage-goods constraint can obviously be eased, but as the discussion in Chapter 4 shows, the strategy of providing an expanding basket of wage goods through domestic agriculture can conflict with environmental concerns. For reasons to be explained below, agriculture will still have to play an important role in the transitional strategy, but it cannot be the engine of growth.

2. Labour-intensive export-oriented strategy: This has turned out to be the most favourite strategy of development in the age of globalization. The idea is to specialize in the export of goods that can be sold cheaply in the world market by producing them with a lot of cheap labour, which many developing countries have in plenty. Potentially, it can solve all three constraints of demand, wage goods and foreign exchange. It can solve the demand constraint, because it relies on a vast world market rather than a small home market; wage goods constraint, because foodstuff can be imported in exchange for exported goods; and foreign exchange constraint, because an export-oriented strategy is obviously best equipped to maximize the earnings of foreign exchange.

Additionally, it can also be more environmentally friendly than an agriculture-led development strategy by making less demand on natural resources, which is an important consideration in the context of Bhutan. But the fundamental problem in this context is the constraint of limited manpower. Bhutan is not a typical labour-abundant poor country, and hence growing through exporting labour-intensive goods is not an option.

3. Natural resource based export-oriented strategy: Several developing countries, especially those rich in oil, have chosen to pursue this strategy. And some of them, like Indonesia, have made very good use of it, while others, like Nigeria, have failed to do so. Like the labour-intensive export strategy discussed earlier, it too can potentially address all three general constraints to development and for the same reasons. It remains to be seen how well it can address the specific constraints facing Bhutan.

Bhutan is actually already pursuing a natural resource based development strategy. Four categories of resource-based export items are relevant for Bhutan: hydropower, forest products, niche agricultural products, and tourism (the last one can be seen as a natural resource based service industry).

As the discussion in Chapters 4-6 and 8 has demonstrated, there is great potential for harnessing each of these natural resources—especially hydropower, but also forestry and tourism. The current policy stance in Bhutan accords much more emphasis on hydropower than on the other three categories of resource-based export items. The time has come to re-examine this stance. The current imbalance would not have mattered if ‘hydropower’ and ‘others’ were substitutes of each other in terms of their effect on development, but that is not the case. In fact, they can be seen to address two different constraints to development—namely the wage-goods constraint and the foreign exchange constraint.

Most of the government revenue earned from the sale of hydropower has been used to maintain high levels of social expenditure or used for infrastructure, which is essential for balanced regional development. Most of the rupee earnings are used to import consumer goods, including essential foodstuff. Without this import, the social expenditure as well as construction and other activities spurred by hydropower development would have faced serious problems due to the wage-goods constraint. It is this softening of the wage-goods that has perhaps been the major contribution of hydropower in Bhutan—in the context of stimulating short-run economic growth, as distinct from contributing to human development. Quite clearly, hydropower will have to be developed even further in order to meet the increasing demand for wage goods that would inevitably arise in the future.

However, hydropower will not solve Bhutan’s foreign exchange constraint—in particular the hard currency component of this constraint. For both geographical and political reasons, Bhutan has so far not been able to sell its hydropower to countries other than India—even though potential markets exist in Bangladesh, and at a stretch even in China. It has thus made no direct contribution to the earning of hard currency, and it is unlikely to do so in the short-to-medium term.

The resulting lack of foreign exchange, in the form of hard currency, is already holding back development in a number of ways. The problems it is creating include:

- a) forcing the central bank to lock up a huge amount of resources in terms of reserves, because the Royal Monetary Authority is worried that the tiny annual inflow of hard currency will not be able to meet unforeseen contingencies;
- b) creating pressure for exchange control, with attendant inefficiencies of administered allocation of scarce resources;
- c) limiting the absorptive capacity of Bhutan to receive foreign aid from sources other than India since the loans will have to be serviced in hard currency;
- d) stunting the growth of the private sector, by starving it of essential intermediate and capital goods’ and
- e) discouraging FDI by severely limiting the scope for repatriation of profits.

It is arguable that hard currency constraint is at present the binding constraint facing Bhutan in its quest for economic development.⁸⁷ The problem might be eased to some extent over time as the Indian economy develops and diversifies enough to provide most of what Bhutan needs to import with hard currency—not just consumer goods, but also intermediate and capital goods—and/or when the Indian currency itself becomes fully convertible. In that event, rupee earnings will be able to do what hard currency is meant to do. However, there is no immediate prospect of this happening. In any case, it is neither economically efficient nor politically wise to be trade-dependent exclusively on one country. Bhutan must try to widen its options of meeting the foreign currency constraint. Since hydropower is unlikely to help achieve this goal to any significant extent in the short-to-medium term, greater emphasis must be placed on promoting alternative resource-based activities such as forest products, niche agricultural products and tourism.⁸⁸ In short, we are arguing that while Bhutan should continue to pursue a natural resource based strategy in the transitional period, it needs to consider a shift of emphasis within the strategy, by tilting the balance towards natural resources other than hydropower.

12.4 Hard Choices in the Transitional Strategy

The pursuit of a natural resource based development strategy has both advantages and potential pitfalls. Both sets of issues need to be considered carefully before coming to a judgement about their desirability for Bhutan. The potential pitfalls will be discussed first below, followed by arguments that the advantages outweigh the pitfalls. However, the policy makers of Bhutan will have to make hard choices in implementing this strategy. The nature of those choices will also be discussed.

There are several potential pitfalls in pursuing a natural resource based export-oriented strategy, as has been experienced by a number of countries—both developed and developing. These pitfalls have been considerable enough to raise the question as to whether possession of natural resources is a curse rather than a boon. At least, three potential dangers need to be considered in the context of Bhutan.

12.4.1 Potential Dangers

Dutch disease

A common danger of relying excessively on the export of a natural resource is that it might stifle other economic activities, especially export-oriented manufacturing activities, and thereby inhibit the modernization of an economy—a phenomenon that has come to be known as the ‘Dutch disease’. There are several mechanisms through which this might happen. The essential point is that one way or the other the surfeit of export earnings generated by a natural resource might cause the real exchange rate to appreciate, that is to say, make the non-tradables more expensive relative to tradables. In that event, resources will be diverted towards the production of non-tradables, starving the tradable activities, such as manufacturing, of essential resources.

⁸⁷ See Chapters 4 and 11 for a fuller discussion of these issues.

⁸⁸ Detailed recommendations on each of these categories have been made in Chapters 8-11.

There has been much discussion in Bhutan on whether the country's excessive reliance on the export of hydropower has been creating the tendency towards the 'Dutch disease.' In the absence of reliable time series data on the movement of real exchange rate, it is difficult to be definitive about this. But there are a number of a priori reasons for doubting that it could be a serious problem in Bhutan.⁸⁹

First, exports other than those based on natural resources are unlikely to be of significant proportions in the short to medium term, and, therefore, any export-dampening effect resulting from potential appreciation of the real exchange rate would be minimal.

Second, any potential resource diversion effect from tradables to non-tradables would be mitigated by the fact that the major non-tradable goods and services—such as housing, health and education, and utilities such as electricity—are mostly in the public sector and/or receive considerable subsidies. The normal mechanism of resource reallocation through the mediation of market incentives would not apply in these cases.

Third, insofar as the investible funds generated by natural resources are utilized carefully to upgrade the skill and technological base of manufacturing activities, the strategy might actually lay the foundations for making the transition to a modern economy rather than inhibiting that transition.

Rent-seeking activities

Potentially damaging rent-seeking activities are quite common in most countries that are heavily dependent on the export of natural resources. Natural resources typically fetch a price that is far higher than the cost of production. The gap, which is variously described as rent or windfall, creates an opportunity for easy enrichment for those who control the resource. Corruption is often the consequence of this opportunity.

Bhutan has so far avoided this pitfall, but the potential danger remains. This problem is tied up with the issue of good governance, which is one of the components of the GNH approach. In consonance with its commitment to GNH, Bhutan has built up a reputation for good governance under the watchful guidance of the king. Insofar as the policy makers of Bhutan continue to take the GNH philosophy seriously, it can be reasonably expected that rent-seeking activities surrounding the use of natural resources will be fended off.

In this context, a question naturally arises concerning the implications of the impending constitutional reform ushering in multi-party democracy within the framework of constitutional monarchy. Will the tradition of good governance survive the tensions of multi-party democracy? It is impossible to answer this question in a definitive manner. The case can be argued either way on purely a priori grounds. On the one hand, the competition for power might generate pressures for patronage distribution, thereby fostering rent-seeking activities and eroding the foundations of good governance. In this scenario, the pursuit of a natural resource based development strategy might aggravate the problem of governance by expanding the scope for rent-seeking activities.

⁸⁹ See Annex 5 for a more detailed discussion of the dangers of Dutch disease in Bhutan.

On the other hand, the checks and balances that have been built into the Constitution to prevent the abuse of power, coupled with the tradition of good governance that has been built up over the years, might well ensure that good governance continues to thrive in the new era. In that case, rent-seeking would not pose a serious danger. One can only hope that the latter scenario prevails.

Possible tensions with the GNH approach

The potential threat to good governance is one possible source of tension between a natural resource based development strategy and the GNH approach, but it is not the only one. Other components of GNH, such as respect for the environment and cultural values, might also be compromised to some extent. This is especially true for activities using resources other than hydropower, that is to say, forest products, niche agricultural products, and tourism.

Extensive use of forest resources might degrade the environment by setting off an irreversible process of deforestation. Heavy investment in niche agricultural products might likewise cause serious damage to Bhutan's fragile ecology. Rapid expansion of the tourism industry could endanger both the environment and cultural distinctiveness of Bhutan. Even hydropower is not completely without blemish. Even though it is one of the cleanest forms of energy, the process of harnessing this energy by clearing forests and building dams could cause serious environmental damage.

Fortunately, detailed analysis shows that Bhutan can still go a long way towards developing each of the four categories of natural resources before the conflict with GNH components becomes serious.⁹⁰ To take just one example, while the new constitution stipulates that at least 60 percent of the land must remain permanently under forest cover for the sake of environmental sustainability, the extent of forest cover at present is 72 percent and probably rising. There is obviously enough scope of expanding the export of forest products without jeopardizing environmental sustainability. Similar arguments can be made for each of the other categories of natural resources. There is no doubt, however, that there is a limit to how far exploitation of natural resources can proceed with entailing conflicts with some of the components of GNH.

Turning now to the positive side, there are at least two good reasons why Bhutan ought to pursue the natural resource based growth strategy more vigorously in the short to medium term. The first has to do with shortening the transition to the long-run strategy described earlier and the second with ensuring a sustainable livelihood for the poor during the transition period.

12.4.2 Shortening the Transition to the Long-Term Strategy

The long run strategy of exporting high-value, low-volume products based on skilled manpower and sophisticated technology calls for acquisition of skills and development of the technological base. Before the long-term strategy can be put into place, Bhutan will have to invest first in the acquisition of skills and technology, and such investments would invariably involve a significant foreign exchange component.

⁹⁰ Detailed analysis along these lines can be found in Chapters 8-11.

For example, in order to build the skill and technology base it would be necessary to attract FDI that will help in the process of technology transfer. But FDI will not come to Bhutan unless it is offered attractive repatriation opportunities, which in turn will make strong demands on foreign exchange. To take another example, it may be necessary to send an increasing number of graduates abroad (not just to India) to acquire highly sophisticated technological skills, since setting up technical and engineering universities may not be feasible in Bhutan given the small numbers involved. All this will make a much greater demand on hard currency foreign exchange than before.

What all this means is that preparing for the long term strategy is likely to accentuate the existing foreign exchange constraint. How quickly the transition occurs would depend on how well the hard currency component of the foreign exchange constraint is softened. But, as argued before, softening the hard currency constraint will require much more vigorous pursuit of activities based on natural resources other than hydropower, for example niche agricultural products, forest-based products and tourism. Hence the recommendation for tilting the balance towards these natural resource based activities as the essential feature of the transitional strategy.

This will of course entail trade-offs with some of the GNH goals, as noted before. It is important to note here that unless these trade-offs are accepted now, it will be more difficult to complete the transition to the long-run strategy, which is much more consistent with GNH. In other words, what is involved here is an inter-temporal trade-off. Greater willingness to accept the trade-offs now will hasten the stage where the goals of GNH can be achieved more easily, whereas trying to stick too closely with GNH goals now would delay that stage. To put it bluntly, the trade-off is between more GNH now or more GNH in the future.

12.4.3 Ensuring Sustainable Livelihood During the Transition Period

When nearly one third of the population live under the poverty line, one cannot wait for the long-term strategy to eventually come to the rescue of the poor. Efforts must be made to help the poor move out of poverty during the transitional period itself, even as the country prepares itself for the long-term strategy. Any transitional strategy should, therefore, aim not only at laying the foundations for the long-term strategy but also for providing productive employment for the poor. The hydropower-based development strategy pursued by Bhutan so far has failed to achieve that goal. The resources generated by hydropower have been utilized to develop a highly commendable welfare state, but it has not contributed substantially to creating sustainable employment opportunities for any significant number of people. The hydropower sector itself is not labour-intensive; the construction activities it has spawned do create employment, but mostly for cheap Indian labour.

It can be argued that to the extent the surplus generated by hydropower is invested in infrastructure, and is made available for the importation of essential machinery and intermediate goods, it does help create the conditions in which other types of employment-generating activities can flourish. But it is equally true that those other activities will not come automatically—they have not so far. The government will have to take proactive measures to foster them. The first task is to identify

the sectors that can potentially generate more productive employment opportunities in the transitional period until the skill and technology based high-value low-volume economy emerges in the long run. As one looks around the economy, it becomes evident that productive employment opportunities must be found in agriculture, as well as forest-based and agro-based industries and tourism-related activities. These are also precisely the sectors which were identified earlier as lying at the core of the transitional strategy that was needed to overcome the binding foreign exchange constraint confronting the Bhutanese economy today. In short, the transitional strategy that is being recommended here as the stepping stone to the long-term strategy is also the one that will help expand livelihood opportunities for the poor in the interim.

As noted earlier, vigorous pursuit of the transitional strategy will certainly call for some degree of compromise with environmental and cultural components of GNH. It is important to realize that this compromise is necessary in order to promote yet another component of GNH—most specifically equitable development—because without creating productive employment opportunities for the poor it is not possible to generate equitable development. What one confronts here is a trade-off between different components of the GNH approach; in other words equitable development versus environmental and cultural concerns. This is not to say that these components of GNH are inherently incompatible with each other. Indeed, one can readily think of instances where they will be complementary to each other. For instance, preserving the environment can enhance the livelihood prospects of the poor who depend crucially on the use of environmental resources for eking out their livelihood. The point being made here is that there can be elements of both (complementarity and trade-offs between different components of the GNH approach) and that the pursuit of the transitional strategy being recommended here may accentuate some of the trade-offs.

To summarize, the pursuit of the transitional strategy will involve two types of trade-offs. There is a contemporaneous trade-off between equitable development and other components of GNH, and there is an inter-temporal trade-off between GNH now and GNH in future.

How to evaluate these trade-offs and how exactly to balance the competing demands is for the Bhutanese people to decide. The emerging era of multi-party democracy will make it more complicated to arrive at these trade-offs, but it will also hopefully enable the country to better ground its decisions on the choices and aspirations of the people at large.

REFERENCES

- ADB (1999), Key Indicators 1999, Asian Development Bank: Manila.
- ADB (2000), Key Indicators 2000, Asian Development Bank: Manila.
- ADB (2002), Bhutan Financial Sector Review, Asian Development Bank: Manila.
- ADB (2005a), Key Indicators 2005, Asian Development Bank: Manila.
- ADB (2005b), Debt Sustainability in Bhutan, Asian Development Bank: Manila.
- ADC (undated), Support of Rural Energy, Hydropower Generation and Capacity Building 2005-2007, Austrian Development Cooperation: Vienna.
- Audinet, P. (2002), Electricity Prices in India, Energy Prices and Taxes 2nd Quarter 2002: International Energy Agency: Vienna.
- Chetri, S. (2005), 'Microfinance Expansion in Bhutan: Towards Poverty Alleviation', Thimphu.
- Choden, D. and K. Namgay (1996) Report on the Findings and Recommendations of the Wild Boar Survey. Thimphu
- Corden, W. M. (1984), 'Booming Sector and Dutch Disease Economics: Survey and Consolidation', Oxford Economic Papers, 36, December: 359-380.
- Corden, W. M., and J. P. Neary (1982), 'Booming Sector and De-industrialisation in a Small Open Economy', Economic Journal, 92: 825-848.
- CSO (1996), Industrial Statistics 1982-1995, Central Statistical Organization, Planning Commission, Royal Government of Bhutan: Thimphu.
- CSO (1999), National Labour Force Survey 1998 and 1999, Central Statistical Organization and Royal Civil Service Commission, Royal Government of Bhutan: Thimphu.
- CSO (2001), Pilot Household Income and Expenditure Survey 2000, Central Statistical, Organization, Royal Government of Bhutan: Thimphu.
- Deb, U. K (2004), 'Global Trade Negotiations, Liberalization and Agriculture: Country Case Study—Bhutan', (mimeo.) UNDP Asia-Pacific Regional Initiative on Trade, Economic Governance and

Human Development.

Dema, E. (2005), 'Micro-credit and Savings in Bhutan: A Regulatory Perspective', paper presented during the Launch of the International Year of Microcredit 2005 and Rural Savings Program of BDFC, 5 April, Thimphu.

DOE (2001), National Labour Force Survey 2001, Department of Employment, Ministry of Labour and Human Resources, Royal Government of Bhutan: Thimphu.

DOE (2003), National Labour Force Survey 2003, Department of Employment, Ministry of Labour and Human Resources, Royal Government of Bhutan: Thimphu.

DOE (2004), National Labour Force Survey 2004, Department of Employment, Ministry of Labour and Human Resources, Royal Government of Bhutan: Thimphu.

DOF (2004), Forest Resources Potential Assessment for Bhutan, Department of Forestry, Royal Government of Bhutan: Thimphu.

DOP (2004), Poverty Reduction Strategy Paper: A Cover Note to the Ninth Plan Main Document, Department of Planning, Ministry of Finance: Thimphu.

Dorjee, K. (1995), 'An Analysis of Comparative Advantage and Development Policy Options in Bhutanese Agriculture', Swiss Federal Institute of Technology: Zurich.

Dorji, T. (undated), 'Land Tenure System and Impact on Rural Development in Bhutan.' (mimeo.) UNDP Country Office: Thimphu.

DOT (2004), International Tourism Monitor #1, December, Department of Tourism, Royal Government of Bhutan: Thimphu.

FAO (1998), Wood Production and Marketing in Bhutan, Food and Agriculture Organization: Rome.

FAO (1999a), AQUASTAT—FAO's Information System on Water and Agriculture, Food and Agriculture Organization: Rome.

FAO (1999b), Forest Resource of Bhutan: Country Report, Food and Agriculture Organization: Rome.

FRDD (2004), Forest Resources Potential Assessment (FRPA) for Bhutan, Forest Resources Development Division, Ministry of Agriculture, in collaboration with Bhutan-German Sustainable RNR Development Project: Thimphu.

Giri, S. (2004), The Vital Link: Monpas and Their Forests, Centre for Bhutan Studies: Thimphu.

Gyawali, D. and A. Dixit (2000), 'How Not to do a South Asian Treaty', Himal South Asia. Retrieved from <http://www.himalmag.com/apr2001/essay1.html>

ICHD (2001), Hydropower Development in India. International Centre for Hydropower Development. (http://www.ich.no/hrdm2001/fact_india.htm)

IFAD (2003), Bhutan: First Eastern Zone Agricultural Project. Interim Evaluation. International Fund for Agricultural Development: Rome.

IFC/BCCI (2005), Supply Chain Study for Timber and Wood Products in Bhutan, International Finance Corporation and Bhutan Chamber of Commerce and Industry: Thimphu.

IMF (2005), 2005 Article IV Consultation with Bhutan, Public Information Notice 05/91, 18 July, International Monetary Fund: Washington, D. C.

IRRI (2002), Bhutan-IRRI Project: Local Tradition Meets Modern Know-How, International Rice Research Institute: Manila. Retrieved from www.irri.org/publications/irrn/pdfs/vol27no1/irrn27-1mini.pdf

ITC (2000), Bhutan Export Strategy (Draft Report), International Trade Centre, UNCTAD/WTO.

Karmacharya, J. L. (2002), 'Regional Power Trade—Nepal Prospect and Opportunities', paper

presented at the Conference on Nepal Power Sector Reform, 18-19 April, South Asia Regional Initiative for Energy (SARI): Kathmandu.

Kuensel (2002), 'Environmental Conservation should not Hamper Farmers', 4 August, Kuensel: Thimphu.

Kuensel (2004a), 'Conservation or Livelihood?', 18 March, Kuensel: Thimphu.

Kuensel (2004b), 'Government Revises Customs Duty and Sales Taxes', 28 August, Kuensel: Thimphu.

Kuensel (2005a), 'Cattle Migration Declining', 28 February, Kuensel: Thimphu.

Kuensel (2005b), 'Fire destroys over 2511 acres of forest in 2003-04', 24 January, Kuensel: Thimphu.

Kuensel (2005c), 'High end resorts help tourism market', 15 April, Kuensel: Thimphu.

McMillan, J. and C. Woodruff (2002), 'The Central Role of Entrepreneurs in Transition Economies', *Journal of Economic Perspectives*, 16 (3), Summer: 153-170.

MIC (2003), *Information and Communications Technology (ICT) for Bhutan: A White Paper*, Ministry of Information and Communications, Royal Government of Bhutan: Thimphu.

MOA (1995a), *Basic Data Arrangement on Agriculture in Bhutan*, Research, Extension and Irrigation Division, Ministry of Agriculture, Royal Government of Bhutan: Thimphu.

MOA (1995b), *Horticulture Development Policy and Strategy for the Eighth Five Year Plan*, Ministry of Agriculture, Royal Government of Bhutan: Thimphu.

MOA (1997), *Atlas of Bhutan 1997*, Ministry of Agriculture, Royal Government of Bhutan: Thimphu.

MOA (2001), *Management and Use of Farm yard Manure in the Lingmuthey Chhu Watershed: Results from Household Survey*, National Soil Service Centre, Ministry of Agriculture, Royal Government of Bhutan: Semtokha.

MOA (2002a), *Renewable Natural Resources Sector 9th Five Year Plan*, Ministry of Agriculture, Royal Government of Bhutan: Thimphu.

MOA (2002b), *Renewable Natural Resources Statistics 2000, Volume 1*, Ministry of Agriculture, Royal Government of Bhutan: Thimphu.

MOA (2002c), *Report on Export of Semi Finished Timber Products*, Ministry of Agriculture, Royal Government of Bhutan: Thimphu

MOA (2005a), *Selected RNR Statistics 2003*, Policy and Planning Division, Ministry of Agriculture, Royal Government of Bhutan: Thimphu.

MOA (2005b), *Rural-Urban Migration in Bhutan. Policy and Planning Division*, Ministry of Agriculture, Royal Government of Bhutan: Thimphu.

MOA (2005c), *Basic Data Arrangement on Agriculture in Bhutan*, Research, Extension and Irrigation Division, Ministry of Agriculture, Royal Government of Bhutan: Thimphu

MOF (2005), *National Budget Report 2005-2006*, Ministry of Finance, Royal Government of Bhutan: Thimphu.

MOHE (1994), *Report on National Health Survey 1994*, Ministry of Health and Education, Royal Government of Bhutan: Thimphu.

MOHE (2000), *A Report: National Health Survey 2000*, Ministry of Health and Education, Royal Government of Bhutan: Thimphu.

Moktan, N. et al. (2004), *Bamboo and Cane: A Case Study from Bjokha, Zhemgang, Central Bhutan*, Ministry of Agriculture, Royal Government of Bhutan and World Wildlife Fund: Thimphu.

MOTI (2004), *Cost-Benefit Analysis of the Sale of Electricity to the Manufacturing Sector*, Ministry

of Trade and Industry, Royal Government of Bhutan: Thimphu.

MOTI (2005), The Integrated Master Plan Study for Dzongkhag-wise Electrification in Bhutan—Interim Report, Japan International Cooperation Agency and Nippon Koei Co., Ltd and Department of Energy, Ministry of Trade and Industry, Royal Government of Bhutan: Thimphu.

Namgyel, P. (2003), 'Household Income, Property Rights and Sustainable Use of NTFP in Subsistence Mountain Economy: The Case of *Codyceps* and *Matsutake* in Bhutan Himalayas', (Mimeo.) Regional CBNRM Workshop: Lobyesa.

Nepal, S. K. (2005). Review and Impact Assessment of the Farm Mechanization Programme: Final Report, Ministry of Agriculture, Royal Government of Bhutan: Thimphu.

NHPC (2002), National Policy for Hydropower Development, National Hydroelectric Power Corporation, India, Retrieved from <http://www.nhpc.india.com>

Norconsult (2002), Water Resources Management Plan and Update of the Power System Master Plan: Glacial Lake Outburst, Working Paper 5, Division of Power, Ministry of Trade and Industry: Thimphu.

Norconsult (2004), Water Resources Management Plan and Update of the Power System Master Plan: The 2003-2022 Power System Master Plan Final Report—Main Volume, Department of Energy, Ministry of Trade and Industry: Thimphu.

Norbu, C. and C. Floyd (2001), 'Changing Soil Fertility Management in Bhutan: Effects on Practices, Nutrient Status and Sustainability', paper presented at the Annual Meetings of Soil Science Society of America, American Society of Agronomy and Crop Science Society of America: Charlotte, NC.

NSB (2000), National Accounts Statistics Report, 1980-1999, National Statistical Bureau, Royal Government of Bhutan: Thimphu.

NSB (2004a), National Accounts Statistics Report, 2003. National Statistical Bureau, Royal Government of Bhutan: Thimphu.

NSB (2004b), Poverty Analysis Report, Bhutan, National Statistical Bureau, Royal Government of Bhutan: Thimphu.

NSB (2004c), Bhutan Living Standard Survey 2003, National Statistical Bureau, Royal Government of Bhutan: Thimphu.

NSB (2005), Statistical Yearbook of Bhutan 2004, National Statistical Bureau, Royal Government of Bhutan: Thimphu.

RGOB (1992), Seventh Five Year Plan, Department of Planning, Royal Government of Bhutan: Thimphu.

RGOB (1997), Eighth Five Year Plan, Department of Planning, Royal Government of Bhutan: Thimphu.

RGOB (1999), Vision 2020: A Vision for Peace, Prosperity and Happiness, Planning Commission, Royal Government of Bhutan: Thimphu.

RGOB (2000), Poverty Assessment and Analysis Report 2000, Planning Commission, Royal Government of Bhutan: Thimphu.

RGOB (2002a), Millennium Development Goals: Progress Report 2002 Bhutan, Royal Government of Bhutan: Thimphu.

RGOB (2002b) Ninth Five Year Plan 2002-2007, Planning Commission, Royal Government of Bhutan: Thimphu.

RGOB (2002c), Foreign Direct Investment Policy, December, Royal Government of Bhutan: Thimphu.

RGOB (2005a), Bhutan Human Development Report 2005, Planning Commission, Royal Government

of Bhutan: Thimphu.

RGOB (2005b), Annual Report of the Government, Cabinet Secretariat, June, Royal Government of Bhutan: Thimphu.

Rhodes, N. (2000), 'The Monetisation of Bhutan', *Journal of Bhutan Studies*, 2(2).

Rinzin and W. Roder (2002), Fodder from Integrated Livestock and Agriculture Systems in Bhutan, Presentation for the Fifth Meeting of the Temperate Asia Pasture and Fodder Network (TAPAFON), Renewable Natural Resources Research Centre, Bajo, Wangdue, Bhutan.

RMA (2000), Annual Report 2000, Royal Monetary Authority: Thimphu.

RMA (2001), Annual Report 2001, Royal Monetary Authority: Thimphu.

RMA (2003), Annual Report 2002-03, Royal Monetary Authority: Thimphu.

RMA (2004), Annual Report 2004, Royal Monetary Authority: Thimphu.

RMA (2005), Selected Economic Indicators, June 2005, Royal Monetary Authority: Thimphu.

Roder, W. (1992), Experiences with Tree Fodders in Temperate Regions of Bhutan, *Agroforestry Systems*.

Roder W. (2002), 'Grazing Management of Temperate Grasslands and Fallows', *Journal of Bhutan Studies*, 7, Winter.

Roder, W. et al. (2001), Feeding the Herds, Improving Fodder Resources in Bhutan, International Centre for Integrated Mountain Development (ICIMOD): Kathmandu.

Tenzing, S. (2004), Bhutan: Country Paper on Poverty, Bhutan Country Commissioners, Independent South Asian Commission on Poverty Alleviation (ISACPA): Bhutan.

Tsering, D. (2002), Public Diversity Policy Analysis in Bhutan, Keen Publishing: Bangkok.

Santer, M. (2004), Impact Study: Rural Electrification II - Bhutan, Intermediate Report (Phase I). Eco Himal: Salzburg.

Shrestha, S. (2004), An Economic Impact Assessment of the Rice Research Program in Bhutan, International Rice Research Institute: Manila.

UNDP (2002), 'The Implications of Fiscal Decentralization in Bhutan'. Discussion Paper on Governance, United Nations Development Programme (UNDP), Bhutan: Thimphu.

UNICEF (2002), A Situation Analysis of Children and Women in Bhutan, 2000., United Nations Children's Fund (UNICEF), Bhutan: Thimphu.

Upadhyay Kumar P. (1995) Shifting Cultivation in Bhutan: A Gradual Approach to Modifying Land Use Patterns—A Case Study From Pema Gatshel District, Bhutan, Community Forestry Case Study Series 11, Food and Agriculture Organization: Rome.

Ura, K. (2001), 'Green House Deities and Environment', Kuensel: Thimphu.

Ura, K. (2002), 'Herdsman's Dilemma', *Journal of Bhutan Studies*, 7, Winter.

Ura, K. (2005), 'Labour Contribution'. Draft Discussion Paper, Centre for Bhutan Studies: Thimphu.

Vinning, G. and S. Tobgay (2004), Cordyceps: A Market Analysis, Ministry of Agriculture: Thimphu.

Wangchuk, S. (1991), 'Local Perceptions and Indigenous Institutions for Sustainable Forest Management in Bhutan', cited in FAO (1999).

Wangchuk, S. (2001), 'Local Resource Management Institutions: A Case Study on Sokshing Management', *Journal of Bhutan Studies*, 3 (1), Summer.

Wangchuk, S. (2005), Indigenous Natural Resource Management Institutions of Bhutan, DSB Publications: Thimphu.

Wangdi, K. (2002), Agro-Pastoralism—Towards an Efficient Exploitation of Fodder Resources,

Renewable Natural Resource Centre: Bumthang

Wangyal, T. (2003), 'Reconciling Rhetoric with Reality: An Assessment of the Impact of WTO on Bhutan', (mimeo.): Thimphu.

Wangyal, T. (2005), 'Cottage and Small Enterprise Development in Bhutan: Prospects, Status and Recommendations', (mimeo.): Thimphu.

WEC (2001), Extract from the Survey of Energy Resources 2001, World Energy Council. Retrieved from <http://www.worldenergy.org/wec-geis/edc/countries/India.asp>

World Bank (2000), Bhutan Country Assistance Strategy, Report No. 20158 BHU, World Bank: Washington, D. C.

World Bank (2002a), Hydropower Export Boom: Its Macroeconomic Impacts and Policy Implications, World Bank: Washington, D. C.

World Bank (2002b), Bhutan Private Sector Survey 2002, World Bank: Washington, D.C.

World Bank (2005), Doing Business: Benchmarking Business Regulations, World Bank: Washington, D.C.

WWF (2004), Alternative Technology to Reduce Firewood Consumption, World Wildlife Fund, Bhutan Program: Thimphu.

ANNEXURES

ANNEX 1

DECENTRALIZATION ON BHUTAN

A.1.1 Decentralized Governance

In keeping with its focus on balanced regional development, based on people's participation in decision-making processes, the Royal Government of Bhutan has systematically pursued the policy of administrative and fiscal decentralization. The attempt to introduce administrative decentralization dates back to 1981 when the Royal Government of Bhutan established Dzongkhag Yargay Tshogchung (DYTs) or District Development Committees, giving dzongkhag administrations responsibility of preparing and implementing their own development plans in consultation with the DYTs. At that time, the DYTs seemed to have worked more in a consultative capacity. This process continued further down to block level, when gewog yargay tshogchungs (GYTs) were created in 1991. At the time of the formulation of the Ninth Plan (2002-2007), DYTs and GYTs formed a basis for formulating periodic plans at the district and block levels.

Cementing this process, lately gups, the chiefs of gewogs, started getting elected on the basis of adult franchise. The chathrim (laws) of 2002 formally devolve the authorities—regulatory, administrative and financial—to the local bodies. Accordingly, the gups are equipped with the responsibilities and authorities to assess local needs, determine priorities, decide upon programmes and monitor progress. They are responsible for collecting taxes, mobilizing resources for community services, settling local disputes, maintaining water supplies and supervising social services (UNDP 2002).

The ability to make decisions on matters of identifying and implementing development programmes along with adequate revenue generating authority is the hallmark of the system of decentralized governance of Bhutan. The dzongkhags and gewogs have to prepare periodic

plans for five years (coinciding with the Central level plans) based on their own priorities. The Central government has provided them with the guidelines and manuals for preparing such plans. Once such plans are complete, they will negotiate for resources with the Department of Planning of the Ministry of Finance. Upon completion of negotiation, annual resource allocation and disbursement based on the plan will be an automatic process. Clearly, there could be a deviation in the district level priorities from the national ones, and such deviation is accepted by the Central government.

Indeed, the deviation from the national priorities provides flexibility for prioritization at the local level, and at the same time calls for a rational basis for resource allocation among the districts. It is, however, worth noting in this context that there is no set principle and basis for resource allocation among the local bodies. As a result, indirectly it is the Central level priorities that guide such an allocation.

A.1.2 Fiscal Decentralization

As per the decentralization scheme and GYT Chathrim (Act) of 2002, the gewogs should develop periodic and annual plans fully equipped with the cash flow schedule, on the basis of which Department of Budget and Account disburse the amount to them in the Letter of Credit account in the nearest banks. If the disbursed money cannot be spent on the specified activities, it will lapse, and if such projects have yet to start, gewogs have to renegotiate for the said projects as if they are the new ones. Hence, they would be at loss if the projects could not be initiated in time. For the incomplete projects, resource would be allocated without much problem, and accordingly the budget will be disbursed.

For budget disbursed to the Letter of Credit account, the gewogs have to submit monthly progress report, and for local tax collection they need to submit six-monthly and annual reports. The Department of Budget and Account can, on a random basis particularly for large projects, undertake field visits for performance auditing of the projects. Gups and other members are trained for developing cash flow schedule and maintaining accounts and auditing functions.

For some of the projects for which procurement of goods can be done more cost effectively at the Central level, taking benefit of the scale economies, the amount required for such procurement is disbursed to the respective agencies. For example, in the case of drinking water schemes, water tanks, pipes and other accessories are centrally procured by the Ministry of Health, and on behalf of any particular project, the Department of Budgetary Affairs disburses money for that purpose to the Health Ministry. It is reported that 60-70 percent of the disbursed amount are spent by the gewogs.

The procedure for budget release is a little complex insofar as technical feasibility is undertaken for releasing the budget. When the financial resources are committed and allocated at the time of the negotiations with the Department of Planning, the programmes and projects would have been identified by the respective communities and gewogs only based on their priority. Since they have to undergo technical evaluation, it takes a long time to pass through various government

considerations such as environment test and other technical requirements as the case may be. Since for many projects, field-based evaluation is required to assess and verify the statements made by the respective communities, and months suitable for such a visit is limited to 3-4 months a year, technical approval itself takes a time spanning over more than a fiscal year, resulting in a backlog of project lists. Thus the number of projects actually implemented could be far less than what appear in the plan documents. There is a need for evaluating this process and simplifying it to make effective use of the resources allotted.

After the programmes and projects budget is released by the Department of Budget and Accounts, the DYT and other officials have the authority to sanction the money at par with other government authorities. For example, the DYT can sanction up to Nu. 50 million in par with the authority of any ministry; gewog has such an authority to the limit of Nu. 2 million. The beneficiary gewog chief (gup) can sanction up to Nu. 50,000 in one occasion and it is at par with the authority of any Department head in the government.

Apart from receiving Central government grant disbursed on the basis of their periodic plans, local administrations can also raise revenue through labour tax and rural tax. The dzongkhags and gewogs are authorized to raise these taxes under the GYT Chhathrim 2002.

People in Bhutan used to make compulsory labour contribution and pay tax in kind. Labour contribution is variously known, and one category is known as woola contribution. Under this arrangement, each of the households needs to contribute labour to physical and cultural infrastructures planned by the communities. Households having sick and elderly persons, having someone in the government and community positions, some past merit and/or deaths in the households are exempted from such compulsory labour contribution. On an average, a household seems to have made such a labour contribution, varying anywhere between two weeks to ten weeks in a year.⁹¹ With a modern taxation system in place, and monetization of the economy getting broadened over the years, such labour contribution is gradually vanishing, and is being replaced by paid labour, the wage being paid by the households which need to contribute such compulsory labour. Such substitution is taking place increasingly in the urban areas and commercial centres. Though rural taxes are not the substitutes to the compulsory labour contribution, the changes in the labour market and its informal status vis-à-vis government obligations in matters like taxes, its practice will gradually decline as already indicated by the trend in the urban centres.

Rural tax is the property tax paid by rural households. It consists of Land Tax, House Tax, Cattle Tax and Grazing License Fee. From the beginning of 2002 under the DYT Chhathrim (2002), rural tax is transferred to the local level and now the dzongkhag and dzongkhag authorities are responsible for assessment, collection and deposit of rural tax. Its rate structure is shown in Table A1.1. The rates are nominal and have remained constant for the past several years in order to keep the tax burden low on the assumption that higher tax burden could escalate out-migration.

⁹¹ A recent study has found that beneficiary households contributed an average of 23 woola days per year for district and local development activities (Ura 2005).

Table A1.1 Types of Rural Tax and their Rate Structure

Land Tax		
Sl. No.	Type of Land	Annual Tax Rate
1.	Wetland (paddy)	Nu. 24 per acre
2.	Dryland	Nu. 12 per acre
3.	Orchards (apples, orange, cardamom, areca nut, lemon)	Nu. 12 per acre
4.	Undeveloped shifting cultivation land	Nu. 10 per acre
5.	Bamboo and khar field*	Nu. 1 per acre
House Tax		
Sl. No.	Type of House	
1.	Permanent house (house constructed with rammed mud, stones or bricks)	Nu. 20
2.	Semi-permanent house (hut, thatched house)	Nu. 10
Cattle and Livestock Tax		
Sl. No.	Type of Cattle/Livestock and numbers	
1.	Up to 10 numbers of each type, whether mithun** cow, yak, buffalo, horse, mule, donkey and goat.	Nu. 1 per head
2.	11 and above of each type	Nu. 5 per head
3.	Sheep (any number)	Nu. 1 per head
Grazing License Fee		
Sl. No.	Type of Grazing License	
1.	Developed pasture	Nu. 5
2.	Undeveloped pasture (tsamdo)	Nu. 100

* Land used for growing a special type of bamboo used for making bows, commonly known as 'zhushing', and thatch used for roofs.

** local cow and wild gaur hybrid.

The revenue from rural tax as reported in the national revenue report forms only the part of the total revenue from this source. Since the collected revenue is retained at the gewog level, revenue collection from rural tax has to be compiled from the gewog information, which is not readily available. In order to gauge the level of rural tax revenue at the dzongkhag level, their revenue collection for the past years 1997/98 and 1998/99 is shown in Table A1.2.

In 2000/01, the Central government raised Nu. 10.26 million from rural tax. With the assessment and collection at the dzongkhag and gewog levels, more revenue is likely to be collected. It is estimated that on an average, Nu. 40,000 to Nu. 50,000 is collected by a gewog. Figures provided by the Department of Revenue and Accounts on the rural tax collection before it was given to the local government units showed total collection of Nu. 7.8 million in 1998/99. The maximum and minimum collections at the dzongkhags level are Nu. 600,000 for Sarpang and Nu. 30,000 for Gasa. Thus there is a great variation in the revenue from the rural taxes (Table A1.2).

However, these sources do not provide a significant amount of revenue to the local bodies. Thus, the revenue from local taxes constituted 0.25 percent of total revenue in 1997/98 and 0.21 percent in 1998/99. Moreover, the collection of rural tax is found to have gone down significantly in the recent years. This is attributed to two reasons—first, its devolvement to the local government units; and second, the exemption allowed in certain gewogs due to disturbances and bad weather. Though nominal, rural tax provides some basis for the revenue source for the local government units, and will complement the other grants from the Central government that come to local governments as per the Ninth Plan local level plans.

A.1.3 Allocation of Expenditure by Dzongkhags and Gewogs

Bhutan spends its public expenditures through its different government tiers—at the Central, dzongkhag, and gewog levels. The Central government spends through its different sectoral ministries, autonomous and other constitutional bodies. In the dzongkhags, government expenses are made in two different ways: first, by dzongkhag administrations for Central level programmes at the dzongkhag level through different dzongkhag sectoral offices, and second at the gewog level within each of the dzongkhags. Gewogs get Central government grants as per the periodic plans, and raise revenue from their own rural taxes as well.

Table A1.2 Dzongkhag-wise Rural Tax Collection for 1997/98 and 1998/99 (in Nu. Million)

RRCO Thimphu	Thimphu	Punakha	Paro	Haa	Wangdi	Gasa	Total
1997/98	0.224	0.127	0.367	0.212	0.243	0.036	1.209
1998/99	0.191	0.215	0.537	0.115	0.598	0.029	1.685
RRCO S/ Jongkhar	Samdrup Jongkhar	Trashigang	Mongar	Pemagatshel	Lhuentse	Trashi Yangtse	Total
1997/98	0.376	0.568	0.405	0.159	0.019	0.336	1.863
1998/99	0.565	0.589	0.332	0.112	0.360	0.261	2.219
RRCO Gelephu	Sarpang	Bumthang	Tsirang	Trongsa	Dagana	Zhemgang	Total
1997/98	1.967	0.265	0.208	0.233	0.158	0.457	3.288
1998/99	0.537	0.373	0.204	0.165	0.377	0.223	1.879
RRCO Phuentsholing		Phuentsholing		Total			
1997/98		0.536		0.536			
1998/99		0.381		0.381			
RRCO Samtse		Samtse		Total		National Total	
1997/98		0.696		0.696		1997/98	7.592
1998/99		0.650		0.650		1998/99	7.814

Source: Department of Revenue and Account.

The detailed expenditure breakdown at these different government tiers is available for 2003/04 (Table A1.3). The total of government expenditure at all levels amount to Nu. 10,932 million. Almost 86 percent of this total expenditure is in the command of the Central government.

Figures for the total Central, district and block level expenditures show the maximum share going to the Ministry of Finance, closely followed by the education sector and then trade and industry, and works and human settlement. At the Central government level, the maximum resource allocation has gone to finance, followed by trade and industry and works and human settlement. The Central government is spending much less amount on health and education, about 8 percent of the Central government expenditure on each of these sectors. The agriculture sector has received about 13 percent of the Central government expenditure. The maximum share going to finance reflects the high national debt service, which comes to about 5 percent of the total government expenditures. The Central government allocation of resources has determined the overall resource allocation pattern. The Central government expenditure pattern shows a bias towards urban areas, with significant share going to trade and industry, and then to works and human settlement.

At the Central level, the social sectors (health and education) have secured more than a quarter of the total government expenses. In the absence of the expenditure breakdown for the social priority sectors like basic education including technical education, basic health facilities and drinking water, it is not possible to evaluate if the country has achieved the Compact 20/20 under which both recipient country and donors are expected to allocate 20 percent of their expenses to social priority sectors.

About Nu.1900 million is expended at the dzongkhags' level. Of this almost 48 percent is spent on education sector followed by health (12 percent) and agriculture (almost 9 percent). The social sectors, especially the education sector, figure prominently in the resource allocation at the dzongkhags level. The same is true about allocation of expenditure at the gewog level as well. As noted in Chapter 4, some 57 percent of expenditure incurred at the local level (combining dzongkhag and gewog) has been allocated to the social sectors, with education alone taking a share of 45 percent.

These figures reflect vastly higher priority given to the social sectors at the local level compared to the Central level. It is thus evident that the spectacular increase in social sector spending that has occurred in recent years is closely tied to the phenomenon of fiscal decentralization. The government of Bhutan has been putting emphasis on decentralization as a means of ensuring balanced human development across all its regions. The fiscal aspect of decentralization is already bearing fruit in terms of raising the priority of social sector spending.

Annex Table A1.3 Actual Government Expenditures (Total of Current and Capital) at Different Government Tiers (2003/04)

Sectors	Total of Central and Dzongkhag 1 = 2+3		Central 2		Dzongkhag Total 3 = 4+5		Dzongkhag Administration 4		Gewog's Total at Dzongkhag Level 5	
	Nu. Million	% of Total	Nu. Million	% of Total	Nu. Million	% of Total	Nu. Million	%	Nu. Million	% of Total
Expenses on Central/ District Government Functions	1197.7	11.0	636.9	7.2	560.7	27.4	494.5	26.2	66.2	41.7
Ministry of Home Affairs	524.7	4.8	524.7	5.9						
Ministry of Finance	1699.6	15.5	1699.6	19.1						
Ministry of Foreign Affairs	269.3	2.5	269.3	3.0						
Ministry of Agriculture	1358.9	12.4	1138.9	12.8	219.9	10.8	167.7	8.9	52.3	32.9
Ministry of Trade and Industry	1476.9	13.5	1476.9	16.6						
Ministry of Works and Human Settlement	1525.7	14.0	1424.0	16.0	101.7	5.0	95.1	5.0	6.6	4.1
Ministry of Information and Communication	91.9	0.8	91.9	1.0				0.0		
Ministry of Health	920.4	8.4	687.6	7.7	232.7	11.4	226.3	12.0	6.5	4.1
Ministry of Education	1683.0	15.4	754.5	8.5	928.5	45.4	901.4	47.8	27.1	17.1
Ministry of Labour and Human Resource	183.864	1.682	183.864	2.069						
Total	10932.0	100.0	8888.3	100.0	2043.6	100.0	1885.0	100.0	158.6	100.0

Source: Compiled from the data made available to UNDP, Bhutan, by the Department of Revenue.

ANNEX 2

FISCAL SUBSIDIES

A2.1 Introduction

Almost all governments use subsidies to achieve national economic, social or environmental goals. Government subsidies are a direct means of redistributing wealth by diverting government revenue. In some instances, the government does not acquire the revenue for these subsidies directly, but uses laws or regulations to transfer resources from one group of citizens or firms to another. A subsidy may also take the form of a loan, or debt forgiveness of a debt or tax reduction or exemption.

In Bhutan, the subsidies and related issues do not elicit much discussion since its use is fairly limited due to the absence of pressures from interest groups and other populist demands in the current political set-up. Furthermore, the government has pursued a very prudent fiscal policy that seeks to match expenditures to the limited resources. This annex seeks to explore the use of subsidies in Bhutan. However, it should be noted that there is a general dearth of information and consolidated data for this area. The exercise, perhaps, represents the first attempt to consolidate information on the provision of subsidies in Bhutan.

A2.2 Institutional Subsidy

The subsidies are offered for supporting current expenditure (such as interest payment, salaries and office space rents), as well as capital expenditure (like procurement of machinery and equipments) for government corporations. The Department of Budget and Accounts, Ministry of Finance looks at the issues of subsidies largely from a budgeting and expenditure point of view. Accordingly, subsidies are broadly categorized in terms of intended institutional beneficiaries of the subsidy, which are

government-owned corporations and non-profit organizations, as shown in Table A2.1.

Table A2.1 Summary of Fiscal Subsidies
(in Nu. million)

Organizations	2001/02		2002/03		2003/04		2004/05	
	Current	Capital	Current	Capital	Current	Capital	Current	Capital
Non-profit organizations	12.837	14.292	18.510	11.804	15.733	31.001	38.674	3.528
Corporations	64.526	56.559	144.744	486.361	183.743	52.099	115.705	19.930
Total subsidy	77.363	70.851	163.254	498.165	199.476	83.100	154.379	23.458
Subsidy as % of total expenditure	1.66	1.29	3.36	8.27	3.99	1.32	2.37	0.26

Source: Department of Budget and Accounts, Ministry of finance, June 2005, Thimphu.

A2.1.1 Operating Subsidy Given to Government Owned Corporations

Bhutan Broadcasting Service Corporation Limited (BBS)

The BBS is the only provider of television and radio services in the country. It was corporatized in 2000 to provide greater policy autonomy and press freedom. The government provides capital grant for the procurement of equipments and operational subsidy as the organization cannot sustain itself due to minimal scope for revenue generating activities. In addition, the BBS, in particular the radio service, plays a valuable social role in disseminating news and information to the far-flung areas of the country. The programming comprises of current news, health and education programmes, public information and entertainment.

City Corporations

The Thimphu municipal authority was corporatized to ensure efficient provision of services through commercial discipline. While it is expected to attain financial sustainability, it has not been possible due to the low revenue base (comprised mainly of municipal taxes, fees, water and sewerage charges etc.). On the other hand, the expenditure is large due to the high cost of infrastructure and the rapidly increasing urban population. Hence, the government provides support for capital and current expenditures.

Druk Air Corporation

For the landlocked country, Druk Air serves as the main source of link with the outside world. Its establishment in 1984 ushered in vast opportunities for trade and travel as well as boosted the tourism industry. The fleet currently comprises of four planes (two 80-seater BAe-146 jets and two 124-seater Airbus A319 aircrafts) and flies to four destinations in India, Nepal and Thailand. In the purchase of the new planes, the government provided equity infusion for one aircraft and subsidizes the interest payment for the second aircraft that was bought on loan. Such support is

necessary due to the high fixed capital and current expenditure. The revenue earning opportunities are limited due to the operational limitations of Paro Airport, which requires visual navigation and poses load penalties for the smaller planes.

Druk Air Corporation is thus a natural monopoly. Although national carriers from the three destination countries have reciprocal rights to operate flights into Bhutan, they have not done so due to low passenger volumes, airport limitations and the need for special aircrafts.

Druk Seed Corporation (DSC)

The DSC is the only organization that is involved in the production and supply of seeds and plants, importation of seeds and plants that are not available in the country, and maintenance of security seed stock for major crops. This is important for an agrarian country in which the majority of the people are farmers. The DSC also has the exclusive rights to procure and distribute fertilizers and herbicides. Although the Seed Act of Bhutan 2000 encourages private participation in the supply of seeds and any enterprise can import and supply fertilizers, private sector participation has, however, not emerged as yet and DSC continues to serve as the national seed grid and seed bank and the apex body for the supply of fertilizers. Given this important role, the government provides support to DSC for both current and capital expenditure.

A2.1.2 Operating Subsidy Given to Non-Profit Organizations:

Bhutan Chamber of Commerce and Industry (BCCI)

The BCCI is the main association that represents the private sector. Due to the small and weak nature of the private sector, the government provided financial support to establish the BCCI. To encourage the participation of the BCCI in SAARC-related activities, the government provides support for travel to SAARC trade and commerce related meetings. It is estimated that the amount of this support is less than Nu. 1 million

Youth Development Fund (YDF)

The YDF was established to ensure the welfare of the growing youth population. To support its activities the government provides support for current expenditure not exceeding Nu. 400,000 per year.

Support for the Royal Society for Protection of Nature (RSPN)

The RSPN is the first NGO established in Bhutan in the environment sector. It plays an important role in conservation as well as environment education and awareness campaigns in the country. Due to its important social role and the limited financing opportunities, the government provides modest support for current expenditure not exceeding Nu. 250,000 per annum.

A2.2 Fiscal Incentives

In order to foster investment, encourage market diversification and balanced regional development the government announced the following tax holidays in National Budget Report 2002-2003:

- Three years for manufacturing industries;
- Three years for Information Technology training and vocational institutes;
- Five years for hotels, schools and auto-mechanical workshops established in the interior;
- Seven years for manufacturing industries established in the interior parts of the country.

In an effort to boost private sector development the government announced the following incentives:

- Removal of sales tax and customs duty on plant and machinery;
- Removal of sales tax and customs duty for raw materials used by convertible currency earning businesses;
- Exemption from corporation income tax and/or business income tax for income earned in convertible currency by manufacturing industries, Information Technology industries or services and agricultural produce.

The revenue forgone on account of the tax holidays currently enjoyed by 11 firms in 2004 was estimated at Nu. 32 million. Similarly the revenue forgone on account of customs duty and sales tax exemption on raw materials is estimated at Nu. 327 million and the import duty forgone on import of plant and machinery amounted to Nu. 804 million. Hence the total revenue forgone on account of the exemptions is Nu. 1163 million in 2004 (MOF 2005). This amount is significant as it corresponds to 17 percent of total domestic revenue for 2004-2005.

A2.3 Underpriced Electricity Supplied to Industries

The power-intensive industries consume about 73 percent of total domestic consumption. The industries receive a subsidy in power prices when compared to the export price as shown in Table A2.2.

Table A2.2 Subsidy on Power Tariff
(Nu. per unit)

Year	Industrial	Export	Remarks
1998 and 1999	0.60	1.00	
2000	0.70	1.50	
2001	0.80	1.50	
2003	0.90	1.50	Nu. 0.90 is the block rate for high voltage consumers. There is a demand charge of Nu. 54,000 per month per kwh from 2004 onwards
2005	0.90	2.00	

Source: MOTI (2005).

The largest subsidy per unit consumed, however, goes to rural and urban households as a result of the high transmission and distribution costs associated with supply to these consumers. While the current average domestic power tariff is Nu. 0.92 per unit, the actual cost of providing electricity to domestic consumers is Nu. 4 per unit.

A2.4 Agriculture Support Subsidies

Agriculture support subsidies include subsidies for Agriculture Mechanization Programme, Free Supply of Fodder Trees, and Fair Distribution of Agricultural Inputs. Under the Agriculture Mechanization Programme, subsidies to the extent of Nu. 12.6 million for 2002/03 and Nu. 13.6 million for 2003/04 are budgeted for introducing basic farm machineries like spades, sickles and manual portable threshing machines. Free Supply of Fodder Trees includes the supply of pasture seeds and fodder tree saplings free of cost, and for this purpose the government has allotted Nu. 4 million for the period 2002-2004. The supply of pasture seed is totally subsidized by the government and 42.4 tonnes (valued at Nu. 3.143 million) were supplied during the Eighth Five Year Plan (Department of Agriculture and Livestock Support Services 2002). The government also provides free transportation of fertilizers from the point of import in Phuentsholing till the point of distribution (to the nearest road head) in all areas of Bhutan.

The selling price of all farm machinery is fixed by the government on a recurrent basis and, in addition to bearing the transportation costs and provision of installation and repair services, the Agricultural Machinery Centre (AMC) provides subsidies for the Japanese KR-II grant machines. For the last five years, only Japanese-made power tillers are being sold to farmers at a subsidy, whose rate was 81 percent in 2004. The AMC has been reducing the subsidy to gradually level prices with that of Indian power tillers. Subsidies on machines of Indian-make were withdrawn in 1992. It is the government policy to slowly withdraw from the procurement and supply of machinery services that can be done by private entrepreneurs.

A2.5 Rural Timber

The government provides forest resources such as timber at subsidized rate to rural people who cannot afford to purchase timber at commercial rates. The rural royalty rate is 8-25 percent for standing trees and 5-9 percent for sawn timber compared to commercial rates. For example the rural royalty rate for logs is Nu. 0.80 per cft while the commercial royalty rates vary from Nu. 14 per cft to Nu 21 per cft. The subsidized rate for procuring timber from the sawmill for rural house construction is Nu. 87 per cft. This is less than half of the commercial rate, which is Nu. 220 per cft.

The only available figure shows that in the Seventh plan (1992-1997), the government has subsidized the royalty for rural timber by Nu. 194.142 million. This represents about 2.15 percent of the average current expenditure during the plan period. If the commercial value of the timber is taken into account, the government would have forgone revenue equivalent to Nu. 3684.588

million or about Nu. 737 million per annum. This revenue forgone represents about 40 percent of the average annual revenue for the plan period.

A2.6 Subsidies and the WTO

The current types of subsidies provided in Bhutan are consistent with the WTO obligations that Bhutan will have to follow upon membership. Most of the subsidies are WTO ‘non-actionable’ provided for socio-economic reasons.⁹² The WTO prohibited subsidies include export subsidies and subsidies that are contingent on the use of domestic over imported goods. Such policies do not exist in Bhutan. Furthermore, the tax holidays and other fiscal concessions are available for all industries and not targeted to specific export industries.⁹³

⁹² *In addition to the subsidies discussed above, the government provides subsidy for interest payment for purchase of public buses that ply on non-profitable routes. This is to encourage private operators to ply buses in routes where passenger volume is limited. It seeks to serve a social function.*

⁹³ *For a general discussion on the possible implications of WTO accession for Bhutan, see Wangyal (2003).*

ANNEX 3

MICROFINANCE IN BHUTAN

A3.1 Introduction

Microfinance in Bhutan has a relatively recent history, with modern public finance practices in Bhutan beginning only in the early 1970s. The early years of agricultural development were characterized by the introduction of modern farming methods and the free provision of inputs like fertilizers, pesticides, seeds and extension services. Since the Sixth Five Year Plan (1987-1992), the RGOB has placed greater emphasis on the liberalization of markets and self-reliance, resulting in the reduction and eventual withdrawal of most subsidies. With farmers no longer able to rely on subsidies for modern inputs, the need for rural credit to enable farmers to improve farming practices was considered essential for agricultural development. To meet this need, the Bhutan Development Finance Corporation (BDFC) was established in 1988 to provide credit to rural areas, as well as for small- and medium-scale industries.

While the government does not have an explicit policy on microfinance, it can be inferred from its policy of sustainable and equitable socio-economic in promoting Gross National Happiness. The Vision 2020 identifies enhancement of rural incomes as a priority area and sets the goal of achieving a three-fold increase in real income of farmers by 2012. Therefore, an underlying strategy that runs through its five-year development plans, is infrastructural development that seeks to increase rural access to social and economic services, including financial services. One of the main strategies in this respect was the upgrading of the Rural Credit Division in the RMA into the Bhutan Development Finance Corporation (BDFC) in 1988 with the social mandate of providing credit services to the rural population.

The BDFC has surmounted various geophysical constraints and socio-economic limitations to make significant progress in the provision of microfinance through its Agricultural Lending Division. However, it has not contributed to balancing regional development as its services have benefited the more well-off dzongkhags and poorer households may have been unable to avail of these services.

A3.2 Sources of Microfinance

The sources of microfinance in Bhutan, as in most developing countries, are the formal financial sector and informal sources. The formal financial sector includes the Bank of Bhutan (BOB), Bhutan National Bank (BNB), the Royal Insurance Corporation of Bhutan Limited (RICBL) and BDFC. While the first three financial institutions have disbursed agricultural loans and are involved in development of SMEs, they are commercial undertakings and are not considered as sources for microfinance. Hence, microfinance in Bhutan is associated with the programmes of the BDFC.

The BDFC is the sole development finance institution in Bhutan and was established in 1988 under a Royal Charter to promote and finance industrial, agricultural, and commercial enterprises.⁹⁴ It has received assistance from UNCDF, UNDP, SNV, ADB, IFAD and KFAED for its development,⁹⁵ and has also taken Nu. 50 million in rural credit bonds from the RGOB and borrowed Nu. 100 million each, at subsidized rates from the National Pension Board (NPB) and the BNB in 2003. In the same year, it took a commercial loan of Nu. 200 million from the NPB, bringing its total long-term liabilities to Nu. 599 billion in 2003. Its total disbursements and advances stood at Nu. 1064 million for the same period. In 2004, total disbursements reached Nu. 189 million and the Corporation made a pre-tax profit of Nu. 61 million.

Although BDFC was corporatized in 2000 under the Companies Act and Financial Institutions Act, it is still entrusted with the social obligation of providing microfinance. Unlike in other countries, there are no NGOs, quasi-financial institutions providing microfinance services in the rural areas, except for the National Women's Association of Bhutan, which has a very small credit programme in Eastern Bhutan.

Since its establishment, BDFC has reached coverage of around 60 percent of the rural population with 22 branch offices located in the dzongkhags. Mobile banking, where credit officers often walk for days to reach a client, has been established as an effective means to provide banking services to remote rural communities.

Although, BDFC is a non-banking institution, the RMA granted permission for it to provide savings facilities for the general rural population and on 5 April 2005, the BDFC launched Bhutan's first Rural Savings programme entitled 'Save to Grow' to mark the International Year of Microcredit.

⁹⁴ Prior to 1988, rural credit was handled by the Rural Credit Division in the Royal Monetary Authority (RMA).

⁹⁵ Donors, such as UNCDF, UNDP, SNV, Helvetas/SDC, EU and GTZ are also involved in rural development through various projects such as the Second Eastern Zone Agricultural Programme, Wang Watershed Management Project, East Central Region Agricultural Development Programme, Rural Enterprise Development Programme and Rural Development Training Programme.

The Programme is assisted by UNDP, UNCDF and SNV and will help BDFC to expand its financial base, enabling it to increase its lending programme. The savings facility will be taken almost to the client's doorstep through the BDFC's existing mobile banking network in the gewogs.

A3.3 Lending Schemes

Apart from its industrial loans, the BDFC's Agricultural Lending Department (ALD) has three schemes, the Group Guarantee Lending and Saving Scheme (GGLSS), Small Individual Loans (SIL) and Commercial Agricultural Loans (CAL), which are described in Table A3.1.

Table A3.1 BDFC Loan Schemes

Type	Ceiling (Nu.)	Repayment Terms (months)	Debt–Security Ratio	Interest Rate (%)	Debt–Equity Ratio
GGLSS	500–50,000	12–36	Group guarantee	10	3:1
SIL	< 50,000	36	1:1	14	3:1
CAL	> 50,000	>36	1:1.5	15	3:1

Source: Chetri (2005).

Initially, BDFC rural loans were approved by the dzongkhag. However, with decentralization, Gewog Loan Committees (GLC) have been formed, which can approve loans upto Nu. 5000. The Branch Loan Committee approves loans upto Nu. 30,000 and the Chairperson of the Centre Group (composed of several groups), who is elected on a yearly basis, approves loans up to Nu. 50,000. Regional Loan Committees approve loans up to Nu. 100,000 and the Management Loan Committee can approve loans up to Nu. 5 million. Loans above this amount are put up to the BDFC Board. All loan applications are routed through the GLC.

A3.3.1 Group Guarantee Lending and Saving Scheme (GGLSS)

The GGLSS is the most pertinent scheme with regard to microfinance and poverty reduction. The minimum and maximum membership, from different households, to form such a group is three and seven respectively. The members are given basic training in loan operations and enterprise management and an Individual Compulsory Saving Account (ICSA) is started by the BDFC for each member with Nu. 50 each. Every member has to make a monthly deposit of Nu. 50 into this account and 5 percent of every loan is also deposited into the ICSA. The GGLSS members are eligible for five loan cycles with an initial loan ceiling of Nu. 7500 for a maximum period of 12 months. The loan ceiling is Nu. 50,000 for 36 months with an interest rate of 10 percent per annum. Mobile banking is used to approve loans, collect repayments and savings (ICSA as well as voluntary savings). A total of 1356 GGLSS groups were formed between 1999 and 2003 with a total disbursement of Nu. 4.278 million and total saving of Nu. 1.477 million for the same period.

A3.3.2 Small Individual Loans (SIL)

Such loans are taken for farm mechanization, house construction, agricultural trading and household needs between harvests. It takes around a month to secure a SIL (Chetri 2005). A one-to-one mortgage is required.

A3.3.3 Commercial Agricultural Loan (CAL)

Most of these loans are for amounts above Nu. 100,000 and are taken by those with adequate mortgage and a debt equity of more than 25 percent and, hence, cannot be considered as microfinance for poverty alleviation.

A3.4 Lending and Repayment Pattern

Although usury is illegal in Bhutan, it is estimated that moneylenders disburse around 30 percent of all rural loans with an average interest rate of around 50 percent (Chetri 2005). Apart from individuals, the monk bodies and other religious institutions also extend financial assistance for those in need. Most take loans from moneylenders in times of emergencies such as sickness, death, and crop failure as well as for buying agricultural inputs. Many of the borrowers use moneylenders as they do not qualify for the SIL or GGLS schemes, either because they do not have the mortgage or they could not find other households to form a group.

According to the actual disbursements made from 1982 till 2004, the Rural Credit Division of the RMA lent Nu. 1.632 million in 1982, which increased to Nu. 6.510 million in 1987. With the establishment of BDFC, the total disbursement has increased from Nu. 6.441 million in 1988 to Nu. 188.968 million by the end of 2004.

Although total disbursement has increased since the rural credit programme was started, disbursement is highly skewed. The Western region received 47.4 percent of the total disbursement since 1982, followed by the Eastern region with 26.1 percent. The Central region received 16.8 percent, and headquarter agricultural disbursement made up the remaining 10 percent or so.

If individual dzongkhags are compared, Paro was the destination of 9.6 percent of the total disbursement followed by Chhukha with 8.4 percent. The dzongkhag with the lowest disbursement was Samtse with 0.2 percent, followed by Tsirang with 0.4 percent of the total distribution since 1982. These figures, however, have to be seen in the context of the militant problem in the south, resulting in the suspension of rural credit operations during these years. The pattern is similar if disbursements for the last five years are considered.

According to a study conducted on microfinance expansion in Bhutan, the national loan distribution average for the period 1999-2003, excluding the head office distribution (which is mostly for larger loans), was around Nu. 24,000 per account. The total number of account holders increased from 3416 in 1999 to 5649 in 2003, bringing the total number of clients to 24,024 for the period (Chetri 2005).

The main purpose for which people borrow are house construction/roofing (changing wooden shingles), purchase of seeds and fertilizers and livestock improvement. Loans were also taken for starting small businesses, land improvements and purchase and, in a few cases, to pay off informal moneylenders.

As a percentage of BDFC's total disbursement, industrial lending comprises 65 percent of the total loan assets and agriculture lending comprises the remaining 35 percent. As a percentage of the total lending of all the financial institutions, microfinance or agricultural loans, with around Nu. 11 million, accounted for a mere 0.5 percent of the total disbursement of Nu. 2037 million in 1998, which increased slightly to 0.6 percent in 2004 (Dema 2005).

Although more than 80 percent of the early loans given in the late 1980s went bad, the BDFC's Portfolio at Risk rate is estimated to be around 20 percent for 2004. For the period 1999-2003, the average national recovery rate was 86 percent. The losses on account of agricultural lending have been made up by the BDFC's industrial loans. A major reason for bad loans is that it is traditionally viewed as kidu or welfare.

A3.5 Potential and Constraints

Based on the RGOB's commitment to balanced regional development and the MDGs, and its efforts to establish an enabling environment through infrastructural expansion, rural development programmes, training courses for small entrepreneurs and sustained donor support, microfinance can be a powerful agent for regional development in Bhutan.

The BDFC's microfinance programme presents the potential for promoting balanced regional development through the following:

- helping very poor households meet basic needs;
- protecting such households from vulnerabilities and risks;
- improving their economic welfare and self-reliance through improved agricultural productivity and support for small off-farm enterprises;
- creating employment opportunities;
- supporting women's economic participation and empowering them, thereby promoting gender equity.

It should be recognized, however, that the provision of microfinance services in Bhutan faces several obstacles. The major constraints are related to the country's geophysical setting and stage of socio-economic development and include the following:

the relatively small monetized sector of the rural economy;
lack of private sector development;⁹⁶
Kidu culture;

⁹⁶ According to BDFC, while access to credit is important, it found that the main impediment to increased household income is the lack of business opportunities rather than access to credit.

high illiteracy;

low population scattered in remote settlements in a rugged mountainous terrain.

Institutional constraints include the following:

- dual role of BDFC as a commercial organization with social responsibilities;
- political interference;⁹⁷
- lack of awareness of BDFC's microfinance programme as well as misconceptions about availing of loans from BDFC (Chetri 2005);
- lack of coordination among donors, financial institutions and relevant sectoral ministries;
- lengthy formalities in availing microfinance.

A3.6 Conclusions

Although the microfinance programme of the BDFC has made significant progress in spite of the geophysical constraints and stage of socio-economic development, its potential for contributing to poverty reduction has not been fully utilized.

In terms of balanced regional development, the BDFC's disbursement pattern is at odds with its social mandate. The Poverty Analysis Report 2004 identified Gasa, Pemagatshel, Lhuentse, Zhemgang, Trongsa, and Samdrup Jongkhar as the most disadvantaged dzongkhags. But the microfinance programmes of the BDFC have not favoured these dzongkhags. Their share of the BDFC's total disbursement was 15.2 percent (0.90, 3.7, 2.8, 2.7, 3.1 and 2 percent respectively), which is less than the total loan received by the top two dzongkhags, Paro and Chhukha (18 percent). Hence, the larger portion of BDFC's disbursement has gone to the more well-off dzongkhags and not to the backward dzongkhags. Regionally, BDFC loans have been concentrated to the western region with more than half of the total disbursement.

This regional imbalance in financial access, which may be the result of the natural productivity of these dzongkhags and the entrepreneurial spirit of their people, is against the government's stated policy of balanced regional development, and may widen, if not checked.

Given the dependence of the majority of the population on agriculture, the government needs to take cognizance of the generally low levels of lending to this vital sector. The BDFC has a key role to play in poverty reduction through the provision of financial services. Nonetheless, its dual role may limit its ability to carry out either role efficiently. Cross-subsidizations should be avoided, as it may undermine BDFC's role as an industrial development lender. If government social policy requires a subsidy, this should be provided in a transparent manner.

Given the potential of microfinance in the alleviation of poverty, the government needs to chalk out a microfinance policy strategy and reassess the future role of BDFC in this regard. It is recommended that, since in most cases, a development finance institution structured for both

⁹⁷ *The 82nd Session of the National Assembly reduced interest rates from 13 to 10 percent for housing loans in 2004 and the GGLSS was also accordingly reduced.*

industrial and agricultural lending cannot deliver microcredit cost-effectively, the BDFC should either concentrate on industrial or agricultural lending.

If the above suggestion is considered, the agricultural lending arm should be established in central or eastern Bhutan so as to boost development in these lagging regions and thus bring about more balanced regional development.

The very poor, who should be the target of microfinance, have not been able to take advantage of the BDFC's group and small individual schemes because of the lack of security or ability to form groups. Ways to include such households need to be studied and may involve loans with smaller amounts (less than Nu. 7500, the initial GGLSS amount) and/or schemes that provide opportunities for self-employment. However, measures should be taken to ensure that inappropriate credit does not make these families poorer.

ANNEX 4

COTTAGE AND SMALL ENTERPRISE SECTOR IN BHUTAN

A4.1 Introduction

Bhutan has sustained an average annual GDP growth rate of 6-7 percent in the last decade, driven primarily by hydropower, construction, service and power-intensive manufacturing sectors. However, these sectors have low employment elasticity and minimal linkages in the domestic economy. The private sector is also small and weak, and due to various historical, locational and structural reasons, economic modernization has not been regionally balanced.

Given the low employment elasticity of growth, the limited spillover effects in the domestic economy and a modern sector bias, current trends in economic development and modernization cannot contribute effectively to tackling the challenges related to poverty alleviation, rising income inequalities and unemployment. Hence, there is an urgent need to revisit private sector development policies and design appropriate interventions to bring the vulnerable people into the socio-economic mainstream. Historical experience of developed and developing countries shows that fostering cottage and small enterprises (CSE)⁹⁸ provides viable avenues for the poor to unleash their latent potential and participate effectively in the market economy and improve their livelihoods.

This annex examines the possible role of cottage and small enterprises in addressing the contemporary development concerns in Bhutan, their prospects, and the constraints faced by them.⁹⁹

⁹⁸ It should be noted that the terms small and medium enterprises (SMEs) and Cottage and Small Enterprises (CSEs) are used interchangeably in this Annex while discussing theoretical issues. However, CSEs are the main focus as these enterprises are of concern in the context of Bhutan's level of development and in view of current definitions based solely on input capital.

⁹⁹ For a more detailed analysis of the status of CSEs in Bhutan, see Wangyal (2005).

A4.2 Status of CSEs in Plans and Strategies

The role of cottage and small enterprises, within the overall framework of private sector development has received mention in numerous policy statements and documents. For example, the Vision 2020 document (which outlines the long-term development strategy for Bhutan) states that ‘our [Bhutan’s] potential is seen to reside in two main areas: the further development of our vast hydropower potential and the development of small and micro enterprises’ (RGOB 1999: 35).

This policy statement clearly accords the CSEs a status next to, if not at par with, the hydropower sector. Similarly, the Ninth Five Year Plan document declares that ‘the promotion of small, cottage and micro enterprises as a means to stimulating the rural economy’, is one of the seven objectives for the manufacturing and industrial sector. To this end, the strategy is comprised of enhancing rural income through the development of small-scale handicrafts, bamboo products, woollen textiles, wood works and paper making, depending on the regional resource endowments. Additional interventions include training, technical assistance, marketing and tax incentives.

Despite the high importance accorded to the development of micro and small enterprises, however, a comprehensive policy has not been formulated. Most of the initiatives taken by government agencies to foster CSE development are often carried out in isolation. Some of the activities that have a direct impact on CSE development are listed in Table A4.1.

Table A4.1 Programmes and Activities related to CSE Development

Ministry	Programmes and Activities
Ministry of Agriculture	<ul style="list-style-type: none"> • Extension services and marketing programmes • Provision of subsidized farm machinery and other inputs • Agri-business courses in National Resource Training Institute, Lobyesa, 2000. • Rural Enterprise Development Project • Planned establishment of agriculture training centre in Zhemgang
Ministry of Trade and Industry	<ul style="list-style-type: none"> • Entrepreneurship Development Programme • Small Business Resource Centre • Rural Enterprise Development Project
Ministry of Labour and Human Resources	<ul style="list-style-type: none"> • Establishment of vocational training institutes • Development of Labour Laws
Ministries of Finance and/or Trade and Industry in cooperation with Financial Institutions	<ul style="list-style-type: none"> • Establishment of credit guarantees schemes for youth 2003 • Lending through the BDFC
NGOs	
Tarayana Foundation	<ul style="list-style-type: none"> • Training in pottery, paper making, nettle weaving
Youth Development Fund	<ul style="list-style-type: none"> • Training in carpentry skills

The government does not have policy guidelines or institutional mechanisms to support such enterprises in a comprehensive manner. From Table A4.1, it is evident that several government as well as non-government agencies are engaged in providing direct support to promote self-employment and cottage and micro enterprises. Most of these activities are donor funded and in the absence of a CSE promotion policy or an agency, the only coordination, albeit limited, is provided by the Department of Aid and Debt Management. This role is limited to avoiding duplication of donor-funded projects and does not provide strategic guidance. While the Ministry of Trade and Industry is the apex body for industrial development, it has not been able to assume a lead role in planning and coordinating SME development for various institutional and personnel related reasons.

A policy that by default helps the local small entrepreneurs is the Foreign Direct Investment (FDI) Policy 2002. By setting a minimum investment size of US\$0.5 million for the services sector and US\$1.0 million for the production and manufacturing sector, this policy excludes cottage and small-scale industries from foreign investment and thereby accords protection of this sector for local investors.

As the government agencies cannot intervene at the grass roots level, the role of NGOs such as the Tarayana Foundation and the Youth Development Fund are critical in reaching the rural areas. While instrumental and innovative, the reach of these organizations is limited due to financial and personnel constraints.

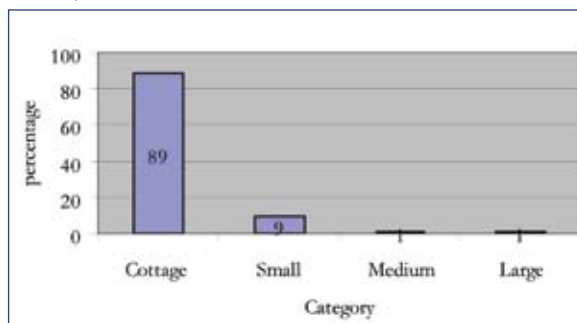
A4.3 Structure and Performance of CSEs

In Bhutan the industrial identification method classifies the scale of businesses solely in terms of size of input capital, as shown in the Table A4.2. In common with many other developing countries, Bhutan’s industrial and services sector is dominated by cottage or small-scale industries (Fig A4.1).

Table A4.2 Classification of Enterprises

Classification	Input Capital (in ngultrum)	Input Capital (US\$ equivalent)	Number of Enterprises
Cottage	less than 1 million	22,000	4637
Small	1 million to 10 million	22,000 to 0.22 million	469
Medium	10 million to 100 million	0.22 million to 2.2 million	54
Large	100 million and above	2.2 million and above	48

Figure A4.1 Industries Classified by Size %

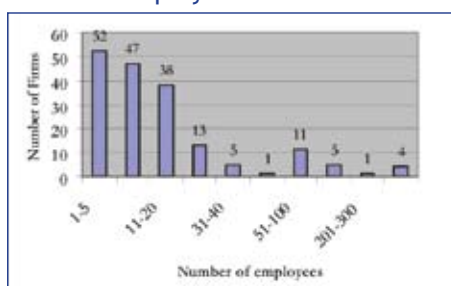


Given the level of economic development and low levels of marketization, and under the current classification method, cottage and small enterprises (CSEs) comprise almost 89 percent of all enterprises.¹⁰⁰ Therefore, the emphasis should be on the promotion of such enterprises to integrate a wider section of society into the market economy and lay the foundations for future private sector development.

The cottage firms include micro enterprises (largely comprised of small family run businesses such as restaurants, tea stalls, rice mills etc.). Most of these enterprises are sole proprietorships with limited scope for growth due to both demand and supply side constraints. Their activities can be broadly classified into supporting industries (that supply components to other industries) or production type firms (that are engaged in semi automated supply of finished products) or final production of the finished product using manual skills (for example, handicrafts). Due to weak linkages with the other sectors of the economy, most of the firms in Bhutan fall into the last category.

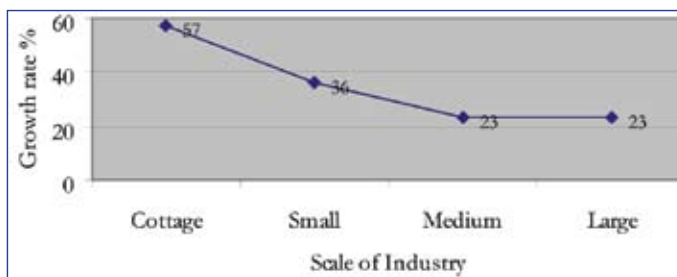
Although Bhutan does not use employment figures in classifying the scale of industries, Fig. A4.2 shows that almost 50 percent of the firms employ less than 10 people and 77 percent employ less than 20 people. This is indicative of the potential that cottage, small and medium enterprises have in employment generation. While CSEs generate less employment in terms of absolute numbers, they are important as they are more evenly distributed geographically. The five large industries that have more than 200 employees are all located in Thimphu, Chhukha and Samtse Districts. In terms of growth as well, the cottage and small industries outperform the larger industries (Fig. A4.3). The exit rates are also known to be high, but these are not captured accurately by existing data.

Figure A4.2 Industries and Size of Employment 1997



¹⁰⁰ While the number of cottage and small-scale industries is large, it should be clarified that this category also includes licensed micro-enterprises such as tea stalls and small hotels run by as few as two people and with limited prospects for expansion of employment or operations. Others include hotels, restaurants, tailoring units, saloons, shoe repair shops, watch and electronic repair shops etc.

Figure A4.3 Average Growth rates 1998-2003



The contribution of CSEs to total exports is, however, negligible in Bhutan. The main contribution of cottage and small-scale industries is in the handicrafts segment, which is largely marketed to tourists visiting Bhutan. Other export items include hand-made paper, flies for fly fishing and incense sticks.

A4.4 Constraints Faced by the CSEs

The CSEs of Bhutan face all the usual constraints that confront SMEs in all developing countries—lack of access to market and technical know-how, bureaucratic regulations, high transaction costs, diseconomies of small scale, and so on. One problem that especially confronts the CSEs of Bhutan is the lack of access to financial resources. Most of the entrepreneurs depend on equity obtained through personal connections and depend on retained earnings for growth and expansion. As a result, they lack access to adequate working capital that allows them to withstand adverse business conditions and to take advantage of new technologies and opportunities. In Bhutan, credit to agriculture and small businesses comprise less than 5 percent of the total credit to the private sector.

Due to scale constraints, modern financial sectors such as securities markets and the banking system often ignore the smaller enterprises. Most of the small and medium enterprises in rural areas are not able to borrow from the Bank of Bhutan and the Bhutan National Bank, due to documentation requirements, high collateral requirements (that vary from 33 percent to 100 percent of the value of the loan) and high interest rates. The reach of the banks is also limited to dzongkhag headquarters and major urban towns.

Hence, the SMEs are dependent on secondary sources, such as moneylenders, and second-tier financial institutions such as the Bhutan Development Finance Corporation (est. 1988). The BDFC specializes in lending for agriculture, microcredit needs, and other small- and medium-scale enterprises. However, most rural people prefer to borrow money from local moneylenders, as they do not need collateral and can repay in kind with their farm produce. The latter aspect is pertinent, as the rural economy is not yet fully monetized.

In 2003, the government launched a Credit Guarantee Scheme to encourage self-employment for young people with technical and vocational skills. Under this scheme, the successful applicants receive interest and collateral free loans of up to Nu. 300,000 upon completion of a course in small business management. The course intends to target sectors such as hairdressing, tailoring units and photography. The course is, however, centred in Thimphu and has limited access for youth in the other areas.

A4.5 Conclusion

Global experience has shown that CSEs have numerous attributes that make them suitable for an economy as that of Bhutan, which is subject to several structural, locational and size constraints. The development of CSEs also provides the foundations for competitive markets and a future course for private sector development. It is also an entry point for potential entrepreneurs to test the markets and develop and expand their enterprises. CSEs provide a majority of the jobs as well as make a valuable contribution to economic growth and social stability.

Despite the recognition accorded to smaller enterprises, Bhutan does not yet have a comprehensive policy and a designated agency to promote CSEs. Further, the lack of an enabling environment for private sector development in Bhutan also constrains the development of such enterprises. A concerted effort to promote CSEs in Bhutan is most timely because the present trends in macroeconomic growth and private sector development do not adequately address poverty, equity and employment issues. While the hydropower sector will enhance government revenues, its benefit for the general population will be limited if appropriate redistribution policies are not designed. It is also important to integrate the poor into the socio-economic mainstream to ensure that the process of globalization does not marginalize them. Furthermore, it is important that all the people have an economic stake in the governance of the country to ensure that democratic reforms are meaningful.

As CSEs will flourish only if the overall environment is conducive for the private sector, efforts must be made to create an enabling business environment. There is recognition at all levels in Bhutan that the private sector faces numerous challenges and the remedies are also well known. From a social, economic and political perspective, it is time for decision makers to exhibit leadership so that Bhutan can be better prepared for the combined challenges posed by poverty, unemployment, inequity, democratization and globalization.

ANNEX 5

HYDROPOWER AND DUTCH DISEASE

A5.1 Introduction

Bhutan has pinned its hopes on the development of its considerable hydropower resources, for which there exists a vast market in neighbouring India, to propel the growth and development of its small economy. It seems that these hopes are being realized, as electricity has become the country's dominant export. Revenue from the sales of hydroelectricity accounts for around 30 percent of total government revenue during the period 1992/93-2001/02, which is expected to increase to around 50 percent with the recent increase in the export electricity tariff and the commissioning of the Tala Hydropower Project in 2006.

However, the increase in hydropower exports have been accompanied by significant structural changes in the Bhutanese economy along with the possibility of an appreciation in the real value of the ngultrum against the Indian rupee, thereby eroding Bhutan's export competitiveness with India. Since 2000, concern has been raised as to whether this is a sign of the 'Dutch disease' and whether this has undermined the country's growth prospects by discouraging production and investment in the tradable sector (agriculture and manufacturing).¹⁰¹

A5.2 Structural Changes

Comparing the structure of production between 1980 and 2003, it is evident that the dominant agriculture sector (composed of agriculture proper, livestock and forestry) has been shrinking

¹⁰¹ World Bank (2000) for Bhutan is the first reference that explicitly mentions the Dutch disease in connection with the development of Bhutan's hydropower sector. It identifies a peculiar strain of the Dutch disease brought on by the large inflow of foreign aid and hydropower exports, that are large relative to the total economy.

and that the energy sector (composed of electricity, gas and water) is definitely booming (Table A5.1). The agriculture sector's share in GDP in constant prices decreased from 52.3 percent in 1980 to 25.2 percent in 2003 with a compound growth of 3.5 percent. On the other hand, the energy sector's share of GDP increased from 0.3 percent to 12.5 percent for the same period, with a compound growth rate of 26.1 percent. This structural change seems to fit the resource movement effect of the 'Dutch disease' (Box A5.1).

Table A5.1 Shrinking Agriculture Relative to Other Sectors
(percentage share of GDP)

Sector	1980	2003	Compound Growth Rate 1980–2003
<i>Tradable sectors</i>	55.5	45.7	
1. Agriculture	52.3	25.2	3.5
2. Manufacturing	3	8.2	12.6
3. Energy	0.3	12.5	26.1
<i>Non-traded sector</i>	44.5	54.3	8.1
1. Construction	10.4	21.1	10.2
2. Wholesale and retail trade, hotels and restaurants	14.8	9.8	5.0
3. Transport, storage and communications	4.2	9	10.4
4. Financing, insurance and real estate	3.4	5.6	9.2
5. Community, social and personal services (Government)	11.2	8.8	5.5

Source: NSB (2004a).

Box A5.1. The Dutch Disease

Countries with an abundance of natural resources with significant export potential have found it to be a mixed blessing for economic development. This was the case for many oil-producing countries that became poorer instead of richer after the oil price hikes of the 1970s. Since then, there have been extensive studies analysing this paradoxical phenomenon which has come to be known as the 'Dutch disease' after the seminal work of Corden and Neary (1982) on the adverse effects of the natural gas discoveries in the 1960s on Dutch manufacturing, essentially through the subsequent appreciation of the Dutch Guilder real exchange rate.

A central feature of Corden and Neary's core model of the 'Dutch disease' is characterized by two effects of the booming energy sector: the resource movement and spending effect.

Resource movement effect

The boom in the energy sector raises the marginal productivity of the mobile factors employed in that sector and thereby draws resources out of the other sectors. This effect has two parts:

- The movement of labour out of the lagging sector into the booming sector lowers the output of the lagging sector. This is called direct de-industrialization—direct because it does not require an appreciation in the real exchange rate, which can be defined as the relative price of non-traded goods to traded goods.
- The resource movement effect creates excess demand for the non-traded sector and results in a rise in the relative price of the non-traded sector or a real exchange appreciation. This brings about an additional movement of labour out of the lagging sector into the non-traded sector and is known as indirect de-industrialization.

Spending effect

If the booming sector employs relatively few resources that can be drawn from the other sectors, or is an enclave in the economy, then only the spending effect applies and the key mechanism of resource allocation is the real exchange rate appreciation.

Increased income created by the booming sector leads to a rise in real income which, in turn, will increase spending on both tradables and non-tradables in the form of government expenditure and private spending, thereby stimulating the demand for both goods. Assuming that the income elasticity of demand for the non-traded sector is positive, the extra expenditure raises the price of the non-traded sector relative to the traded sector or real exchange rate appreciation. Moreover, since the prices of tradables are determined by the world market, the increased demand for tradables will result in increased imports.

However, further scrutiny reveals, however, that the reasons behind the decline of the agriculture sector is not the result of factors of production being drawn out of this sector and into the booming energy sector, primarily because the energy sector is an enclave in the Bhutanese economy. Although the participation of Bhutanese firms has increased in the construction of hydropower power projects, the labour employed during the construction of the on-going power projects, as was the case with Chhukha, is predominantly Indian.¹⁰² The percentage of people employed in the electricity, gas and water supply sector has not changed significantly since 1998 and is still estimated at around 0.4 percent of the total working population by the Labour Force Survey 2004.

While the capital for the construction of hydropower projects is huge (Tala is estimated to cost around Nu. 43 billion, which is more than half of the total Ninth Five Year Plan outlay), as discussed in Chapter 10, hydropower development has been largely financed by India on a 60 percent grant and 40 percent soft loan modality. Hence, the construction of hydropower plants does not entail a shift in capital from other sectors in the Bhutanese economy. On the other hand, if Bhutan chose not to develop its hydropower potential, it is debatable as to whether Bhutan would have received these resources for some other project.

The considerable decrease in the agriculture sector's share of GDP along with the boom in the hydropower sector seems to fit the 'Dutch disease' symptoms of direct de-agriculturalization. However, it must be kept in mind that the agricultural sector in the Bhutanese economy, which was almost totally agrarian before the construction of the first motor road in 1969, can only decrease as the country pursues economic development. The decrease in the share of agriculture to GDP is not the 'Dutch disease' symptom of de-agriculturalization but an outcome of the growth of the other sectors that did not exist before the start of economic development. Its decrease is also the result of the gains in education that have led to an increasing number of people turning to other non-farm activities for employment.

While the share of the agriculture sector to GDP decreased in relative terms, the output of agriculture proper in absolute terms actually increased. This was due to increased yield in cereal crops, vegetables and horticulture produce brought on by improved seeds, farming methods, mechanization and greater access to markets. This is more remarkable since the last two decades have seen increased rural-to-urban migration. On the other hand, the decline in the share of the forest and livestock subsector in the 1990s was the result of government restriction on large-scale

¹⁰² According to the Minister for Labour and Human Resources, there are 37,063 foreign workers with work permits and about 80,000 non-national day workers in Bhutan (83rd National Assembly discussions, Kuensel, 18 June 2005).

logging and the number of cattle reared to prevent deforestation and soil erosion (RGOB 1997).

In Bhutan, the symptom of de-industrialization associated with the 'Dutch disease' does not arise because of the low level of industrialization and the relatively short span of modern development. Contrary to the conclusions of the 'Dutch disease' core model, the manufactured traded goods sector actually expanded following the development of hydropower, with its share of GDP increasing from 3 percent in 1980 to 8.2 percent in 2003. This was the result of the forward linkages provided by the development of the hydropower sector.

Although the non-traded sector has increased on the whole from 44.5 percent to 54.3 percent during the same period, this growth has been boosted by construction works for the hydropower plants and various factories that were established during the period which increased the share of the construction subsector to GDP from 10.4 percent in 1980 to 21.1 percent in 2003. On the other hand, the share of wholesale and retail trade, restaurants and hotels subsector and the government sector decreased during this period.

While, it can be concluded from the above that the structural changes in the Bhutanese economy does not seem to be the result of the 'Dutch disease' through the resource movement effect, there are indications that hydropower exports may have brought about a real exchange appreciation of the ngultrum, indicating a possible erosion of external competitiveness.

A5.3 Real Exchange Rate Appreciation

According to the May 2003 Monthly Bulletin of the Royal Monetary Authority, calculating the nominal effective exchange rate and real effective exchange rate (REER) of the ngultrum indices for Bhutan is an unusual exercise because of the one-to-one peg between ngultrum and the Indian rupee. The problem is further compounded by the free circulation of the rupee in Bhutan and the close economic and financial ties between the two countries. The report also cautions that the calculation of the REER cannot be considered very reliable or representative due to the inconsistencies arising from the CPI time series and the outdated basket of commodities used in the computation of the CPI.¹⁰³

Keeping these limitations in mind, the RMA noted that the IMF, which employed the multilateral approach in calculating the REER of the ngultrum by using the CPI with 1990 as base year, estimated that there was an effective depreciation in the ngultrum from the base period by 5.5 percent against the currencies of its major trading partners for the period 1999 to June 2002. The effective depreciation was further calculated to be only 0.5 percent after discounting for inflation.

On the other hand, the World Bank estimated that there was an appreciation of the ngultrum against the rupee by 4.5 percent in real terms between 1981 and 1999. The real appreciation was particularly rapid even before the commissioning of Chhukha (about 8 percent annually during 1981-1983) and 2.5 percent during 1995-1999 (World Bank 2002a). The World Bank also calculated the bilateral real exchange rates (BRER) of the ngultrum against the Indian rupee for the period 1980-1999 and found that BRER was significantly lower than that of countries with booming

¹⁰³ A new expenditure basket has been selected with the introduction of a new quarterly index from 2003.

natural resource exporting sectors. The World Bank's empirical analysis and regression results indicated that increases in power exports (and capital inflows) have caused real appreciation of the ngultrum. Both the power tariff (in real terms) and the volume of power exports appear to have contributed to the appreciation, implying that future increases in either variable are likely to cause further appreciation of the ngultrum.

However, the World Bank's report found that the appreciation of the ngultrum has been mainly through increases in private sector spending and through monetary disequilibrium. Government expenditure was more on tradables rather than on non-tradables and exerted very little effect on the appreciation of the ngultrum. Moreover, despite changes in relative prices, the production of the tradable sector has not declined. While the price of land and labour have increased during the last decade, hence increasing expenditure on non-tradables, the World Bank's findings also indicated that increased power revenues have been used to increase food imports (tradables) from India.

The 2005 IMF Article IV Mission estimated that the real exchange rate appreciated by around 10 percent over a five-year period after the commissioning of Chhukha and cautioned that, with the commissioning of Tala, the real exchange rate of the ngultrum is likely to further appreciate over the medium term with the consequent increased expenditure on non-tradables (IMF 2005). The Mission also noted that, as a result, the manufacturing sector would likely to be adversely affected through higher wage costs and possible increases in land prices.

A5.4 Impact on Trade

Given the difficulty in calculating whether there has been a real exchange appreciation of the ngultrum due to data shortcomings, the result of such an appreciation—the erosion of external competitiveness or increased imports produced by the supposedly lagging sectors—are examined as a proxy for determining as to whether hydropower development has brought on the 'Dutch disease' in Bhutan.

According to the Fifth Five Year Plan main document, imports in 1981/82 amounted to Nu. 434.3 million with 93.1 percent originating from India. Imports from India included consumer, intermediate and capital goods, with the largest share being metal and metal products (18.6 percent), petroleum products (14.2 percent), foodgrains (5.5 percent), transport equipment (5.4 percent) and textiles and clothing (5.3 percent). Most of the imports were made by the RGOB through quotas for goods that included steel, coal, fertilizers, industrial spirits, edible oils, rice, wheat, sugar and salt. Imports from countries other than India were composed of machinery and equipment financed by foreign aid, automobiles and small quantities of consumer goods.

Since then, imports have been growing, with an average annual growth rate of around 14 percent during the 1990s, and in 2002/03 overall imports stood at Nu. 11,153.4 million, with imports from India accounting for around 73 percent of total imports. Although imports have grown significantly from a small base of Nu. 434.3 million in 1981/82 to Nu. 11,153.4 million in 2002/03, it cannot be directly attributed to an appreciation of the real exchange rate of the ngultrum. The growth in imports is the result of the surge in imports of materials and equipment for hydropower projects and the establishment of various export oriented-industries. These imports are not replacing

domestic production, however, since hardly any substitute of the imported consumer goods and capital equipment have ever been produced in Bhutan, and instead have been imported.

Although the import of food items, especially rice has increased, this increase must be seen in the light of increased demand for it in Bhutan as a result of the shift to rice from other cereals, increasing population combined with limited wetland for rice production and the presence of large numbers of Indian expatriate workers for construction projects whose staple diet is rice. It must also be kept in mind that the increase in imports over the last two decades is also the impact of trade liberalization, easing of restrictions on the foreign exchange account, the rapid growth of the economy and increasing monetization.

Turning now to exports, figures show that after the commissioning of Chhukha the composition of Bhutanese exports has broadened and the volume has substantially increased. The driving forces have been hydropower development and the establishment of the calcium and carbide and ferro silicon alloys industries. Electricity has displaced agricultural produce as Bhutan's major export to its main trading partner, India. However, the booming electricity exports have not eroded Bhutan's export competitiveness, unlike the experience of 'Dutch disease' countries that experienced a boom in their natural resource exports, especially oil.¹⁰⁴

While exports of agricultural produce have picked up since 1995 as a result of increased horticultural exports, in which Bhutan enjoys comparative advantages, the share of traditional exports have decreased since 1985 as their rate of growth has failed to keep up with the growth of exports as a whole (ITC 2000). A major reason for the decrease in the export share of agricultural produce is the fall in cardamom exports from 14 percent in 1985 to 2.4 percent in 1995. This decrease is more the result of stringent environmental conservation policies, which have limited the availability of firewood to dry the cardamom after harvesting, rather than of export competitiveness. Similarly, with the introduction of the policy of limiting export of forest products to value-added produce, its share of total exports to India have decreased from 25.3 percent in 1985 to 3.6 percent in 2003.

Although, the export share of manufactured goods, composed of carbide, cement and ferro silicon, has declined since 1995, it must be remembered that, except for cement, the other industries were set up because of the availability of cheap hydropower. The decline in the export share of these industries is largely the result of availability of cheaper exports to India from China and Russia. This does of course reflect a loss of competitiveness for Bhutan, but the reason for it does not lie within the economy of Bhutan.

A5.5 Conclusions and Policy Options

While the dominant agriculture sector has shrunk with the booming energy sector, these structural changes over the last two decades are not the result of the result of the 'Dutch disease' but the transition of a largely subsistence economy towards monetization through the exploitation of its comparative advantage in hydropower development. Contrary to the de-industrialization faced by countries that suffered the 'Dutch disease', the output of manufacturing sector increased after the commissioning of Chhukha, the first major hydropower plant.

¹⁰⁴ *The majority of the literature takes oil or minerals as the booming sector. However, the boom to an economy can be a result of technological progress, a windfall discovery, or an export expansion because of an increase in world price (Corden and Neary 1982).*

Although the real exchange rate of the ngultrum may have appreciated, imports of tradables have not replaced domestically produced goods. Nor has it eroded the export competitiveness of Bhutanese products. Non-power exports have not been discouraged. In fact, exports have increased after the commissioning of Chhukha as it facilitated the establishment of export-oriented energy-intensive industries. Moreover, export of horticultural products, in which Bhutan has comparative advantage, have continued to increase. Moreover, unlike other natural resource export booms based on exhaustible resources (such as oil, gas, coal and copper), Bhutan's hydropower is renewable and environmentally friendly, constituting a permanent source for exports.

The literature on the 'Dutch disease' reveals that the main causes that turn a welfare-improving foreign exchange inflow into a true disease-like scenario of falling incomes originate in the political economy sphere. The effects of the 'Dutch disease' were worsened by the expansion of government employment, increase of superfluous government spending and increase in borrowings from international capital markets against booming sector incomes.

The effects of the booming hydropower sector have been minimized by Bhutan's high savings rate and investment in basic social and physical infrastructure. Although the number of government ministries has increased with the restructuring of the government in 2003, its consumption expenditure has not increased significantly after the development of hydropower. However, government salaries are increased with every revision in the export power tariff, prompting increases in the price of land and labour.¹⁰⁵ While hydropower exports are considerable and will increase with the commissioning of Tala, the government of Bhutan has not increased borrowings on the strength of these earnings. Rather, it has sought grants over loans as a means of financing economic development. Loans, when taken, have been at very concessionary rates.

While the core model is known as the 'Dutch disease' model, Corden states 'the true 'Dutch disease' in the Netherlands was not the adverse effects on manufacturing of real appreciation but rather the use of booming sector revenues for social service levels which are not sustainable, but which it has been politically difficult to reduce' (Corden 1984: 359). Hence, in the long run, the government of Bhutan must ensure the sustainability of the relatively large expenditure outlays for its free health and education programme, not only through utilization of hydropower revenues but also through the continued support of the donor community and the availability of alternative financing such as the Health Trust Fund.

Natural resource export booms can also have an important monetary effect through net reserve accumulation. The World Bank (2002a) suggests that the real appreciation of the ngultrum was also the result of the accumulation of international reserves through net capital inflows and power exports, and not by power exports alone. The World Bank cautions that unless the increase in international reserves is fully sterilized, inflation could lead to further real appreciation of the ngultrum.

In conclusion, despite a possible real appreciation of the ngultrum, there seems to be no evidence that booming hydropower exports have brought on the 'Dutch disease' syndrome in Bhutan. However, this could change with the commissioning of Tala and the other hydropower projects that are slated for development.

¹⁰⁵ *The January 2004 revision of the power tariff resulted in a 40 percent increase in salaries for civil servants and elected leaders, amounting to an increase of around 8 percent (Nu. 520 million) in the government wage bill.*

This report is part of a series of country case studies and thematic synthesis reports on the Macroeconomics of Poverty Reduction being prepared, published and disseminated under UNDP Asia Pacific Regional Macroeconomics of Poverty Reduction Programme (MPRP). This programme is currently housed at the UNDP Regional Centre in Colombo's (RCC) Pro Poor Policy Reforms and Local Poverty Initiatives cluster.

If Asia and Pacific countries are to reach the Millennium Development target of halving extreme income poverty by 2015, rapid and more equitable growth is essential. In order to promote such growth, UNDP's Regional Bureau for Asia and Pacific, launched in early 2002 the Regional Programme on the Macroeconomics of Poverty Reduction. The objective of the programme was to identify and promote more pro-poor growth options as well as to foster greater consistency between macroeconomic policies and poverty reduction strategies. Due to lack of comparable data, there has only been a few systematic analyses of the impact of macroeconomics policies on poverty reduction in the region. The set of macroeconomic policies that reduces poverty can also vary from country to country depending on their level of development, resources endowment and political issues, etc. Given this background, the MPRP has been carrying out country case studies in participating countries. Synthesized thematic reports based on these country level studies have also been prepared, published and disseminated in the areas of fiscal policy, monetary policy, exchange rate policy, privatisation, financial liberalisation and trade liberalisation.



UNDP Regional Centre in Colombo
23, Independence Avenue,
Colombo 07, Sri Lanka
Tel: +94 11 4526400
Fax: +94 11 4526410
Email: rcc.registry.lk@undp.org
www.undp.rcc.lk

ISBN 99936-705-3-7