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# Bhutan: Development in a Himalayan Kingdom

April 7, 1983

South Asia Programs Department  
in association with the  
Asian Development Bank

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CURRENCY EQUIVALENTS a/

<u>End-March</u>	<u>Currency Unit</u>		
1977	US\$1.00	=	Nu 8.80
	Nu 1.00	=	US\$ 0.11
	Nu 1 million	=	US\$ 113,636
1978	US\$1.00	=	Nu 8.43
	Nu 1.00	=	US\$ 0.12
	Nu 1 million	=	US\$ 118,624
1979	US\$1.00	=	Nu 8.15
	Nu 1.00	=	US\$ 0.12
	Nu 1 million	=	US\$ 122,699
1980	US\$1.00	=	Nu 8.19
	Nu 1.00	=	US\$ 0.12
	Nu 1 million	=	US\$ 122,100
1981	US\$1.00	=	Nu 8.19
	Nu 1.00	=	US\$ 0.12
	Nu 1 million	=	US\$ 122,100
1982	US\$1.00	=	Nu 9.35
	Nu 1.00	=	US\$ 0.11
	Nu 1 million	=	US\$ 106,952

Average Annual Exchange Rates

1976/77	US\$1.00 = Nu 8.94
1977/78	US\$1.00 = Nu 8.56
1978/79	US\$1.00 = Nu 8.21
1979/80	US\$1.00 = Nu 8.08
1980/81	US\$1.00 = Nu 7.89
1981/82	US\$1.00 = Nu 8.93

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a/ The Bhutan Ngultrum is tied on a one-to-one basis to the Indian rupee. Average annual exchange rates relate to Bhutan fiscal years which run from April 1 to March 31.

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ABSTRACT : This is the first World Bank report on the Kingdom of Bhutan, which joined the institution in 1981. The report, therefore, is primarily introductory in nature, providing an overview of the economy, its current stage of development, and the development strategy. While little has generally been known about Bhutan, basic economic conditions are relatively favorable, contradicting the very low per capita income. The ratio of population to land is relatively low and there is little landlessness. Literacy and public health remain poor, however. Development efforts began around 1960, and since then Bhutan has made much progress towards establishing basic economic and social infrastructure, despite difficult physical conditions and pervasive shortages of trained manpower. Nevertheless, economic and social gains are difficult to evaluate as the economic and social data base is very thin. Chapter I of this report focuses on the geographical and historical background to help explain the evolution of Bhutan's cautious development strategy. Chapter II provides an overview of the structure of the economy, the level of development, and the role of the country's economic institutions. Chapter III comprises more in-depth discussion of key economic sectors and can be read selectively without loss of overall continuity. Chapter IV focuses on Bhutan's human resources and on Government programs to improve education and health standards. Chapter V reviews the Fifth Plan, which represents an unprecedented development push that involves not only a substantial increase in investment but also changes in the development strategy. However, the manpower, physical, and financial constraints to development in Bhutan are significant. These constraints and the role external assistance can play in helping overcome them and in enabling an acceleration in development are discussed in Chapter VI.



## GLOSSARY AND PRINCIPAL ACRONYMS

BES	-	Bhutan Engineering Services
BGTS	-	Bhutan Government Transport Service
BHU	-	Basic Health Unit
BRO	-	Border Roads Organization
CSO	-	Central Statistical Organization
DAC	-	Druk Air Corporation
Dzong	-	Fortified monastery housing both the civilian administration and the monastic institution
Dzongdag	-	District officer
Dzongkhag	-	District
EPF	-	Government Employees Provident Fund
FCB	-	Food Corporation of Bhutan
GHz	-	Gigahertz
GWh	-	Gigawatt-hour (1,000,000 KWh)
ha	-	Hectare (2.47 acres)
kg	-	Kilogram
km	-	Kilometer
kV	-	Kilovolt
KWh	-	Kilowatt-hour
m	-	Meter
mi	-	Mile (1.61 km)
mm	-	Millimeter
MT	-	Metric ton
MW	-	Megawatt
PWD	-	Public Works Department
RICB	-	Royal Insurance Corporation of Bhutan
STC	-	State Trading Corporation
TCB	-	Transport Corporation of Bhutan
TOE	-	Tons of Oil Equivalent (1.47 tons of coal equivalent or $43.95 \times 10^9$ joules)
tsheri	-	Shifting cultivation
UTB	-	Unit Trust of Bhutan



# BHUTAN: DEVELOPMENT IN A HIMALAYAN KINGDOM

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MONEY, CREDIT, AND PRICES  
(End-March)

	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
		(Nu million)		
Money and Quasi Money	57.7	80.0	105.7	145.5
Bank Credit to Public Sector	-62.0	-59.1	-53.6	-78.7
Bank Credit to Private Sector	23.7	32.9	28.3	45.9
Money and Quasi Money as % of GDP	..	..	10.4	..
Annual % Changes in:				
Consumer Price Index	12.1	13.5	9.6	10.3
Bank Credit to Public Sector	..	+4.7	+9.3	-46.8
Bank Credit to Private Sector	..	+38.8	-14.0	+62.2
Consumer Price Index (1977/78 = 100)	112.1	127.2	139.4	153.7

	<u>BALANCE OF PAYMENTS, 1981/82 a/</u>		<u>MERCHANDISE EXPORTS, 1981/82 a/</u>	
	(US\$'000)		US\$'000	%
Export of Goods	714.0			
Import of Goods	-3,307.0		Cardamom	614
Services and Private Transfers (net)	-917.0		Gum rosin	80
Total Current Account	-3,510.0		Handicrafts	17
Official Capital Transfers (net)	6,400.0		Timber	3
Change in Reserves (decrease -)	2,890.0		Total	714
				100.0

RATE OF EXCHANGE b/  
(Annual Average for Fiscal Year)

1978/79  
US\$1.00 = Ngultrum 8.21  
Ngultrum 1.00 = US\$0.12

1979/80  
US\$1.00 = Ngultrum 8.08  
Ngultrum 1.00 = US\$0.12

1980/81  
US\$1.00 = Ngultrum 7.89  
Ngultrum 1.00 = US\$0.13

1981/82  
US\$1.00 = Ngultrum 8.93  
Ngultrum 1.00 = US\$0.11

a/ With countries other than India.

b/ The Ngultrum is freely exchangeable in Bhutan with the Indian rupee on a one-for-one basis.

.. Not available.

## SUMMARY AND CONCLUSIONS

### The Setting

i. Although it has been some twenty years since the Kingdom of Bhutan began to emerge from behind its natural and self-imposed barriers of obscurity, knowledge abroad of internal developments has remained scanty. The extent of progress of the past 20 years and the overall standard of living consequently both come as somewhat of a surprise to most first-time visitors. The standard of living clearly belies the low per capita income of about \$120--one of the lowest in the world. With a population which is officially estimated at 1.2 million, pressures on land, food, and housing all appear much less than elsewhere in South Asia, although literacy and life expectancy both remain low. There are, however, probably few countries in which development has resulted in less disruption to the traditional way of life.

ii. Bhutan is small and landlocked. It has an area of about 46,500 sq km and is bordered by the Tibet region of China in the north, and elsewhere, by northeast India. The terrain is some of the most rugged in the world, rising from altitudes close to sea level to over 7,000 m. It is characterized by hills that rise steadily from the narrow strip of plains to the High Himalaya, and which are cut by deep, generally north-south, river valleys. It was this combination of relatively remote location, rugged terrain, and formidable natural borders coupled with a strong sense of independence that enabled Bhutan to remain largely unaffected by events in the outside world as long and as easily as it did.

iii. Bhutan is relatively well endowed with natural resources, and for most of these and their products, there are ready markets in resource-scarce neighboring countries. Bhutan's location on the steep southern watershed of the Himalaya has endowed it with enormous hydro-power potential which is just beginning to be tapped. Construction is underway with Indian assistance on a 336 MW hydro-power project at Chukha on the Wang Chu river in western Bhutan. As the electricity generated will be far in excess of Bhutan's domestic needs, most of it will be sold to India. Bhutan's other major natural resource is its forests, which cover about half the land area. At present, extraction is only a small fraction of the annual forest increment, while some of the forest is decaying of overage. There is thus significant potential for forest-based exports from Bhutan; however, care will have to be taken to ensure that the deforestation-related problems that plague other areas of the Himalaya do not arise in Bhutan. Bhutan also has deposits of certain minerals, including limestone, dolomite, graphite, lead, zinc, gypsum, copper, and coal, but for the most part deposits are inaccessible and detailed surveys have yet to be undertaken.

iv. Historical developments in Bhutan were closely linked to those in Tibet. Starting in about the eighth century, a number of Buddhist sects moved south from Tibet to Bhutan where they established themselves in the main valleys. In the seventeenth century the country was unified under a theocracy, with full powers in theory resting with the Shabdung, a lama whose

position was filled through reincarnation. Over time, however, the control of the Shabdungs declined and there was constant turmoil as the civilian governors of various regions competed for power. In 1907, however, Ugyen Wangchuck, then the governor of eastern Bhutan, emerged as sufficiently strong to unite the country under a hereditary monarchy.

v. During the nineteenth century, Bhutan had had to accommodate itself British power in the south and in the process lost almost all its land below the foothills. In 1910, Bhutan signed a treaty with Britain under which Bhutan agreed to be guided by the advice of the British Government in regard to its external relations while Britain pledged non-interference in the internal affairs of Bhutan and an annual payment to the Bhutan Government. In 1949, Bhutan signed a treaty with the Government of India which reflected the same major principles. Despite these treaty ties to the south, Bhutan's principal external focus remained Tibet, with whom it shared a common religion and its main trade ties. However, the Tibetan uprising of 1959 and the Sino-Indian border war of 1962 forced Bhutan to close its borders to Tibet and align itself with India. In 1959, Bhutan began receiving its first economic aid from India and started constructing its first roads. Since then, Bhutan's relations with India have been close. Bhutan has also gradually been expanding its international ties--in 1962 it joined the Colombo Plan, and 1971, the United Nations. In 1981, it joined the International Monetary Fund and the World Bank, and in 1982, the Asian Development Bank. Apart from India, Bhutan also has full diplomatic relations with Bangladesh.

vi. In the half century following the establishment of the monarchy, successive kings concentrated on centralizing their power and integrating the various factions and regions into a stable political entity. The third monarch, King Jigme Dorji Wangchuck, recognized that isolation would eventually have to end and that change was inevitable. He was determined, however, that change should come from within Bhutan. Accordingly, he initiated unprecedented domestic reforms and embarked on a course of carefully expanding Bhutan's international ties. His successor, King Jigme Singye Wangchuck, who came to the throne in 1972, broadly continues to follow the same pragmatic course.

#### The Economy

vii. Patterns of economic activity are simple and still strongly rooted in the past. These were mainly dictated by physiographic features. Settled agriculture concentrated in small communities spread out along the main river valleys of the inner Himalaya and in the southern foothills. Swiftly flowing rivers, mountainous terrain, and dense forests separated these settlements, and led to an economy of small subsistence-oriented communities. Beyond and between these settlements, migrant herders grazed herds of sheep and yaks on alpine grasslands. Parallel to this traditional economy, a small and tightly controlled modern sector has emerged over the past 20 years.

viii. Reflecting the early stage of development, agriculture and animal husbandry account for almost half of GDP, and provide the main livelihood to about 95% of the population. Landlessness is not serious and farmland appears to be equitably distributed. Foodgrains production is, however, inadequate to meet needs, and additional amounts are imported from India. Maize, grown mainly in the east, is the predominant foodgrain, accounting for almost half of total production. Paddy, which accounts for about one-third of production, is the main crop in the west. Wheat and other foodgrains are grown at higher altitudes, or as second crops. Other important crops include chillies, pulses, and oilseeds at lower altitudes, and potatoes at higher elevations. In recent years, apples, oranges, and cardamoms have emerged as cash crops in the south and west. Although the forestry sector accounts for 15% of GDP, this may be low by historical standards, due to restrictions on commercial logging introduced in 1979. Industry accounts for only about 6% of GDP, due to the small domestic market and scarce domestic entrepreneurial capacity. Three relatively large industries--a 100,000 MT per year cement factory given on a grant basis by India, a distillery complex, and a fruit processing plant--account for most of the value added. Services account for around 30% of GDP, with public administration and social services accounting for close to half of those. Tourism contributes only about 1% of GDP, despite its significance as a revenue and foreign exchange earner.

ix. For an economy that nearly 20 years ago functioned largely without trade, Bhutan's present dependence on trade is surprisingly high--imports in 1981/82 amounted to about 40% of GDP; exports, to about 17% of GDP. Almost 95% of the trade is conducted with India, mainly because of Bhutan's landlocked position, but also because a state of free trade exists between the two countries. Imports from India comprise mostly essentials--foodgrains, textiles, petroleum products, metal products, machinery, and transport equipment; while the main exports are cement, agricultural produce, and forest products. The principal overseas export is cardamoms; the primary imports, automobiles and machinery. The large trade and current account deficits have been more than offset by large capital inflows--mainly from India--and Bhutan has accumulated relatively comfortable foreign exchange reserves. Trade and transit to third countries is governed by a Trade and Commerce Treaty with India signed in 1972, and subsequent changes in procedures made in 1978. The treaty expired in 1982 and a new one is under negotiation. Due to the good relations between the two countries, trade and transit matters do not present a significant development constraint.

x. Monetization of the economy is limited. As there are no controls on trade and payments with India, and because Bhutan has received large cash grants from India, the Indian rupee circulates freely. In 1974, the Government began issuing ngultrum, the official currency of Bhutan, but rupees still account for most of the currency in circulation. The two currencies are freely exchangeable within Bhutan on a one-for-one basis. Apart from the Royal Monetary Authority established in 1982 to provide central banking services, the financial sector comprises the country's only

commercial bank--the Bank of Bhutan--owned jointly by the Government and the State Bank of India, and three non-bank financial institutions. Over time, the Government intends to move to a ngultrum-based monetary system; however, it recognizes that the transition must necessarily be slow to maintain full confidence in the ngultrum.

xi. Historically, the Government had simply tailored expenditures to match revenues. The Ministry of Finance did not prepare its first budget until 1971. That budget--the so-called "civil" budget--covered only the needs of non-development ministries and was funded from domestic revenues. The requirements of the development-oriented ministries were met under a separate "development" budget which had been established in the early 1960s to allocate Indian aid. This dual budgeting practice continued through 1980/81, mainly because there were only limited domestic financial contributions to the development effort. Excluding the gross receipts of a number of government departments and corporations, revenues amounted to a relatively low 7% of GDP; however, the Government also mobilizes considerable domestic resources through compulsory and voluntary labor schemes, which are not reflected in the revenue estimate. The revenue base is narrow, with two sources, the Indian excise tax refund and liquor excise duties, accounting for over half of total revenues. However, the Government's ability to raise revenues is constrained by the free trade situation with India; while this results in many benefits to Bhutan, it severely limits the Government's ability to tax international trade, normally a major source of revenue to low income countries. Free trade and the long common border also limit the Government's flexibility in imposing independent sales taxes.

xii. The Government's difficulties in mobilizing domestic revenues have been reflected in constantly growing deficits on current account in the budget. Including capital expenditures, overall budgetary deficits have exceeded 20% of GDP. Nevertheless, budgetary policy must be considered conservative, as there has been little recourse to expansionary finance, or to borrowing from domestic financial institutions despite their high liquidity. This has been primarily due to the high level of external assistance Bhutan receives, and the flexibility the Government has in utilizing the Indian aid. In 1980/81, Government of India budgetary assistance amounted to 16% of GDP. In addition, the Government of India has been providing at least as much assistance outside the budget, either as separate projects like the Chukha hydro-power project, or through the budgets of Indian Government departments operating directly in Bhutan. In 1980/81, overseas assistance (\$8 million), mainly from the UN, amounted to the equivalent of about 7% of GDP. Total recorded external assistance (excluding Chukha assistance, which is extra-budgetary) was equivalent to a high 22% of GDP or about \$25 per capita. Including Chukha assistance, these rise to 38% of GDP and \$44 per capita, respectively.

xiii. Even though the economic status of the population is relatively good, education gains have been limited and health conditions remain poor.

Progress has been difficult to gauge, due to the almost total lack of demographic statistics. Thus, while the population is officially estimated at close to 1.2 million, the actual population is in fact unknown. Although literacy is increasing rapidly, it remains a low 10%. The Government is committed to free and universal primary education, but enrollment amounts to only about one-fifth of the age group. Enrollment in secondary education is restricted and is guided by projected manpower requirements, in order to avoid educating more graduates than can be productively absorbed. Although Bhutan has serious shortages of trained manpower, it is, however, at present unable to fill those enrollment quotas. Infant mortality is high and life expectancy is a low 43 years. The main problems would appear to be gastro-intestinal diseases which affect the ability to utilize food, rather than any lack of food. Diseases such as tuberculosis, skin diseases, and goiter are also prevalent. Health services are limited, mainly due to shortages of medical personnel.

#### Development Programs

xiv. Development efforts in Bhutan trace back to 1959, when Bhutan began receiving Indian economic assistance. Although Bhutan completed four development plans during the two decades 1961-81, modern public administration and development planning were in the early stages of evolution for many of those years. Consequently, the volume and the composition of actual expenditures often differed considerably from the original plans. Nevertheless, expenditures consistently doubled from one plan to the next, and significant achievements were made--the country ended its physical inaccessibility and linked the main regions of the country through a well-conceived road network and a communications system. Basic social infrastructure was established in many parts of the country, and significant gains were made in education. Nevertheless, the King felt that increased popular participation in the plans was possible. He was also concerned that domestic resources had consistently failed to cover the recurrent budget costs. These concerns led to fundamental changes in development strategy for the Fifth Plan (1981/82-1986/87).

xv. In order to achieve a pattern of development more consistent with popular desires, some 25% of total Plan expenditures are to be decentralized and implemented by district administrations according to development plans drawn up by the individual districts under central supervision. It was felt that this would result in more effective administration of district development programs. Accordingly, a large number of line ministerial staff have been transferred from the central to district administrations. An important condition for including projects in the plans was that the required manual labor be provided on a voluntary basis. This would reduce development costs and make possible a greater overall development effort. While it is still too early to determine how successful this decentralization will be, its chances of success seem good. The principal problems appear to lie in its spreading scarce trained manpower even more thinly, and in their removal from direct central technical supervision.

xvi. To improve fiscal performance, the Government proposes to invest about 37% of total Plan expenditures in a number of relatively large export-oriented, resource-based projects which would generate financial surpluses for the budget. These budgetary earnings are to be supplemented by several other major fiscal reforms introduced recently to improve the efficiency of resource use, including a 5% reduction in the civil service, the consolidation of the dual budget system, a reorganization of budgetary disbursement procedures, and the removal from the budget of a number of commercially-oriented government services, such as tourism. Several new taxes have been introduced on commercial activities. There is probably scope for further increasing domestic resource mobilization by improving sales tax administration, and by removing several other public services (such as communications) from the budget to encourage them to greater efficiency.

xvii. Total outlays under the Fifth Plan (which excludes the Chukha project) are to amount to Nu 4,338 million, almost triple those of the Fourth Plan. At present, the Plan has a financing gap of Nu 1,335 million, of which roughly over three-fourths is associated with the large resource-based projects. This is primarily the result of a decision to allocate most already-committed aid and domestic resources to non-development activities and to the development activities of existing government departments. However, the overall size and the financing gap of the Plan are likely to be less than projected as the technical and economic viability of the major resource-based projects is still under study, which suggests that implementation could be delayed or may not proceed at all. Moreover, if they prove viable, it should be possible to attract additional financing for these projects.

xviii. Apart from the large resource-based projects, most projects proposed under the Plan are relatively small and simple; they are also appropriate to Bhutan's needs and current level of development. As under past plans, implementation is likely to lag, given shortages of technical and administrative staff and the relatively ambitious quantitative targets in some sectors. In agriculture (12% of outlays), the principal focus is on the intensification of existing land use rather than expansion into new areas, while animal husbandry programs (3%) aim at increasing the general level of productivity through the introduction of exotic cross-breeds and at addressing the crucial winter fodder constraint. Forestry development (7%) centers around several wood processing industries designed to increase exports of manufactured forest products. While this strategy is generally sound, the Government should be careful to ensure that the blend of exports is the one which indeed maximizes net export earnings. Proposed investment in power (17%) includes a number of relatively large generation and transmission projects. These include two medium-sized hydro-power projects aimed at meeting domestic demand. While studying the viability of these individual projects, the Government also proposes to undertake an overall master plan study of the power sector. Industrial development accounts for over 17% of proposed outlays, due to the large export-oriented, resource-based projects. As discussed above, the viability of many projects has not yet been established, while some will also require ancillary

investments before they can proceed. It is likely, therefore, that investment in this sector will be lower than projected. Outlays on land transport infrastructure (11%) focus primarily upon establishing a fourth north-south road, upgrading sections of the existing road network, and on creating feeder roads. The roads program may be somewhat ambitious, while allocations for road maintenance appear to have been underestimated. About 2% of total resources are earmarked for the establishment of a national airline; this may prove inadequate. Communications provisions (2%) aim mainly at upgrading the quality of services and extending them to as yet unserved areas. Education (8%) and health (4%) outlays are relatively modest, reflecting a strategy of consolidating and upgrading existing programs and facilities, rather than undertaking substantial new investment. While the education strategy appears sound, a somewhat more aggressive approach could be justified in health. The development program in water supply and sanitation (3%) is very ambitious, considering likely implementation constraints.

xix. How close the Government will in fact come to implementing the Fifth Plan will depend in part on how easily resource constraints can be overcome. Bhutan will continue to rely heavily on expatriate technical and manual labor in project implementation, although the Government will find it difficult to circumvent the domestic shortage of administrative manpower, positions normally best filled by nationals. It is, therefore, this manpower shortage more than any other which is likely to constrain the development effort. The rugged terrain is a considerable constraint, but for the most part, transport and communications infrastructure is good and is relatively underutilized. The pervasive power constraint should ease by late 1984 with the commissioning of the Chukha project.

xx. With the Fifth Plan, the Government has shown itself no longer satisfied with simply matching development expenditures to committed resources; as a result, financing has also become a constraint to Plan implementation. As discussed above, there is some scope for raising revenue, while it should also be possible to borrow from the domestic financial institutions. These borrowings should, however, be carefully monitored to ensure that the institutions can maintain adequate liquidity and meet private sector credit needs, and that rupee foreign exchange reserves are not unduly drawn down. These additional resources notwithstanding, most of the gap will have to be met through increased external assistance. Given Bhutan's early stage of development, its small size, and the large scale of many development projects, the aid should be on concessional terms and finance full foreign exchange costs as well as a significant proportion of local costs. Substantial technical assistance and training are also required through all stages of the project cycle. As many projects will be beyond the scope of individual donors, co-financing is likely to play an important role in mobilizing aid for Bhutan.



## Chapter I: THE SETTING

### INTRODUCTION

1.01 It has been barely twenty years since Bhutan, then the most isolated and isolationist of the Himalayan kingdoms, entered the modern era. Although it was undeveloped in most respects and life was hard, food was abundant, landlessness was low, and there were few homeless. The pressures to develop that were present in other countries did therefore not exist in Bhutan, which gave it the relative luxury of being able to start developing on its own terms and at its own pace. While the economy has apparently not grown very rapidly as a result, there are probably few countries in which development has resulted in less disruption to the traditional way of life. Side by side co-exist a small but dynamic modern sector, and a largely unchanged way of life formed through centuries of Himalayan tradition and the influences of Mahayana Buddhism. Even though Bhutan is about to begin a bold new chapter in its development, these conservative traditions are likely to remain important influences. Some understanding of the geographical, historical, and cultural setting is therefore important if the issues and priorities governing the unique development strategy of this small country are to be appreciated.

### THE PHYSICAL ENVIRONMENT

1.02 Bhutan, with an estimated area of about 46,500 sq km (18,000 sq mi), is a small country. It is relatively compact, with a maximum north-south distance of 170 km and a maximum east-west distance of 300 km. It is also landlocked, being bordered by the Indian states of Sikkim in the west, West Bengal and Assam in the south, and Arunachal Pradesh in the east; and by the Tibet region of China in the north and northwest. The nearest seaport is Calcutta, 750 km by road from Phuntsholing, the main gateway town. Thimphu, the capital, is a further 175 km by road to the north.

1.03 Bhutan's borders are for the most part natural ones. That with the Tibet region is traditional, following the watershed of the Chumbi Valley in the northwest and the crest of the High Himalaya along most of the north. The southern border with India was established under a treaty with Britain in the nineteenth century. For the most part it follows the Himalayan foothills. These rise abruptly from the Brahmaputra plains below, known locally as the Duars. <sup>1/</sup> Thus, Bhutan is almost entirely mountainous, with

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<sup>1/</sup> In Hindi, Duar actually means "gateway" referring to the 18 valleys (11 into Assam, 7 into West Bengal) that traditionally provided access to Bhutan from the plains. Since then, Duars has come to refer to the adjoining plains area itself.

flat land being limited to a few relatively broad river valleys in the mid-country, and small sections of the Duars in the south. These formidable natural barriers and its relatively remote location enabled Bhutan to remain in almost complete isolation as long and as easily as it did.

1.04 In geological terms, Bhutan is young, being formed over the last 30 million years in the collision between the northward-moving landmass of India with Eurasia. Until that time Bhutan, like most of the Himalaya, had formed the bottom of the shallow Tethys Sea, but the immense force of this collision buckled and thrust the land upwards in great waves of land that culminate in the High Himalaya. Simultaneously, glaciers and rainfall carved out deep valleys that generally radiate southward from the main range, eventually opening up onto the Duars below. The resulting terrain is among the most rugged in the world. It rises from altitudes of 160 m above sea level to over 7,000 m, in some areas within distances of less than 100 km, with the intervening land comprising mostly steep hills and deep river valleys.

1.05 The country is usually classified into three geographic zones--the southern foothills, the so-called "inner" Himalaya, and the High Himalaya. The southern foothills rise steeply to about 1,500 m above the plains and extend about 20 km into Bhutan. From there towards the north, the hills of the "inner" Himalaya rise somewhat more gradually. It is this region which contains the relatively broad river valleys--including Paro, Thimphu, Punakha, Bumthang, and Tashigang--which comprise the economic and cultural heartland of the country. The northern reaches of the land contain the main Himalaya range. Although that range does not reach the heights in Bhutan that it does further west, and generally declines from west to east, the highest peaks in Bhutan still exceed 7,000 m. One significant geographic feature within Bhutan is the north-south Black Mountain range which has traditionally separated eastern from western Bhutan, not only geographically but also ethnically and culturally.

1.06 Nearly every valley in Bhutan has a swiftly flowing river or stream, fed either by the perennial snows, the summer monsoon, or both. These rivers gradually merge into four main river systems as they flow south--the Torsa, the Wang Chu, the Sankosh, and the Manas. Only the Torsa River has its primary source outside Bhutan. The two largest systems are the Manas, which drains most of eastern Bhutan, and the Sankosh, which drains the Himalaya range between Bhutan's two highest mountains--Chomo Lhari (7,314 m) in the north-west and Kula Kangri (7,554 m) in the north. Few hydrological records are available, but records covering flows for several years on the Wang Chu river--site of the Chukha hydro-power project (paras 3.64-3.68)--indicate that flows are lowest during December-March, increase during the spring snowmelt of April-May, and peak during the monsoon months of June-September.

1.07 Bhutan has perhaps the greatest diversity of climate of any country its size in the world, ranging from hot and humid sub-tropical conditions in the south to the perpetual ice and snow of the High Himalaya. For the most

part, the climate defies easy description, with altitude, rainfall, and exposure to sunlight and wind all combining to give each valley a unique set of conditions. The most important climatic factor is the southwest monsoon which lasts from mid-June to September, bringing with it some 60-90% of annual precipitation, depending upon the region. Average rainfall ranges from about 2,500 mm in the south (rising to as high as 5,000 mm in localized areas) to perhaps 500 to 1,000 mm in the inner valleys, and to less than 500 mm above about 4,000 m. The monsoon is particularly strong in the west, where it reaches into even the upper valleys, but its impact in the east is diminished by the rainshadow effects of the Black Mountain range. Average daily temperatures in the sub-tropical south range from about 15°C to 30°C. At about 1,500 m the climate becomes cool and misty much of the year as clouds struggle to move into the inner valleys. There, the climate is more variable, but tends to be temperate and show distinct seasons. For instance, average temperatures in Paro range from 5°C in January to 25°C in July. Above about 3,500 m, the climate becomes increasingly severe, with limited precipitation, short cool summers, and long cold winters.

1.08 As the population of Bhutan is small relative to its area, much of the land remains in its natural state. 1/ No comprehensive land use survey has been conducted, but 63% of the country was covered by aerial surveys carried out under the 1974-79 Pre-Investment Survey of Bhutan Forest Resources with assistance from the Government of India. The land omitted was largely uninhabited areas in the north and northwest. As Table 1 shows, 46% of the land is under forest cover, while only 5% is cultivated or inhabited. Assuming that three-fourths of the land omitted from the survey is barren or snow-covered and that one-fourth is seasonal pasture land, pasture land and scrub would account for perhaps 12% of the land area, and barren or snow-covered land, for about 35%. Vegetation in the south varies from tropical deciduous forests to savannah, and supports a wide variety of exotic wildlife (including elephants, tigers, buffaloes, deer, and golden langurs--monkeys found only in Bhutan). The region of the inner valleys contains most of Bhutan's extensive forests. Oaks and other deciduous trees predominate at lower altitudes, but with rising altitude, coniferous trees progressively take over. Above about 3,500-4,000 m, forests give way to scrub and seasonal alpine grasslands, the home of the snow leopard, the musk deer, and the blue sheep. Beyond 4,500 m these, in turn, yield to true alpine tundra and ultimately to the perpetual ice and snow of the High Himalaya.

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1/ For comparative population/land ratios, see Table 21.

Table 1: SURVEY OF LAND USE

	<u>Square Kilometers</u>	<u>Percent of Area Surveyed</u>	<u>Percent of Total Land Area a/</u>
Natural Forest	21,593	74.0	46.4
Cultivated or Inhabited	2,492	8.5	5.4
Alpine Pasture or Shrub	1,924	6.6	4.2
Barren Land	2,702	9.3	5.8
Under Snow Cover	198	0.7	0.4
Lakes and Water Spreads	150	0.5	0.3
Area under Cloud Cover	<u>117</u>	<u>0.4</u>	<u>0.2</u>
Total	29,176	100.0	62.7

a/ Assuming a total land area of 46,500 sq km.

Source: See Annex 1.

#### THE NATURAL RESOURCE ENDOWMENT

1.09 Bhutan is, on the whole, relatively well endowed with natural resources, and in resource-scarce neighboring countries, there are ready markets for many of those resources and their products. Almost half the land area of Bhutan is covered with natural forests, constituting a major resource. According to the 1974-79 survey, about two-thirds of the forest cover comprises relatively quick-growing broadleaf varieties (Table 2). Total exploitation is currently less than one-fifth of the conceivable allowable cut, most of which is for household fuelwood needs (para 3.56). Up to about 1,000 m elevation, broadleaved tropical hardwoods are dominant and in the unexploited stands, they are very dense. Between about 1,500 m and 3,000 m, temperate climate forests of pine and oak predominate, along with indigenous rhododendrons. Oaks tend to be found on the southern slopes, which receive most of the monsoon rains; coniferous forests, on the drier northern slopes. Above 3,000 m to the treeline of about 4,000 m, the forests tend to be coniferous and include valuable reserves of pine, spruce, and fir.

1.10 The 1974-79 survey also indicated that forest cover is relatively evenly distributed across the country, ranging from 63% of the land surveyed in the northwest to 81% in the south (Annex 1). The nature of the forest cover varied considerably, however, with the northwest alone accounting for 50% of the coniferous forests, but only 11% of the broadleaved forest. At the other extreme, the south accounted for 54% of the broadleaved forest, but only 8% of the coniferous cover.

Table 2: FOREST RESOURCES OF BHUTAN  
(in million cubic meters)

	<u>Growing Stock</u>	<u>Gross Allowable Cut</u>	<u>Net Allowable Cut a/</u>
Coniferous	180.9	4.3	3.0
Broadleaf	<u>348.1</u>	<u>12.6</u>	<u>10.9</u>
Total	529.0	16.9	13.9

a/ Gross allowable cut less unusable portions of the cut.

Source: Pre-Investment Survey of Bhutan Forest Resources.

1.11 Although Bhutan's forest resources are large and can easily sustain a larger overall cut than at present, because of accessibility problems, exploitation has been uneven. Thus, while the relatively easily accessible forests, mainly in the southern foothills and near roads, have probably been overexploited and are in need of reforestation, the less accessible forests of northern Bhutan have barely been touched and in many cases are decaying of overage. Care must, however, be taken in exploiting the forest resources as they perform the vital function of protecting the steep watersheds. As experience in neighboring countries has shown, the Himalayan environment is fragile, and deforestation can easily lead to serious problems of landslides and erosion. So far, mainly because of low overall exploitation, Bhutan has largely avoided these problems.

1.12 Bhutan's mountainous terrain and its location on the steep southern watershed of the Himalayan range give it enormous hydro-power potential, and while that potential has never been systematically surveyed, some estimates place it at about 20,000 MW. This potential has barely been tapped, although Bhutan's first major hydro-power station (336 MW) is currently under construction with Government of India assistance at Chukha on the Wang Chu river in western Bhutan. The bulk of the power generated is expected to be exported to India. Additional projects on the Wang Chu river amounting to a further 2,000 MW in capacity have already been identified; however, the potential of these projects is probably small compared to those of the Manas and Sankosh rivers whose flows are each several times that of the Wang Chu.

1.13 Bhutan's mineral resources include limestone, dolomite, coal, gypsum, graphite, copper, lead, zinc, marble, slate, and talc. While detailed surveys of most mineral resources have not been undertaken, preliminary investigations by the Geological Survey of India suggest that exploitation will have to be selective. For the most part, the minerals are of relatively low quality, and known reserves are small, indicating that extraction and

processing costs will be high. Furthermore, they are mostly inaccessible, meaning that supportive infrastructure investments will be required to exploit them. Where the reserves are accessible and of relatively high quality--e.g., slate and marble--the distances to major markets are often too great to make their large-scale exploitation economically viable. The mineral resources in greatest quantity are limestone and dolomite. These occur throughout southern Bhutan, and relatively small quantities are exported in various forms to India. Although the limestone quality is for the most part not high, it is adequate for cement. One cement factory with 100,000 MT annual capacity is already in operation exploiting deposits in the Samchi district (paras 3.47-3.49), and a second larger project at Nanglam in eastern Bhutan is being considered. Bhutan's coal reserves are fairly limited, and almost all the coal mined is exported to India. The coal is of relatively low quality, being pulverized or flaky and having a relatively high ash content and low volatile matter content. Unless blended with higher grade coal, it is unsuitable for most industrial purposes.

## THE HISTORICAL PERSPECTIVE

### The Emergence of a Kingdom

1.14 Although Bhutan has long been inhabited, it is not until about the eighth century A.D. that historical detail begins to emerge. This period coincided with the rise of Tibetan power and its spread to neighboring regions, initiating a pattern that was to continue in varying degree until the mid-twentieth century, with developments in Tibet having an important bearing on events in Bhutan. Buddhism is believed to have originally been brought to Bhutan from Tibet by Padma Sambhawa, who introduced the Nyingmapa sect in the eighth century A.D. However, in the centuries that followed, the Nyingmapa sect was challenged in Tibet by a number of rival sects, and in the religious and political turmoil that ensued, several of those sects were driven south into Bhutan where they established themselves in the major river valleys. Focal points of these settlements were fortress-like dzongs, similar to those that still dominate the main river valleys today. <sup>1/</sup> Dominant among these sects were the Drukpas and the Lhapas of the large Kagyupa sect, which had extended its reach into Bhutan during the twelfth century. Events through the early seventeenth century were shaped mainly by the rivalry between these two groups, with the Drukpas gradually becoming dominant, especially in western Bhutan.

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<sup>1/</sup> Dzongs are large fortified monasteries. Historically, they served as the residence of the monastic establishment and as the seats from which the surrounding areas were ruled. They also provided refuge to nearby inhabitants during periods of invasion. Today, they remain major centers of activity, as they not only continue to house the monastic establishment, but they also serve as headquarters of the civil administrations (except in southern Bhutan which has no history of dzongs).

1.15 The emergence of modern Bhutan can probably be traced back to the early seventeenth century when a prominent Tibetan Drukpa lama, Ngawang Namgyal, lost in a power struggle in Tibet that finally saw the Gelugpa sect, headed by the Dalai Lama, achieve dominance in Lhasa. In 1616, Ngawang Namgyal was forced to flee south to Bhutan. Between then and his death in 1658, he succeeded in uniting the many powerful Drukpa families, and, in a series of struggles with other sects, in bringing all of western and most of eastern Bhutan under his rule. <sup>1/</sup> At the same time, he led Bhutan in resisting several invasion attempts by Tibet, further strengthening his image and his rule. Eventually assuming the title of Shabdung, he established a complete theocracy. To facilitate his rule, he created an administrative structure that in modified form survives to this day. The country was divided into three provinces, each headed by a governor or penlop. Within each province dzong-pons were appointed to administer individual districts; they, in turn, appointed subordinates to administer groups of villages. Towards the end of his rule, the Shabdung appointed two faithful monks to assist him in administering the country. One, called the Je Khempo, or Lord Abbot, was placed in charge of religious affairs, while the other, the Druk Desi, was entrusted with civil matters. While the Shabdung was the ultimate authority, daily administration was left to these appointed officials. The Shabdung also created a State Council comprised primarily of monastic officials to assist in electing these officials and in governing the country. The position of Shabdung was filled through reincarnation; during their periods of minority, the Je Khempos acted as regents.

1.16 While Shabdung Ngawang Namgyal unified Bhutan, making it a distinct political entity and the Drukpa-dominated society that it is today, the theocracy he created was inherently unstable. The long regencies entailed in filling the position of Shabdung through reincarnation meant that the officials who governed on behalf of the Shabdungs built up considerable power of their own. Furthermore, over time the State Council became increasingly secularized, with most civil positions, including those of the Druk Desi, the penlops, and the dzong-pons, being filled by civilians. By the nineteenth century, these had become the principal members of the State Council, with the penlops in particular emerging as the most powerful personalities, effectively pre-empting the powers of the Shabdung himself. The Druk Desi, in theory elected by the Council, in practice became the appointee of the strongest penlop (usually from Paro or Tongsa). Rivalry between the penlops led to continuing internal turmoil. Thus, while there were only 7 Shabdungs during the 250 years of the theocracy, there were 56 Druk Desis. Disarray continued until the turn of the twentieth century when the Tongsa penlop, Ugyen Wangchuck, emerged as strong enough to change the system, in circumstances which were in part created by British geopolitical interests in the area.

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<sup>1/</sup> Tashigang, the eastern-most region, was incorporated by 1667.

1.17 Despite internal turmoil, Bhutan had retained its national unity. For notwithstanding strong trade and cultural links to Bhutan, Tibet had on several occasions attempted to invade Bhutan, attempts which it repelled. Bhutan also presented a united front to the British in the south, but increasingly had to accommodate itself to superior British power. The first contact with Britain occurred in the early 1770s. Bhutan had long controlled a narrow strip of the Duars plains, but in 1772 it extended its control to the Indian principality of Cooch Behar. Anxious to have secure borders, the British came to the assistance of the Cooch Beharis and drove the Bhutanese out. The two parties signed a peace treaty in 1774. Relations remained peaceful until Britain annexed the state of Assam following the Anglo-Burmese war of 1826. Britain agreed to honor an existing arrangement under which Bhutan was permitted to use part of the Assam Duars in return for annual payments. However, these payments continually fell short, and Bhutan continued to carry out intermittent raids along the entire border. Following 20 years of clashes, the British in 1865 occupied the Bengal Duars, forcing the Bhutanese to seek peace. Under the Sinchula Treaty of 1865, Bhutan formally agreed to cede the entire Duars to Britain, in return for a Rs 50,000 annual payment. In addition, both sides agreed to free trade and the extradition of criminals on demand.

1.18 The presence of British power in the south also had a profound effect on domestic politics. Bhutanese leaders felt they had to decide between aligning themselves with the powerful British in the south or with the Tibetans in the north, with whom they had strong traditional ties. As long as Tibet and Britain were friendly, Bhutan was able to maintain good relations with both. In the late nineteenth century, however, repeated border violations by Tibet against Sikkim led to a deterioration in Anglo-Tibetan relations, and in 1903, Britain mounted a military expedition to Tibet. Ugyen Wangchuck accompanied the expedition as a mediator and helped bring about a settlement. In gratitude for this, he was knighted by the British, which further enhanced his already considerable stature. Ugyen Wangchuck had thus come to dominate Bhutan in a way no other leader had in the previous two and one half centuries.

1.19 Two other important events occurred at about the same time. In 1903, the Shabdung died with no reincarnation appearing for some three years, and in 1904, the Druk Desi died. The Je Khempo assumed the responsibilities of the Druk Desi, but being more interested in spiritual matters, left civil affairs to Ugyen Wangchuck. Conditions were thus ripe for major political change, and in 1907 the leading monastic and civilian officials proposed and unanimously approved the creation of a hereditary monarchy under Ugyen Wangchuck. The British, who were anxious to see stable political conditions and strong central leadership in important buffer areas, also supported this development. Thus, Ugyen Wangchuck became the first King of Bhutan, or Druk Gyalpo. In 1910, Bhutan signed a new treaty with Britain, which amended certain conditions of the 1865 treaty. Under the revised treaty, the British

undertook "to exercise no interference in the internal administration of Bhutan", while the Government of Bhutan agreed "to be guided by the advice of the British Government in regard to its external relations". The annual payment to Bhutan was also doubled to Rs 100,000.

1.20 Over the next half century, successive kings concentrated on centralizing the power of the monarchy and integrating the various factions and regions into the stable political entity that characterizes Bhutan today. The basic administrative apparatus remained more or less intact, although officials whose loyalty was still subject to doubt were gradually replaced. However, the kings never tried to exercise control over religious matters; instead, they recognized the continued authority of the Je Khempo in this sphere. In 1926, Ugyen Wangchuck was succeeded by his son, Jigme Wangchuck, who continued the policies of his father and was responsible in great part for keeping Bhutan almost totally unaffected by the tumultuous political and economic developments in the outside world. Contacts with Britain were limited largely to occasional visits by the Political Officer in Gangtok, Sikkim. Even the departure of the British from the sub-continent scarcely affected Bhutan. In 1949, Bhutan signed a Treaty of Friendship with India which reaffirmed the main points of the 1910 treaty--the Government of India agreed to non-interference in the internal affairs of Bhutan, while the Government of Bhutan agreed to be guided by the advice of the Government of India in regard to its external relations. The Government of India also agreed to return about 83 sq km of territory annexed by the British in the Dewangiri region of eastern Bhutan in 1865, and to increase the annual payment to Rs 500,000. 1/ Bhutan thus seemed destined to continue as before, largely isolated, but with significant trade and cultural ties to the north and guided in its limited external affairs by the power in the south.

#### Developments Since 1960

1.21 The first indications of change came in 1950, with the Chinese occupation of Tibet and a declaration by Prime Minister Nehru that "from time immemorial the Himalayas have provided us with magnificent barriers.... We cannot allow that barrier to be penetrated because it is also the principal barrier to India." India's attitude towards Bhutan was spelled out more clearly in 1958, during Prime Minister Nehru's landmark visit to Bhutan. 2/ He stated:

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1/ India continues to make this payment, but by now it is far exceeded by development assistance grants (para 2.28).

2/ To reach Bhutan, Prime Minister Nehru had to travel by road to Gangtok, Sikkim and then by horseback for several days through the Chumbi Valley of Tibet before he reached Paro in western Bhutan.

"...It is therefore essential that I make it clear to you that our only wish is that you remain an independent country, choosing your own way of life and taking the path of progress according to your will. At the same time, we two should live with mutual goodwill. We are members of the same Himalayan family and should live as friendly neighbors helping each other. Freedom of both Bhutan and India should be safeguarded so that none from outside can do harm to it."

During the same visit, Prime Minister Nehru also offered Indian assistance to help Bhutan develop its economy.

1.22 In 1959, the continued rebellion by the Tibetans against Chinese rule erupted into full-scale revolt. The Dalai Lama fled to India and thousands of refugees entered Bhutan. These events raised questions in the minds of Bhutanese leaders as to Chinese motives vis-a-vis Bhutan and convinced them that closer relations with India were desirable. Thus, in 1959, Bhutan began accepting the Indian offers of economic assistance, including assistance in constructing Bhutan's first road, from the Indian border to Paro and Thimphu in the north. In 1960, Bhutan closed its borders to Tibet and instituted a ban on trade, marking the end of over 1,000 years of ties to the north. In 1961, the training of the Royal Bhutan Army was entrusted to the Indian Army. Although Bhutan was not involved in the 1962 Sino-Indian border war, ties between Bhutan and India subsequently became even stronger, leading to the close relationship that continues to this day.

1.23 Over the last 20 years, Bhutan has steadily expanded its foreign ties and assumed its role in the community of nations. In 1962, Bhutan joined the Colombo Plan and began receiving its first economic assistance from abroad. In 1969, India sponsored Bhutan's admission to the Universal Postal Union, and in 1971, its admission to the United Nations. By 1972, Bhutan had also joined the Group of 77 and ESCAP, and in 1973, it became a member of the Non-Aligned Movement. In December 1971, Bhutan had been the second country after India to recognize Bangladesh. In 1979, full diplomatic representation was exchanged, making Bhutan's mission in Bangladesh only its third overall, after New Delhi and its mission to the United Nations in New York. In 1979, a UNDP office was established in Thimphu to administer the growing program of UN assistance to Bhutan. More recently, Bhutan has sought to expand its sources of economic assistance. In 1981, Bhutan joined the International Monetary Fund and the World Bank, and in 1982, the Asian Development Bank. In 1982, Bhutan also appointed honorary trade consuls in Hong Kong and Singapore to help promote overseas trade.

#### THE PEOPLE

1.24 In the absence of a comprehensive demographic survey, the precise ethnic composition of the population is unknown. It is, however, generally classified into three main ethnic groups: the Sharchops, the Ngalops, and

those of Nepali origin. 1/ The Sharchops are believed to be the earliest major group of inhabitants of present-day Bhutan. They live for the most part in eastern Bhutan, are of Indo-Mongoloid origin, and appear closely related to the inhabitants of northeast India and northern Burma. The Ngalops are of Tibetan origin, arriving in Bhutan between the eighth century A.D. and as recently as 1959, bringing with them their Tibetan culture and Buddhist religion which have characterized northern Bhutan.

1.25 The Nepalis, most of whom are Hindus, comprise the third main ethnic group. They were the most recent arrivals, having been brought in during the late nineteenth and early twentieth centuries to work the foothills of southern Bhutan. Since then significant numbers also immigrated on a spontaneous basis. Immigration has been banned since 1959, although relatively large numbers of Nepalis and Indians are permitted to work in Bhutan as contract labor. 2/ They continue to be the predominant ethnic group in southern Bhutan, with estimates of their share of the total population ranging from 20% to over 30%. Integration is the firm policy of the Government. Major Hindu religious holidays are now celebrated alongside major Buddhist ones throughout the country, and intermarriage between southern and northern Bhutanese is being encouraged with financial incentives. Also, under the national education policy, children of secondary school age are sent to boarding schools in different parts of the country. At the same time, the Government is determined to control new immigration. There are strict controls on the use of contract labor from outside Bhutan, and road checkpoints to monitor traffic and population movements. The Government is also in the process of issuing national photo identification cards to all citizens.

1.26 The official language is Dzongkha, which is closely related to classical Tibetan and is written in the classical Ucaen Tibetan script. In southern Bhutan, Nepali predominates, while there are as many as 11 different vernacular languages in the east. Given this diversity of languages, English has come to play an important role. While Dzongkha is taught in all schools, English serves as the language of instruction in secular schools and is also often used in official communications. Schools in southern Bhutan also teach Nepali. Monastery schools, on the other hand, still teach in Cheoke, a classical form of Dzongkha.

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1/ There are also a few communities believed to comprise descendants of the aboriginal inhabitants of Bhutan.

2/ Non-nationals must now have 21 years of residency in Bhutan before they can apply for citizenship.

## SYSTEM OF GOVERNMENT AND ADMINISTRATION

1.27 The era of modern government in Bhutan is young, and the institutions are still in an early stage of evolution. The primary concern of the first two kings had been the establishment of a strong central authority, and by the middle of the century this had effectively been achieved. The penlop system was abolished, and instead, district administrators were appointed who reported directly to the monarchy. Other than the Royal Secretariat, there were no administrative or governing bodies. In short, Bhutan was an absolute monarchy.

1.28 The third king, Jigme Dorji Wangchuck, was the product of a different generation. When he assumed the throne in 1952, Bhutan was a highly stable inward-looking society, but having been partly educated outside Bhutan, he realized that isolation would eventually have to end. It was better, he felt, that the change come from within Bhutan so that the Bhutanese could control its pace and direction themselves, rather than have these determined from the outside. Accordingly, he initiated a series of unprecedented reforms which mark him as a the principal influence in recent Bhutanese history. He was also the architect of Bhutan's careful approach to the outside world, a course which his successor King Jigme Singye Wangchuck, who came to the throne in 1972 at the age of 16, broadly continues to follow.

1.29 In 1953, King Jigme Dorji Wangchuck established by royal order the National Assembly (Tshogdu). Though originally formed as a consultative and advisory body whose functions were in no way binding on the monarchy, the constitution was changed at the King's initiative in 1968 so that all its decisions would be treated as final. However, the king still has the right to address the Assembly personally to request it to reconsider any resolution with which he has serious misgivings. In practice, no such occasion has ever arisen. At the late King's insistence, the Assembly also reluctantly approved a revision to the constitution in 1969, whereby the king or any public official could be forced to resign on a vote of no-confidence in the National Assembly. This recommendation, however, proved fundamentally too radical for the conservative and loyal assembly, and in 1973 it was rescinded following the King's death.

1.30 The National Assembly was originally created with about 130 members, comprising representatives of the people and the monastic establishment, and certain government officials. During the 1960s, membership was increased to 151 with the inclusion of additional officials from the rapidly expanding government. Today it comprises 100 representatives elected for three-year terms on a one household-one vote basis; a Speaker, elected by secret ballot by the Assembly; 10 representatives of the monastic establishment elected on a regional basis, who also serve for three-year terms; and 40 government officials who hold their seats as long as they hold their positions in Government. The latter include members of the Cabinet, heads of important government departments, and the district officers. Assembly members have

complete freedom of speech. The Assembly meets twice a year, in the spring and in the fall. While it discusses all aspects of public policy, its principal focus in recent years has been on development programs. Until recently, the National Assembly provided one of the few forums to discuss local development issues with Government officials; with decentralization, however, most such issues are now resolved at the district level. As a result, the Assembly, which had often convened for over a month, has recently been able to complete its business within two weeks.

1.31 The State Council, which had existed under the Shabdung system to advise him on policy issues, had been disbanded by King Ugyen Wangchuck. In 1965, the practice of having a formal consultative body was reinstated with the creation of the Royal Advisory Council (Lodoi Tsokde). The Council, which is always in session, advises the king on key issues of policy and monitors the implementation of National Assembly resolutions. It comprises nine members who must be approved by the Assembly--two members appointed by the king, two representatives of the monk body selected by the Assembly from a slate prepared by the monastic institution, and five regional representatives selected by the Assembly. The chairman is appointed by the king from among the Council members.

1.32 The Government has grown steadily, in response to full-time administrative needs. Until the mid-1960s, general administration was relatively simple and handled directly by the Royal Secretariat, while development activities were undertaken by the Development Secretariat, which had been created in 1961 to administer Indian economic assistance. As the development effort accelerated and administration and international relations became more complex, it was felt necessary to create a system of ministries, together with a Cabinet (Chart 1). Initially, in 1968, four ministries were created--Home Affairs; Finance; Trade, Industry and Forests; and Development--but in 1971, the Ministry of Communications and Tourism and the Ministry of Foreign Affairs were added. Also in 1971, the Planning Commission was formed. The Cabinet now consists of the Ministers of Home Affairs; Foreign Affairs; Trade, Industry and Forests; and Communications and Tourism; His Majesty's Representatives to the Ministries of Finance and Development; as well as the Deputy Minister of Planning, members of the Royal Advisory Council, and several other high-ranking government officers. While the ministerial structure is somewhat ad hoc, reflecting the organic growth of Government, with certain sectors having their own ministries and the remainder run as departments under the Ministry of Development, this has not posed any significant administrative difficulties. It is likely, however, that several of the larger departments will eventually become separate ministries.

1.33 Bhutan's judicial system, both civil and criminal, is based on that laid down by the Shabdung Ngawang Namgyal in the seventeenth century. While modifications have been made over the years, its Buddhist foundations have remained largely untouched. Until 1968, law was administered by the district governors, with minor cases handled by village headmen, and the most serious cases by the king. In 1968, a separate judiciary was established which included creation of a High Court. This consists of six judges, four

appointed by the king and two elected by the National Assembly, one of whom is normally from southern Bhutan. At the same time, district officials were stripped of their judicial powers and a district court system was established. These district courts are headed by a district judge (Thrimpons), usually drawn from the ranks of the civil service, although village headmen still settle minor disputes. The king can only overturn a High Court decision if he finds legal principles have not been adhered to. There is as yet no legal system covering more modern issues such as corporate law, and most corporations and official bodies are simply established by Royal Charter.

1.34 The local administrative structure dates back to the seventeenth century when the first Shabdung created a network of districts centered around major dzongs. With the abolition of the penlop system, these districts (dzongkhags) fell under direct central rule. In recent years, some of the larger districts, especially in southern Bhutan, have been subdivided. There are at present 18 districts, with the larger districts tending to be the more sparsely populated. As their origins are largely historical and their borders major natural barriers, they are not necessarily ideally subdivided--a number of districts are, for instance, long and narrow, which renders them difficult to administer. Each district is administered by a district officer (dzongdag), who is appointed by the king and who reports to the Ministry of Home Affairs (Chart 2). Previously, district administrations had concerned themselves with matters like taxes, labor mobilization, and law and order, but under the policy to decentralize much of the development effort, the district administrations have been strengthened. Under the district officers, there are now two principal subordinates: the dzongdag wogma, in charge of all development activities in the district (excluding centrally administered activities), and the dzongrab, who administers civil and fiscal-related matters. To assist in administering the district development programs, line ministerial staff have been transferred from central to district administrations (para 5.14). Seven of the larger districts have been subdivided to form an additional 18 sub-districts. <sup>1/</sup> Each sub-district is headed by a drumpa, who reports to the district officer, and who has his own development and administrative staff. Effectively, therefore, these subdivisions function as districts. Districts are further subdivided into blocks, mostly comprising 300-500 families. There are a total of 188 blocks. The more sparsely populated districts such as Gasa and Bumthang have as few as four, the more densely populated like Tashigang, as many as 20. The head of each block (gap, or mandal in southern Bhutan) is chosen by the villagers. He provides the main link between them (or their village headmen when there is more than one village to a block) and the district administration on matters such as taxes and labor mobilization.

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<sup>1/</sup> The following districts have sub-districts: Chirang (2), Gaylegphug (2), Paro (1), Samchi (4), Samdrup Jongkhar (3), Tashigang (4), and Thimphu (2).

## THE MONASTIC ESTABLISHMENT

1.35 Since Shabdung Ngawang Namgyal gained power in Bhutan in the seventeenth century, the state religion of Bhutan has been the Drupka sub-sect of Kagyupa, a branch of Mahayana Buddhism. While the absolute power of the monastic establishment declined in subsequent centuries, the Shabdung still remained the one truly legitimate power and hence highly influential and revered. With the creation of the hereditary monarchy, the monastic establishment lost most of its remaining civil powers. Nevertheless, it remains a major unifying factor and a strong national influence. It has permanent representation in the National Assembly as well as on the Royal Advisory Council. The Je Khempo retains authority over all religious matters, and is the only other person besides the King permitted to wear the saffron scarf symbolic of highest authority. 1/

1.36 The structure of the monastic establishment has remained largely unchanged for centuries. Monks are believed to total about 5,000 including about 1,000 members of the Central Monk Body Thimphu/Punakha. 2/ The Je Khempo is chosen from among the high lamas and holds his position indefinitely. He retains full control over religious affairs, including over those Buddhist institutions not connected with the Drukpa sect. He is assisted by four high-ranking lamas of the Central Monk Body who oversee various aspects of Buddhist life. Lamas from the Central Monk Body are appointed to head regional monk bodies. In each district (except those in predominantly Hindu southern Bhutan), there is a head lama (lama neten) who presides over the district monk body. His responsibilities include conducting district level religious ceremonies, ensuring the upkeep of monasteries, and running the monastery schools. Links between civil and religious officials are close, especially as the monk body and the district administration normally share the dzong.

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1/ In Bhutan, there is a tradition of wearing scarves to all official occasions and when visiting dzongs. The color of the scarf signifies rank, as follows: saffron - the King and Je Khempo; orange - ministers and deputy ministers; blue - peoples' representatives; red - high civil and religious officials, including district officers and High Court judges; red with white stripes - deputy district officers; white - others. White scarves are also exchanged and offered as signs of respect. Bearers of the red scarf or higher are also permitted (and expected) to wear a sword.

2/ The Central Monk Body resides in Thimphu for most of the year, but moves to lower altitude Punakha during the winter months.

1.37 The economic powers of the monastic establishment have also declined. Until 1968, its main sources of revenue had been taxes which it had collected directly in kind and rent-in-kind collected from tenants of its sizeable landholdings. In 1968, the Government replaced the taxes with an annual subsidy paid directly by the Government to the Central and regional monk bodies. In 1982, the Government began purchasing monastery lands, starting with that of the Central Monk Body, and redistributing them to the mostly landless laborers who tilled them. The funds the monasteries are receiving from the sales are being put into income-generating investments in public enterprises. One important obligation on the part of the Government to the monastic institution nevertheless remains--the provision of free public labor under the compulsory labor schemes for the construction and maintenance of dzongs and monasteries (para 4.08). While the influence of the monastic establishment has declined, monks continue to be held in prestige and until recently it was considered highly desirable that at least one son in each family join the monastic establishment. It was also one of the few avenues of education and advancement available to most people. Now, however, modern education is being increasingly recognized as best fulfilling that role, and the monasteries are beginning to find it more difficult to recruit.

Chapter II: AN ECONOMIC OVERVIEW

INTRODUCTION

2.01 As Bhutan has only recently begun to emerge from behind its natural and self-imposed barriers of isolation, patterns of economic activity are still strongly rooted in the past. Those patterns were primarily dictated by physiographic features. Settled agriculture concentrated in small communities spread out along the main river valleys of the inner Himalaya, and in the Duars and adjacent foothills. Swiftly flowing rivers, mountainous terrain, and dense forests separated these settlements, leading to an economy of small, primarily subsistence-oriented communities. Beyond and between the settlements of the inner Himalaya, migrant herders moved with the snowline, grazing herds of sheep and yaks on the alpine grasslands.

2.02 Traditionally, the inner Himalayan communities looked northwards to Tibet, not only for historical reasons, but also because passage over the high Himalayan passes tended to be somewhat easier than passage through the deep river valleys and dense forests to the south. Also, seasonal migration of the herds led to contact with Tibetan herders, providing opportunities for barter trade. Trade was, however, limited, and for most purposes, communities were self-sufficient. In contrast, the settlements of the Duars and the neighboring foothills always looked south. Indeed, these were in part settled by spontaneous in-migration from beyond Bhutan's border, a process that ended only in the mid-twentieth century, with the consolidation of Government authority in that region. Here, although agriculture is still subsistence-oriented, landless labor as well as cash cropping have been more common.

2.03 This economic structure was inherently stable as the ratio of land to labor was favorable; this was reinforced by government policies that deliberately attempted to minimize exposure to outside influences. Consequently, the rural sector has changed little over the past two decades, and even though a small, tightly controlled modern sector has emerged, its overall economic impact has been limited. This is, however, slowly changing. Discussion in the National Assembly, fueled by the King's commitment to improving socio-economic conditions, has led to rising expectations and to what the Planning Commission refers to as a "minimum acceptable level of growth". This has led in the Fifth Plan to significant increases in proposed investment and to fundamental changes in the development strategy.

2.04 The Planning Commission faced major difficulties in preparing the Fifth Plan. Most of even the most basic socio-economic data, including the size of the population, are unavailable, while there is an unclear picture of how the economic system, as limited as it is, functions. This information is important if efficient use is to be made of scarce development resources, and

if the benefits of development are to be equitably distributed. Consequently, the past several years have seen an unprecedented amount of basic socio-economic statistical work in Bhutan, including a population census, which is still ongoing; a livestock census; a nationwide agricultural survey; nutrition surveys; and the preparation of estimates of the national accounts and the balance of payments. While much statistical work remains to be done, efforts so far have resulted in a considerably clearer picture of the structure of the economy and the overall level of development.

#### PRODUCTION AND NATIONAL INCOME

2.05 Table 3 below presents the Planning Commission estimates of GDP for 1980/81, the only recent year for which such estimates were prepared. 1/ Total estimated GDP amounted to Nu 1,021 million, or about \$129 million. Even though the shares of agriculture and animal husbandry have undoubtedly declined with the emergence of the modern sector, they still accounted for almost half (48%) of GDP, with traditional subsistence agriculture comprising up to 90% of total production. Forestry accounted for an estimated 15% of GDP, reflecting its importance as the main source of domestic energy, and as a source of construction materials and of exports. Industry (including power, mining, and construction) comprised only about 6% of GDP, a strong indicator of Bhutan's early stage of development. 2/ Three relatively large industries--the cement plant, a distillery complex, and a fruit products processing plant--accounted for most of the manufacturing value added. Mining accounted for less than 1% of GDP, as most of Bhutan's significant mineral deposits are undeveloped. Construction, at 1.9% of GDP, would appear to have been underestimated, given the large amount of construction being undertaken on roads and the Chukha hydro-power project. Power was a particularly small contributor (0.3%), due to the very low level of development of Bhutan's hydro-power potential, but this share will increase dramatically with the commissioning of the Chukha project in late 1984. Services comprised a relatively high 31% of GDP, but public administration and direct government services, including health and education, accounted for 45% of those. Tourism contributed only about 1% of GDP, despite its significance as a revenue and hard currency earner. Trade, commerce, banking, communications and transport were all only small contributors, reflecting the subsistence nature of most of the rest of the economy.

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1/ In 1975, an estimate was prepared which indicated a GDP of about \$90 million.

2/ Although on the basis of a full year's production at the Penden cement factory (production began in January 1981), industry's share would have risen slightly to 7.1%.

Table 3: GROSS DOMESTIC PRODUCT AT MARKET PRICES, 1980/81

	<u>Nu million</u>	<u>Percentage</u>
<u>Agriculture and Related Sectors</u>	<u>645.2</u>	<u>63.2</u>
Agriculture	409.4	40.1
Animal Husbandry	76.5	7.5
Forestry	159.3	15.6
<u>Industry</u>	<u>63.5</u>	<u>6.3</u>
Manufacturing and Processing	33.3	3.3
Mining	8.6	0.8
Power	2.7	0.3
Construction	18.9	1.9
<u>Services</u>	<u>311.8</u>	<u>30.5</u>
Transportation and Communications	33.4	3.3
Tourism	11.0	1.1
Financial Institutions	15.4	1.5
Trade	28.6	2.8
Social Services	34.8	3.4
Public Administration	106.6	10.4
Rental and Other Services	82.0	8.0
Total GDP	1,020.5	100.0

Source: Planning Commission.

2.06 Based on a total GDP of \$129 million and the official population estimate, the per capita income of Bhutan in 1980/81 amounted to \$116. <sup>1/</sup> This would give Bhutan the lowest per capita income in the South Asia region, and one of the lowest in the world. The standard of living would appear, in fact, to be considerably higher than is suggested by this estimate given such indicators as the relatively favorable population/land ratio, the limited degree of landlessness, and the relatively high standards of rural housing. The relatively favorable indicators concerning landholdings are supported by recent nutritional surveys which indicated relatively high levels of calorie intake. A recent survey covering 12 villages in various regions of Bhutan indicated that 98% of the families surveyed owned land and that the average

<sup>1/</sup> Official 1980/81 population taken as mid-1982 estimate of 1.16 million discounted for two years' growth at 2%.

holding was a respectable 1.6 ha. <sup>1/</sup> Income and expenditure estimates made under the survey also suggest that the per capita income is in fact higher than \$116--despite its limitations, it indicated an average per capita income of around \$200. The same survey also suggested that income distribution is somewhat skewed, reflecting mainly land ownership patterns--the top 17% of the households earned 40% of the income, the bottom 20%, 8% of the income.

2.07 Other national accounts data are not available. Time series data, which would permit some assessment of economic growth rates, are unavailable due to an absence of production trend data, especially for agriculture. The Planning Commission has derived some overall estimates of GDP for several years in addition to 1980/81, but these would appear to rely mainly on the intuitions of the planners. These suggest that real GDP averaged about 6% annual growth during 1978/79-1981/82. Similarly, uncertainties concerning trade and non-factor service flows do not permit proper assessment of overall investment and consumption levels, even for 1980/81. Public investment (excluding the Chukha project) in 1980/81 was equivalent to 16% of GDP; including the Chukha project, to a high 32% of GDP. Both budgetary and Chukha-related investment have increased significantly since 1980/81, and have probably risen even higher as a proportion of GDP. As discussed in subsequent sections of this chapter, all public investment has been financed by external assistance. Private investment appears to be low, being limited mainly to traditional investments like livestock, land, and housing, while much of the limited private sector investment in industry has occurred with public financial assistance (para 3.39).

## THE EXTERNAL SECTOR

### Trade Patterns

2.08 Prior to 1959, Bhutan's principal trade ties had for traditional reasons mainly been with Tibet, with surplus foodgrains--mainly rice--being exchanged for salt, wool, tea, soda, and precious metals. Although Britain (in 1865) and India (in 1949) both had clauses in their treaties with Bhutan declaring free trade between the two regions, significant Indian trade with Bhutan did not develop under either regime. The decision in 1960 to close the border to Tibet ended trade with the north and, as in other spheres, led to a complete reorientation towards India and the south.

2.09 For an economy that barely 20 years ago functioned largely without trade, Bhutan's present dependence on trade is surprisingly high. Estimated imports in 1981/82 (Table 4) amounted to about 40% of GDP; estimated exports, for about 17% of GDP, resulting in a large trade deficit equivalent to about

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<sup>1/</sup> "Pilot Survey on Consumer Expenditure", Central Statistical Organization, Planning Commission, 1979.

23% of GDP. 1/ Not surprisingly, given Bhutan's landlocked position, trade is overwhelmingly oriented towards India.

Table 4: DIRECTION OF ESTIMATED TRADE, 1981/82

	<u>With India</u>		<u>With Other Countries</u>		<u>Total</u>
	<u>Nu million</u>	<u>%</u>	<u>Nu million</u>	<u>%</u>	<u>Nu million</u>
Exports	178.0	96.5	6.4	3.5	184.4
Imports	<u>404.5</u>	93.1	<u>29.8</u>	6.9	<u>434.3</u>
Trade Balance	-226.5		-23.4		-249.9

Source: Department of Trade and Commerce, Ministry of Trade, Industry, and Forests.

2.10 There are no restrictions or duties on imports from India (excluding a few minor imports which are banned by mutual agreement to protect domestic industries--e.g., matches), and imports cover a wide range of consumer, intermediate, and capital goods (Annex 2-A). The largest import categories are machinery and equipment (22% of estimated imports from India), petroleum products (14%), metal products (8%), foodgrains (6%), textiles and clothing (6%), and transport equipment (mainly truck chassis, 5%). While private individuals are permitted to import from India, a considerable amount of trade takes place on a state-to-state basis. This applies in particular to imports of products under quota in India, of which Bhutan is also allocated a share. 2/ These imports are handled by the Imports Division of the State Trading Corporation of Bhutan (STC), which has its main office in Calcutta. The main quota imports are steel, coal, fertilizers, industrial spirits, and

1/ As free trade prevails with India, official records of trade have not been kept. The Department of Trade and Commerce, however, estimated trade flows for 1981/82 based on State Trading Corporation records, sales tax records, and by adjusting for other undocumented flows. Estimated imports exclude direct imports by Indian agencies operating in Bhutan, as well as imports in connection with the Chukha project. Starting January 1983, border checkpoints have begun keeping detailed records of imports for sales and excise tax administration purposes. This will also enable the Government to estimate more accurately trade flows with India.

2/ Bhutan's access to these quotas is another indirect form of assistance from India, as these items are sold at subsidized prices in India.

edible oils. In addition, the Food Corporation of Bhutan (FCB) imports rice, wheat, sugar, and salt under quota. 1/ Bhutan's requirements of most commodities exceed the quota allocations; moreover, the full quota amounts sometimes fail to materialize as these items are usually in short supply in India. Consequently, quota imports are usually supplemented with more expensive purchases on the open market in India.

2.11 Bhutan's exports to India comprise mainly agricultural, mineral, and forestry products (Annex 2-B). Agricultural products accounted for 27% of exports to India in 1981/82; the principal exports were cardamoms, potatoes, and oranges. Sawn timber, rosin, and other forestry products accounted for a further 15%. This was probably low by historical standards, reflecting the restrictions on commercial logging (para 3.35). The largest single export was, however, cement. Almost 71,000 MT were exported, accounting for Nu 47.4 million, or 27% of exports to India. Exports to India of cement and timber are handled by the STC (Exports Division), while the FCB exports agricultural produce it has procured to India directly.

2.12 Trade with overseas countries has been a recent development, and accounted for less than 6% of total trade flows in 1981/82. 2/ The trade patterns have been simple. Imports essentially comprise machinery and equipment financed with overseas aid, and automobiles, many of which are purchased from Bhutan's own hard currency reserves. Imports are controlled by the Ministry of Finance, which holds most of the foreign exchange, and which must authorize its release. Except on official imports, which are duty free, customs duties on imports from third countries correspond to Indian duties, to prevent deflection of imports into India. In practice, however, private sector imports have been negligible. Because of Indian trade regulations (para 2.14), overseas exports were virtually non-existent prior to 1979, and are still very small and irregular. Over 85% of overseas exports in 1981/82 were accounted for by cardamoms; rosin accounted for most of the remainder (Annex 3-A). Because of trade and transit regulations, all overseas trade is handled by the STC.

2.13 Mainly because of its proximity, but also because Bhutan has free access to its large, protected market, India is likely to remain Bhutan's principal trading partner. Nevertheless, the expansion of overseas exports to earn hard currencies is a major objective of the Fifth Plan. While this

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1/ For a complete list of quota allocations for 1982/83, see Annex 2-C. FCB imports have often been less than the quota because of storage constraints.

2/ It is possible, however, that some exports to India end up being re-exported abroad.

is a sound objective, the Government should be careful not to attempt to stimulate such exports artificially through subsidies or multiple exchange rate practices. Some initial assistance for promotion or marketing could be justified, but otherwise, financial measures to promote overseas exports could end up posing a large financial burden which Bhutan can ill-afford. There are indications that some subsidization, through FCB losses, may already have occurred in cardamom marketing abroad.

#### Trade and Transit Arrangements

2.14 As Bhutan is landlocked, trade and transit arrangements with India will play a critical role in its economic development. Prior to 1972, there had been no formal arrangements; Bhutan's limited overseas trade had generally been governed by the relevant Indian regulations. In 1972, the Governments of Bhutan and India signed an Agreement of Trade and Commerce which provided for all official imports to be exempted from Indian import duties while goods of Bhutanese origin could be exported on official account free of any Indian export duties. Any Indian quantitative restrictions continued, however, to apply. The agreement gave Bhutan little incentive to develop overseas trade, as all foreign exchange proceeds accrued to the Government of India, while the Government of India agreed "to provide foreign exchange to the extent possible for import into Bhutan such items as are essential for the diversification and growth of Bhutan's economy". The treaty was initially valid for ten years, and would remain in force for an additional ten years unless either party gave written notice no less than one year in advance of expiry that it wished to renegotiate it. The Government of Bhutan indicated its desire to renegotiate in 1981. Negotiations were conducted during 1982, and a revised agreement with considerably more favorable terms and reflecting Bhutan's current needs is likely to be signed shortly.

2.15 Even prior to this renegotiation, however, in 1978, a number of important trade and transit arrangements were revised which eased access to overseas markets and provided Bhutan with an incentive to develop overseas trade. The revised arrangements included the establishment of a foreign exchange account at the State Bank of India (Overseas Branch) in Calcutta in the name of the Government of Bhutan and simplified export procedures. Under the revisions, the Government of Bhutan agreed to deposit initially all foreign exchange earnings from commodity exports, as well as foreign exchange receipts of Indian travel agents for package tours to Bhutan, into this account. The Government of Bhutan would have complete freedom to utilize these funds as it chose.

2.16 The simplified export procedures applied to all exports on official account, which resulted in all overseas exports being channeled through the STC. After an exporter finalizes an overseas export transaction, it is sold to the STC, which handles the necessary transit paperwork and arranges for overseas shipment. The export receipts are deposited in the Government's foreign exchange account at the State Bank of India, while the Ministry of

Finance credits the STC with the ngultrum equivalent. One related aspect of the new export arrangements was the determination of exportable surpluses for certain commodities which it was mutually felt would be available for Bhutan to export abroad. To ensure exports are within these exportable surpluses, Indian Customs keeps records of Bhutanese exports and undertakes spot checks on individual consignments. Exportable surplus ceilings have usually been agreed upon in advance for the subsequent year. Generally, these ceilings never constrained overseas exports, although whenever unanticipated export items arose during the year, it became necessary to gain mutual agreement on them. Official import clearance procedures are also relatively simple, although they require the Government to inform the Foreign Ministry in Delhi which, in turn, informs the Finance Ministry, which then authorizes the Customs Department in Calcutta to release the merchandise duty free. <sup>1/</sup> Although the required logistics can inevitably take time, most imports clear quickly. Only if importers in Bhutan are unaware that goods have arrived in Calcutta can clearance and transit to Bhutan take more than several weeks. The 1978 revised arrangements have greatly facilitated Bhutan's access to overseas markets, and due to the good overall relations between the two countries, trade and transit issues rarely present difficulties and are not likely to be a significant impediment to trade and development.

2.17 As part of the 1978 arrangements, the Government of India also agreed in principal to the use of land and river transit routes to Bangladesh, and in anticipation of future developments, the Government of Bhutan also signed trade and transit agreements with the Government of Bangladesh. So far, the provisions of those agreements have not been put into effect.

#### The Overall Balance of Payments

2.18 Despite the importance of trade in the economy and the large capital inflows, it is not possible to compile any reasonably reliable overall balance of payments. The main difficulties stem, somewhat ironically, from the close economic links with India. The problems associated with recording trade flows between Bhutan and India are referred to in para 2.09. Also, very little is known about the flows of invisibles, but given the large number of expatriates working in Bhutan, these are probably substantial. At the same time, the widespread circulation of the Indian rupee in Bhutan prevents an accurate assessment of overall financial flows. While changes in the rupee holdings of the Bank of Bhutan are known, changes in rupees in circulation are not. The report's assessment of the balance of payments, especially with respect to India, is therefore largely qualitative.

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<sup>1/</sup> Clearing imports involves obtaining a Customs Clearance Permit (CCP) and a Customs Duty Exemption Certificate (CDEC). Indian customs release imports on the basis of a CCP; however, if a CDEC is not obtained as well, the released imports are subject to the applicable Indian duty.

2.19 In general, it would appear that Bhutan's overall balance of payments have been sound. As Table 5 below shows, Bhutan has run overall balance of payments surpluses with India (as well as a combined overall surplus) during three of the past four years and with other countries during all four years. Barring any major changes in consumer liquidity preference during the period, it is unlikely that changes in rupees in circulation in Bhutan substantially changed these outcomes.

Table 5: NET FOREIGN EXCHANGE HOLDINGS, 1977/78-1981/82  
(end-March, in US\$ million)

	<u>Indian Rupees (net) a/</u>	<u>Hard Currencies</u>	<u>Total</u>
1977/78	9.54	1.19	10.73
1978/79	13.84	2.06	15.90
1979/80	12.40	3.19	15.59
1980/81	16.13	5.46	21.59
1981/82	17.95	7.75	25.70

a/ Deposits less working overdraft at State Bank of India.

Source: Statistical Appendix Table 7.

2.20 Bhutan's relatively sound balance of payments position with India, despite the large trade and current account deficits, stems from the Government's basically conservative economic (especially fiscal) policies, and the large and sustained inflows of financial assistance from India. This assistance comes through a variety of channels and amounted in 1981/82 to at least Rs 428 million (\$48 million). 1/ In addition, a number of Government of India agencies involved in Bhutan fund their activities directly out of their own budgets. These financial assistance flows are unrecorded. Apart from the 40% of total Chukha expenditures which are on a loan basis (para 3.68), all Indian assistance to Bhutan has been on grant terms.

2.21 Over the past five years, Bhutan has consistently run balance of payments surpluses with third countries and built up substantial hard currency reserves. 2/ For 1981/82, the Planning Commission undertook a

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1/ See Statistical Appendix Table 13.

2/ Hard currency reserves as at end-1981/82 amounted to \$7.75 million, equivalent to more than one year of total imports of overseas goods and services, or to more than three years of non-aid-financed imports.

preliminary analysis of Bhutan's balance of payments with third countries (Annex 3-B). Even though numerous assumptions had to be made in the process, the exercise revealed that the balance of payments is heavily influenced by aid flows. Aid-financed imports of goods and services account for over 70% of total current payments; if aid-financed imports were excluded, Bhutan would be running a surplus on the current account instead of a deficit. The principal sources of current foreign exchange earnings are tourism and philatelic receipts (37%) and private aid transfers from abroad (29%). Merchandise exports accounted for only 19%. The current account deficit amounted to about \$3.5 million, but this was more than fully covered by \$6.4 million official non-rupee aid receipts. These permitted a \$2.9 million increment to convertible foreign exchange reserves. Bhutan has no overseas foreign debt apart from a \$6.9 million IFAD loan signed in 1981, which is just beginning to disburse.

#### PUBLIC FINANCE

2.22 The era of modern financial practices in Bhutan is very young, and the system has been undergoing major evolutionary change. Historically, the Government had simply tailored its expenditures to match the inflow of revenues. It was not until the early 1960s, as government began to grow, that the Government saw it necessary to begin institutionalizing public finances. In 1963, the position of Finance Secretary was created in the Royal Secretariat to monitor public revenues and expenditures, and in 1968, the Ministry of Finance was one of the first ministries formed. But it was not until 1971 that the first budget was prepared. This budget came to be called the "civil" budget, as it covered only the needs of the Royal Secretariat and the Ministries of Finance, Home Affairs, and Foreign Affairs. The requirements of the development-oriented ministries--the Ministries of Communications and Tourism; Trade, Industry, and Forests; and Development continued to be provided under a separate "development" budget administered first by the Development Secretariat and then by its successor, the Planning Commission (paras 5.01-5.03). Annual budgeting actually began in the early 1960s, when it had been necessary for the Development Secretariat to allocate between development activities the annual Government of India grants. However, even after the creation of the Ministry of Finance and the emergence of new donors on the scene, the practice of preparing a separate development budget continued, mainly because there were practically no financial links between the two budgets. Domestic revenues were almost totally absorbed by civil expenditures, leaving foreign aid to finance almost all development-related expenditures. There was no economic rationale behind the separation the so-called "civil" and "development" budgets--each, for instance, contained both recurrent and capital expenditures.

## Revenues

2.23 Prior to 1970, most taxes had been paid in kind, either in the form of agricultural produce to the monasteries or the Government, or as compulsory labor. At that time, agricultural taxes in kind were eliminated and cash taxes based on the type of landholding were introduced. In the process, the effective rate of taxation was reduced very significantly. It is reported that previously farmers had paid one-fourth of their produce or more in taxes. In the traditional economy, this had been by far the largest source of Government revenue. Under the new system, however, agricultural and livestock taxes have declined to minimal levels. At the same time, the practice of paying separate taxes to the monasteries was discontinued. Now, the Ministry of Finance is the sole tax collector, which, in turn, underwrites most of the costs of the monastic establishment. Bhutanese continue to pay major in-kind taxes in the form of compulsory and voluntary labor (para 4.08).

2.24 It is difficult to evaluate the domestic resource mobilization effort. To begin with, the existence of large compulsory labor requirements means that a major source of resource mobilization is not being captured by revenue estimates. Furthermore, the Government's ability to mobilize revenues is severely constrained by the free trade relations with India. While free trade results in large benefits to Bhutan in many respects, it severely limits the amount of revenue the Government can collect from import and export duties. Usually, these form the largest single source of revenue in low-income countries; in Bhutan, because almost all trade is with India, customs duties account for only about 2% of Government receipts. The existence of free trade and a long common, largely unmonitored border also limits the Government's flexibility in imposing sales taxes--any measures which significantly increased domestic prices above prices in India could lead to a diversion of trade into unauthorized channels. Many imports from India contain sales and excise taxes; to compensate the Government for the excise taxes the Government of India annually pays a Rs 25 million lump sum excise duty refund. <sup>1/</sup> This amount has been fixed since 1972; the Government estimates that the warranted refund has increased substantially since then.

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<sup>1/</sup> Bhutanese importers are entitled to a sales tax exemption in India if they obtain documentation from the Government of Bhutan. As an incentive to do so, Bhutan sales tax rates are set slightly lower than the corresponding Indian rates. However, many importers have preferred to pay the Indian tax (in which case, Bhutan levies no tax of its own) rather than go to the trouble of obtaining the exemption.

2.25 As measured by Government budgetary practices, receipts in 1980/81 amounted to Nu 101.7 million, equivalent to 10.0% of GDP. As Table 6 shows, over one-third of those receipts were accounted for by the gross receipts of Government Departments, including Tourism, Bhutan Government Transport Service (BGTS), Government Workshops and Central Stores, Lotteries, Telephones, Wireless, and Posts and Telegraphs. While in some cases, most notably the Lotteries, there is clearly a significant net contribution to the budget, others probably only break even (BGTS), while still others (communications services) probably operate at an overall loss. As such, it is difficult to consider the gross receipts of these departments/operations as revenues. Ideally, the costs associated with providing these services should be netted out against the gross receipts to determine their true revenue contribution or cost. Excluding these gross receipts, public revenues amounted to only Nu 66.9 million, or 6.6% of GDP in 1980/81.

2.26 The revenue base is not broad, with two sources--the Indian excise refund and domestic excise duties--accounting for 57% of total revenues. Furthermore, duties of liquor account for almost all domestic excise duties. Income taxes are levied primarily on civil servants' incomes, up to a maximum rate of 5%, while small businesses are taxed at a rate of up to 7/8 of one percent on gross sales. <sup>1/</sup> In lieu of income taxes, rural households are taxed on the basis of their land and livestock holdings. Rates are low and this source accounts for only 2% of revenues. Apart from the excise duties on liquor, small excise duties are also levied on certain other manufactured products such as matches and metal furniture. Sales taxes are levied on imported consumer goods from India at three rates--3%, 5%, and 8%--slightly below the corresponding Indian rates. Petroleum products account for about one-fifth of sales tax revenues. Non-tax revenues consist mainly of royalties from forests and mines; in recent years, these have fallen due to the drop in logging following the introduction of restrictions in 1979. As Statistical Appendix Table 10 shows, revenues grew at a fairly steady 8% per annum during the Fourth Plan period.

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<sup>1/</sup> In 1982/83, a 30% income tax was introduced for certain major activities (para 2.34).

Table 6: COMPOSITION OF GOVERNMENT RECEIPTS, 1980/81

	<u>Ngultrum million</u>	<u>As a Percentage of Total Receipts</u>	<u>As a Percentage of GDP</u>
<u>Tax Revenue</u>			
Income Tax	2.1	2.1	0.2
Land Tax	1.2	1.2	0.1
Excise Duty	13.4	13.2	1.3
Sales Tax	4.3	4.2	0.4
Excise Refund from Government of India	25.0	24.6	2.4
Other	<u>6.8</u>	<u>6.7</u>	<u>0.7</u>
Total Tax Revenue	52.8	52.0	5.1
<u>Non-Tax Revenue</u>			
Royalties from Forests	9.5	9.3	1.0
Royalties from Mines and Minerals	1.0	1.0	0.1
Registration and License Fees	<u>3.6</u>	<u>3.5</u>	<u>0.4</u>
Total Non-Tax Revenue	14.1	13.8	1.5
<u>Gross Receipts from Government</u>			
Departments	<u>34.8</u>	<u>34.2</u>	<u>3.4</u>
Total Receipts	101.7	100.0	10.0

Source: Statistical Appendix Table 10.

### Budgetary Performance

2.27 The Government's difficulties in mobilizing domestic resources have been reflected in consistently growing deficits on current account in the budget. During the Fourth Plan period (1976/77-1980/81), the gap between current receipts and revenues increased from Nu -26.0 million to Nu -67.8 million, and in 1980/81, amounted to almost 7% of GDP. Taken together with capital expenditures, the Government has been running overall budgetary deficits well in excess of 20% of GDP. Despite these large deficits, overall budgetary policy must be considered conservative--there has been little recourse to expansionary finance (para 2.35) or to borrowing from domestic financial institutions, despite their high liquidity (paras 2.39-2.43).

2.28 The Government's ability to maintain a sound overall budget despite the large deficit on current account can be attributed to the extraordinarily high level of assistance it receives from the Government of India and the complete flexibility it has in utilizing that aid. 1/ That assistance is provided as cash grants which the Government can put to whatever purpose it chooses, covering either recurrent or capital expenditures. It is, moreover, a highly dependable source of finance, indicative amounts being negotiated to cover the full Plan periods. In 1980/81, the cash grant amounted to Nu 150 million, equivalent to 15% of GDP. The Government of India also provided an additional Nu 5.2 million tied to specific budgeted activities, as well as the payment of Nu 0.5 million under the 1949 treaty. By 1982/83, the cash grant had risen to Nu 250 million; the other smaller flows, to about Nu 8 million. In addition to budgetary support, the Government of India has been providing at least as much extra-budgetary assistance. 2/ Bhutan has also been receiving relatively large international assistance, mainly from the UN system. In 1980/81, this international assistance amounted to Nu 63 million (\$8.0 million), raising the overall level of external budgetary assistance to the equivalent of a high 22% of GDP, and about \$25 per capita (or to 38% of GDP and \$44 per capita if Chukha assistance is included).

2.29 Budgetary performance in the early years of the Fifth Plan is showing signs of improvement. Recurrent expenditures showed practically no growth in 1981/82, mainly as a result of a 5% effective reduction in the number of public employees undertaken at the initiative of the King. As a result, the deficit on current account increased only marginally, despite no growth in current receipts. Revised estimates for 1982/83 indicate that it is likely to decline somewhat, a large increase in recurrent expenditures stemming from a civil service salary increase being more than matched by increased revenues resulting mainly from the new tax on corporations. The 1982/83 budget also anticipated a 66% increase in capital expenditures and a more than doubling of expected overseas assistance, reflecting several large development projects which were expected to be taken up with foreign aid. To the extent full foreign financing for these projects did not materialize, borrowings from the domestic financial institutions were envisioned. In fact, as Table 7 shows, much of this additional investment did not in fact materialize; nevertheless, capital expenditures are estimated to have increased by more than 30% over 1981/82.

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1/ For annual aid flows, see Statistical Appendix Tables 13 and 14.

2/ Outlays on the Chukha project amounted to an additional Nu 164 million in 1980/81 (16% of GDP), and to Nu 232 million in 1981/82. In addition, the Government of India also financed the Penden cement factory and Gaylegphug Area Development Project outside the budget, while the Border Roads Organization and several other agencies financed their activities in Bhutan directly out of their own budgets.

Table 7: CONSOLIDATED GOVERNMENT BUDGET, 1978/79-1982/83  
(Nu million)

	<u>1979/80</u> -----Actuals-----	<u>1980/81</u>	<u>1981/82</u> Revised Estimates	<u>1982/83</u> Budget	<u>1982/83</u> Estimates
Total Receipts	<u>94.2</u>	<u>101.7</u>	<u>101.1</u>	<u>121.9</u>	<u>132.0</u>
Revenue	<u>63.6</u>	<u>66.9</u>	<u>69.4</u>	<u>110.0</u>	<u>120.1</u>
Receipts from Government Departments	30.6	34.8	31.7	11.9	11.9
Recurrent Expenditures	155.2	169.5	169.7	197.5	203.1
<u>Deficit on Current   Account</u>	<u>61.0</u>	<u>67.8</u>	<u>68.6</u>	<u>75.6</u>	<u>71.1</u>
Capital Expenditures	170.4	160.3	267.1	437.6	348.6
<u>Overall Deficit</u>	<u>231.4</u>	<u>228.1</u>	<u>335.7</u>	<u>513.2</u>	<u>419.7</u>
Financed by:					
Government of India Assistance	150.8	155.7	196.5	257.9	258.0
Other External Assistance	62.1	62.8	109.4	246.0	146.7
Other Domestic Financing (net)	18.5	9.6	29.8	9.3	15.0

Note: For purposes of this table, government finances have been consolidated even though actual consolidation did not occur until 1981/82. Government of India assistance includes only those funds which flow through the budget. Other domestic financing includes currency issue, use of cash balances, and domestic borrowings.

Sources: Ministry of Finance and Planning Commission.

2.30 Although overall budgetary performance has not been unsatisfactory, and indeed has recently shown signs of improvement, the Government is understandably concerned about the wide gap between current expenditures and receipts. Not only does this shortfall reflect an unhealthy dependence on foreign aid, it is also a somewhat inefficient use of that aid, which should be used to the maximum extent possible to expand the country's productive base. Reducing the gap calls for measures to both increase revenues and reduce current expenditures. To help reduce current expenditures, the Government effectively reduced the number of public employees by about 900 (or about 10%) during 1981/82. <sup>1/</sup> Also, to increase public revenues (and

<sup>1/</sup> Actually employment fell by less, as there was parallel growth in civil service ranks due to decentralization and the consequent need for additional district-level staff.

encouraged by the success of the Penden cement factory which in its first year contributed Nu 12 million (about 12%) to total government receipts), the Government has decided to initiate a number of large resource-based projects, the surpluses of which would accrue to the Government. This approach to resource mobilization over the longer run seems both justifiable as well as warranted, given the limited scope for raising revenues through normal tax means. At the same time, it was clear that many existing fiscal procedures were themselves outdated and constituted major constraints to the efficient use of public resources. With the 1982/83 budget, therefore, a comprehensive set of fiscal reforms was introduced.

#### Fiscal Reforms and Resource Mobilization

2.31 Although Government grew rapidly during the 1970s, most additions were simply treated within existing procedures or on an ad hoc basis. Little emphasis was placed on improving efficiency, with the consequence that what were originally minor sources of inefficiency increasingly became significant impediments. Reforms were introduced in three major areas--in the consolidation of the dual budgetary system, in the treatment of public commercial undertakings, and in disbursement and revenue collection procedures. Beginning with the 1981/82 budget, the civil and development budgets were consolidated into a single budget under the Ministry of Finance. At the same time, the roles of the Ministry of Finance, the Planning Commission, and the Foreign Ministry were rationalized. The Ministry of Finance now has overall responsibility for preparation of the budget and for the mobilization of domestic resources. In assessing resource requirements and feasible expenditure, the Ministry of Finance coordinates closely with the Planning Commission which also ensures that ministerial requests are consistent with Plan priorities. The mobilization of foreign aid, however, is conducted through the Ministry of Foreign Affairs.

2.32 As Government grew, most departments established their own accounts into which the Government transferred budgeted expenditures on a quarterly basis, and other accounts into which they deposited any revenue they generated for subsequent remittance to the Ministry of Finance. However, expenditures by the ministries often lagged behind the budget due to implementation constraints, with the result that relatively large amounts of idle public funds accumulated in these accounts. Similarly, there were often lags in remitting revenues to the Ministry of Finance. Together, these practices had resulted in the Ministry of Finance having an unrealistic picture of the true state of public finances. To prevent such problems in the future, starting in 1982/83, all government revenues are paid immediately into a single revenue account, while all expenditures are channelled through a single budget account. Revised regulations have also been introduced regarding the powers of government officials to draw upon budgeted resources, as well as their authority to reallocate funds between heads (Annex 4). All officers authorized to draw on the budget account have been set drawing

limits under a letter of credit system. The regulations on reallocating funds sought to reflect the objectives of decentralization while maintaining reasonably tight control of resources, especially at this early stage of decentralization. The regulations are generally tight; in addition, the district administrations and central departments are required to submit monthly accounts. The Government felt it necessary to introduce perhaps overly tight regulations initially and ease them subsequently, rather than to begin with relatively weak controls which could jeopardize the success of decentralization.

2.33 Another facet to the organic growth of government was that almost any entity established was fully incorporated into the budget even if it earned revenues as well as incurred expenditures. This was tending to distort the revenue and expenditure pictures. Moreover, many of these were providing services in which the Government had invested heavily in the hope of earning significant revenues, but with revenues and expenditures buried in ministerial accounts, it was difficult to obtain a clear picture of their performance. In 1982, the Government commissioned studies of three entities--the Department of Tourism, the Government Workshops and Central Stores, and BGTS--to determine their profitability. So far, only the first two studies are available. They indicate that while tourism was in fact profitable, a financial restructuring was desirable (para 3.54), and that the Government Workshops and Central Stores were performing poorly. Beginning with the 1982/83 fiscal year, the Government decided to exclude these three and five other operations--power, logging operations, Lotteries, Government Presses, and the industrial estates--from the budget on the grounds that they were meant to be self-financing, if not net revenue-earning, operations. Thus, a conscious decision must now be taken to subsidize these operations, a major step forward in ensuring efficient use of scarce budgetary resources. It is still too early to judge how many of these operations are in a position to function without budgetary support--power, however, was budgeted a subsidy from the outset.

2.34 To complement the decision to remove these entities from the budget, the Government also introduced with the 1982/83 budget, a 30% tax on the profits of selected public sector commercial undertakings. <sup>1/</sup> This will tax the highly profitable financial institutions for the first time and is the main reason behind the increase in revenues in 1982/83 (Table 7). In addition, the Government, as sole owner of most undertakings, is likely to

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<sup>1/</sup> Bank of Bhutan, Royal Insurance Corporation of Bhutan, Unit Trust of Bhutan, Penden Cement Authority, Government Workshops and Central Stores, Lotteries, Government Presses, and the Tourism Commercial Organization. Initially, tourism activities were also subject to an additional 30% tax on gross receipts; however, this was since dropped.

appropriate most, if not all, the remaining surplus as a dividend. Another revenue measure recently introduced was a Carriage Commission on all goods transport vehicles, while the implementation and rates of sales tax are under review. While there are obvious constraints to increasing domestic tax revenues over the long run, there would appear to be some immediate scope for generating additional tax revenues. In particular, it should be possible to increase sales tax revenues, mainly through improving administration. In the first instance, domestic sales taxes should be assessed on all imports, regardless of whether they have sought exemption from Indian sales taxes or not. Land taxes should also be reviewed (especially in the settlement schemes), to see if the large agricultural sector could carry an increased share of the development burden.

## MONEY, BANKING, AND PRICES

### Money and Banking

2.35 Monetization of the economy of Bhutan is a recent phenomenon and still at an early stage. Although a series of coins had been issued by the Government during the 1950s, most transactions continued to be carried out in barter, with taxes being paid in kind and through compulsory labor. Even today, barter continues to play an important role in the rural economy. It was only during the 1960s, with the expansion of trade with India and the large inflows of development assistance, much of it as cash grants, that the use of money became more widespread. Moreover, since there were no controls on trade and payments with India, the Indian rupee itself became a commonly accepted medium of exchange; indeed, the Indian rupee was the only significant medium of exchange until 1974 when the Ministry of Finance began issuing ngultrum, the official currency of Bhutan. All accounts and prices in Bhutan are now expressed in ngultrum, although the two currencies are freely exchangeable in Bhutan on a one-for-one basis. The issue of ngultrum has been sporadic, used primarily to meet extraordinary or unexpected Government expenditures. 1/ Most such expenditures were incurred outside the budget. Between 1974 and March 1982, a total of only Nu 6.2 million (net) had been introduced into the economy. Although the ngultrum and the rupee circulate freely alongside each other, rupees remain the predominant medium of exchange--compared to the total issue of Nu 6.2 million, the IMF estimates that Rs 60-80 million circulate within Bhutan. 2/

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1/ The first major issue of ngultrum was made to coincide with the 1974 coronation of King Jigme Singye Wangchuck.

2/ Based on ratios in countries at a similar stage of development of money supply (M1) to GDP.

2.36 The financial sector comprises the Royal Monetary Authority (para 2.44); the country's only commercial bank, the Bank of Bhutan; as well as three non-bank institutions--the Royal Insurance Corporation of Bhutan (RICB), the Unit Trust of Bhutan (UTB), and the Government Employees Provident Fund (EPF). The Bank of Bhutan was established in 1968, and since 1972 has been jointly owned by the Government (75%) and the State Bank of India (25%). <sup>1/</sup> The State Bank provides the Managing Director on secondment, as well as many of the staff. The head office is located in Phuntsholing, and there are 15 branches across the country. Interest rates and lending practices closely follow those in India, not only because of the State Bank influence, but also to ensure stable banking relations with India.

2.37 The Bank of Bhutan offers a wide variety of deposit and loan schemes (Statistical Appendix Table 8). In addition to current accounts, it offers savings accounts carrying 5% annual interest, and a selection of fixed deposits carrying interest rates from 5-1/2% to 10% per annum. General business loans are made at 15%, although ventures approved by the National Commission for the Development of Trade and Industry (para 3.40) are entitled to loans at 13% annual interest, and those carrying a Government guarantee, at 12.5%. The Bank of Bhutan has also served as the banker to Government, maintaining its accounts, providing temporary budgetary support at 10% interest, and serving as a channel for the issue of ngultrum currency.

2.38 The Bank of Bhutan has been expanding rapidly in recent years and is a highly profitable institution. As Statistical Appendix Table 1 shows, total assets more than tripled between 1977 and 1982, while reserves (mainly profits) increased four-fold. This fine performance can be traced to steady growth in deposits. These averaged 27% growth over the period. Table 8 below shows the ownership pattern and composition of deposits as at end-1981. Public and private sectors each comprised about half of total deposits. Private sector deposits accounted for most of the growth during 1978-81; government current account deposits, which would ordinarily be considered the most volatile component, fluctuated within a narrow range between Nu 60 million and Nu 84 million. Part of the consistently high level of Government current deposits can be explained by the Government of India cash grants, which are paid into the Government's account on a quarterly basis before subsequently being drawn down.

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<sup>1/</sup> Prior to February 1982, the Government owned 60%; the State Bank of India, 40%.

Table 8: COMPOSITION OF DEPOSITS AT THE BANK OF BHUTAN  
(Nu million, as of December 31, 1981)

	<u>Government</u>	<u>Government Corporations</u>	<u>Private</u>	<u>Total</u>
Current Deposits	78.4	3.4	42.0	123.8
Savings Deposits	1.2	-	22.8	24.0
Fixed Deposits	<u>0.6</u>	<u>16.5</u>	<u>41.3</u>	<u>58.4</u>
Total	80.2	19.9	106.1	206.2

Source: Bank of Bhutan.

2.39 Lending also grew rapidly over the 1977-82 period. Trade and industrial uses accounted for the bulk of the lending (Statistical Appendix Table 2), with most industrial investment loans carrying government guarantees. Rural and personal loans are still fairly small. The strong growth in advances was not sufficient to solve what has proved to be a long-standing problem facing the Bank of Bhutan--the large gap between deposits and advances. 1/ The following figures (in Nu million) illustrate the problem:

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Deposits	90.2	126.3	147.5	154.6	214.5	298.8
Advances	<u>29.6</u>	<u>41.2</u>	<u>54.2</u>	<u>85.0</u>	<u>79.9</u>	<u>103.8</u>
Excess Deposits	60.6	85.1	93.3	69.6	134.6	195.0

Given the lack of demand at prevailing interest rates, the Bank's relatively cautious lending policies, and the general lack of investment opportunities in Bhutan, the Bank has kept these funds invested in India, in special 91-day tax-free deposits earning 11.5% interest. These deposits accounted for 55% of the Bank of Bhutan's assets as at end-1982; because of the rupee's dual role in Bhutan; these same rupee reserves also comprise the bulk of Bhutan's rupee foreign exchange reserves.

1/ Of course, part of the problem here is that because the rupee also circulates widely in Bhutan, it is impossible to distinguish between a balance of payments surplus and a surplus of financial savings over advances in the domestic economy.

2.40 While the Bank is thus a highly profitable commercial institution, its lending activities have not had a strong development focus. However, to a large extent, this has been because relatively few investment proposals have been forthcoming. To provide what it views as basically development-oriented financial institutions, the Government is considering creating industrial and agricultural development banks. Other sources of credit are at present minor. Some Phuntsholing traders provide short-term trade credit, while informal rural credit is traditionally extended between neighbors to tide over adversity. There is, however, no regular network of professional money lenders.

2.41 The combined assets of the three non-bank financial institutions amount to about one-fourth of those of the Bank of Bhutan. They are all managed by the RICB. The RICB was established in 1975 to offer life insurance and a range of general insurance policies. It was originally set up with Government holding 51% of the share capital and private individuals, the remaining 49%, but in 1981, following an increase in the capital base, the share of the Government increased to 61%. RICB has also proved to be a highly profitable institution--in only one of its seven years of operation have gross claims exceeded premiums. As of end-1982, total funds available to RICB amounted to Nu 22.4 million (Statistical Appendix Table 3). The RICB has also had difficulty investing its funds profitably within Bhutan; at end-1982, cash and bank deposits accounted for 63% of total assets. <sup>1/</sup> The main areas of investment were mortgages, buildings, and trucks, although the RICB also invested in 10% of the initial share capital of the Unit Trust of Bhutan and has taken shares in several industrial investments.

2.42 The largest of the non-bank financial institutions is the EPF. As the civil service has been steadily growing and is still mostly young, contributions have far exceeded withdrawals, resulting in rapid growth in the EPF. As of end-1981/82, the resource base amounted to Nu 67.9 million (Statistical Appendix Table 4). Government employees, including those in Government and semi-Government corporations (such as RICB) deposit 10% of their salaries, which the employer matches, into the Fund. Members earn 8% interest on their own contribution (but nothing on the employer's), which is re-invested until retirement; at that time, the accumulated contributions and member's interest earnings are paid out as a lump sum. The RICB, which manages the EPF on behalf of the Government, undertakes to earn about a 12% return on contributions. The Government earns the full actual return on its contributions, along with the balance in excess of 8% on the members' contributions. As of end-1981/82, the net amount owed to Government from interest earnings was Nu 10.9 million. Although the EPF portfolio contains

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<sup>1/</sup> Like the other non-bank financial institutions, RICB must hold all bank accounts with the Bank of Bhutan.

investments similar to the RICB--buildings, mortgages, and trucks--it is also perceived as a somewhat more of a development finance institution by the Government. As such, it has invested about 30% of its portfolio in government-guaranteed loans to development projects, mostly commercial undertakings like the Gedu Veneer plant (para 3.37). The share of cash and bank deposits in the portfolio amounts to only about 16%.

2.43 The UTB was established by the RICB, which owned 10% of the initial capital, and the EPF which owned the remaining 90%. It was established to encourage industrial development by purchasing shares in promising new industries. By end-1982, its resources had grown to Nu 15.3 million (Statistical Appendix Table 5). Two types of units are offered--fixed-term units carrying 9% interest, slightly higher than fixed bank deposits of equivalent maturity, and ordinary units, which are dividend-bearing shares in the unit trust. Fixed-term units account for Nu 7.2 million of its available resources. Due to difficulties in finding viable industrial investments, 57% of the UTB resources were invested in loans and bank deposits.

2.44 Monetary policy in Bhutan has been essentially passive and played little economic role. This has mainly been because the open border and free trade with India and the widespread circulation of the rupee in Bhutan restrict the Government's ability to maneuver. Over time, the Government intends to move to a ngultrum-based monetary system. It fully recognizes that this transition must necessarily be slow and that one-for-one exchangeability with the rupee must be assured in order to maintain full confidence in the ngultrum during the transition period. A first step towards establishing an independent monetary system was the creation of the Royal Monetary Authority in 1982. Beginning April 1983, it will assume basic central banking functions, including management of the country's hard currency foreign exchange reserves and maintaining the government account.

#### Prices

2.45 During the 1970s, the Central Statistical Organization (CSO) of the Planning Commission began keeping track of certain retail prices in a number of towns across Bhutan. Although many difficulties were encountered in getting district administrations to report on a regular basis, the CSO has nevertheless produced a review of prices covering 1977/78-1981/82 (see Statistical Appendix Table 6). Although there are a number of methodological difficulties with its results, the review suggests that consumer price inflation averaged about 11% over the period. Price developments in Bhutan could reasonably be expected to reflect movements in India; and, in fact, they did. Over the same period, wholesale prices in India also averaged 11% growth; consumer prices, about 9% growth.

Chapter III: KEY SECTORS OF THE ECONOMY

AGRICULTURE AND ANIMAL HUSBANDRY

3.01 Agriculture is the dominant sector of the economy, contributing directly about half of GDP, accounting for over one-fourth of export earnings, and providing an employment base to as much as 95% of the total population. Farming remains labor-intensive and strongly rooted in the traditional past, being primarily devoted to the cultivation of cereal crops to meet subsistence needs. Limited amounts of other subsistence crops (pulses, oilseeds, vegetables) are also grown. Livestock are an integral part of the farming system, providing draught power and supplementing the diet with milk and meat products. In areas close to the Indian border and in a few inner valleys made accessible by road construction, there has been some recent development of commercial and horticultural crops, notably oranges and cardamoms in the south and potatoes and apples in the interior.

Land Use and Land Ownership

3.02 Only about 150,000 ha or 3% of the total land area is used for agricultural purposes (Table 9 and Annex 5). A further 10-12% is estimated to be under permanent or seasonal pasture. Paddyland (terraced and bunded land, usually irrigated but often rainfed in the south) is relatively more important in the western valleys and in the south, but has been developed wherever feasible in valley bottoms and on impressive hillside terraces. Dryland (permanent fields for the cultivation of dry foot crops, largely rainfed but partially irrigated in some northern areas) is predominant in the east and in the foothills, in places rising onto steeper and more marginal land which threatens the ecology. Also harmful is the presence of tsheri or shifting cultivation, which entails clearing land of forest cover for transient agriculture. Pasture land is of major importance throughout the northern belt and in areas above and between the inner valleys, especially in the west.

Table 9: AGRICULTURAL AND GRAZING LAND USE

	<u>West</u>	<u>Center</u>	<u>East</u>	<u>South</u>	<u>Total</u>	<u>Percent of Total</u>
	'000 ha-----					
<u>Agricultural Land Use</u>						
Wet Land	7.1	2.2	4.6	13.2	27.1	18.0
Dry Land	6.6	6.8	16.5	35.3	65.2	43.5
Tsheri Land	8.4	7.0	11.4	13.8	40.6	27.1
Horticulture	1.7	0.4	0.3	11.3	13.7	9.1
Other (including kitchen gardens) a/	<u>0.9</u>	<u>0.3</u>	<u>1.4</u>	<u>0.8</u>	<u>3.4</u>	<u>2.3</u>
Total	24.7	16.7	34.2	74.4	150.0	100.0
<u>Grazing Land</u>	226.0	46.5	32.1	19.7	324.3	

a/ Regional distribution of "other" land estimated.

Note: West : Gasa, Ha, Paro, Punakha, Thimphu, and Wangdiphodrang.  
Center: Bumthang, Dagana, Shemgang, and Tongsa.  
East : Lhuntsi, Mongar, Pema Gatsel, and Tashigang.  
South : Chirang, Gaylegphug, Samchi, and Samdrup Jongkhar.

This regional breakdown is based on district boundaries, many of which encompass considerable agro-climate variations.

Sources: Departments of Agriculture and Animal Husbandry, Ministry of Development.

3.03 Only limited information is available on land ownership patterns. Most cultivated land is owner-operated, although monasteries traditionally have supported themselves through land farmed by sharecroppers <sup>1/</sup>, and there is some absentee ownership, especially in the west. Landholdings are fairly equitably distributed, being legally limited to 25 acres (10.1 ha) but seldom exceeding 4 ha. The twelve-village survey (para 2.06) indicated that of 120 households, 82 owned less than 1.6 ha, 30 owned between 1.6 ha and 4.0 ha,

<sup>1/</sup> Land owned by the monasteries may have amounted to as much as 10% of the total. That land is now in the process of being taken over for sale at nominal rates to sharecroppers, with compensation being given in the form of income-generating investments (para 1.37).

and only 4 owned more than 4.0 ha. The average farm size was 1.6 ha, and only 4 families were landless. Farm sizes are believed to be somewhat larger than average in the south and in the east, although the land in the east is predominantly dry-farmed. Most grazing land is communally owned with access governed by traditional rights. Legislation is, however, under consideration to encourage private enclosure to establish, as for agricultural land, a system which gives independent smallholders an incentive to invest in land improvements.

### Crop Production

3.04 Any analysis of agricultural trends in Bhutan is handicapped by lack of historical records and by limited availability of consistent productivity estimates. Nevertheless, recent surveys by the Department of Agriculture, assisted by UNICEF consultants from the Centre for Development Studies and Activities in Poona, have greatly improved the data base. They suggest that previous estimates had greatly underestimated agricultural areas and production; for instance, net output of foodgrains is now put at 125,000 MT (Table 10 and Annex 5) compared to previous estimates of about 80,000 MT.

3.05 Bhutan was traditionally self-sufficient in foodgrains production, even exporting small surpluses to Tibet. Cereals accounted for about 90% of the area planted to annual crops. Output has, however, failed to keep pace with demand which has risen with population growth, the emergence of non-farming communities (including the expatriate labor force), and probably some increase in per capita consumption. <sup>1/</sup> Apart from some barter exchange, marketing of domestic foodgrains is minimal. The deficit is met by imports, estimated officially to be as much as 25,000 MT a year. FCB imports (mainly of rice) amount to only about 6,000 MT a year. There are, however, no direct records of imports by other public organizations and by the private sector.

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<sup>1/</sup> A factor which may have contributed to increased per capita consumption in rural areas was the abolition of traditional forms of land taxation. Forced procurement of grain was historically the main economic support for the Government.

Table 10: AGRICULTURAL AREAS AND PRODUCTION, 1982

	Area	Production ('000 MT)	
	'000 ha	Gross	Net
<u>Cereal Crops</u>			
Paddy (rice)	28.0	57.4	36.0
Wheat and Barley	12.3	13.3	10.7
Maize	56.8	80.7	69.5
Buckwheat and Millets	15.5	12.3	8.9
Total	112.6	163.7	125.1
<u>Other Annual Crops</u>			
Pulses	4.0	2.4	2.4
Mustard	2.9	1.9	1.9
Potatoes	3.7	24.9	24.9
Chillies and Vegetables	3.1	12.2	12.2
Total	13.7	41.4	41.4
<u>Horticultural Crops</u>			
Oranges	6.2	25.6	25.6
Apples	1.5	3.3	3.3
Cardamoms	5.9	2.8	2.8
Other	-	0.8	0.8
Total	13.6	32.5	32.5

Source: Department of Agriculture, Ministry of Development.

3.06 The main cereal crops are paddy, maize, wheat, barley, and buckwheat. Paddy is grown under irrigated conditions at altitudes up to 2,500 m in the inner valleys, although most production takes place under rainfed conditions on the south (Table 11). Maize is the dominant dryland and tsheri crop at intermediate and lower elevations. Wheat, barley, and buckwheat replace maize as the dryland crop at higher elevations and often follow paddy or maize as a second crop at lower levels. In general, paddy is the preferred crop and is grown wherever conditions permit; however, it accounts for less than one-third of net cereal production. Maize is grown over a substantially wider area and is the principal subsistence crop in more densely populated eastern Bhutan. It accounts for over half of total net cereal production. Wheat and barley are primarily grown at higher altitudes or as second crops. Significant amounts are used for alcohol production, while wheat in particular may be harvested green for fodder. Buckwheat and to a lesser extent millets are subsistence crops in other areas unsuited to paddy or maize cultivation.

Table 11: CROPPING PATTERNS BY LAND TYPE  
( '000 ha)

	<u>Wet</u> <u>Land</u>	<u>Dry</u> <u>Land</u>	<u>Tsheri</u> <u>Land</u>	<u>Total</u>
<u>Land Area</u>	27.0	65.3	40.6	132.9
<u>Cropped Areas</u>				
Paddy	27.4	0.5	0.1	28.0
Maize	1.6	49.0	6.6	57.2
Wheat and Barley	4.9	7.2	0.1	12.2
Buckwheat and Millets	1.4	11.5	2.6	15.5
Soyabean	-	1.0	} 0.1	} 4.0
Mustard	0.4	2.5	}	}
Potato	0.5	2.8	} 0.1	} 5.0
Other	<u>0.2</u>	<u>1.4</u>	}	}
Total	36.4	75.9 <u>a/</u>	9.6 <u>a/</u>	121.9

a/ Excluding 3,100 ha of crops intercropped mainly with maize (2,900 ha accounted for by soya).

Source: Department of Agriculture, Ministry of Development.

3.07 Nutrition studies indicate that cereals are the main source of both calories and protein in the diet and that average per capita consumption of cereals may exceed 150 kg per year. Oilseeds and pulses play a very limited role in the agricultural economy, although mustard is gaining in importance as a winter crop following paddy or maize. Soya, grown largely for export, is intercropped with maize in the east, and pulses are a cash crop in the south where they have traditionally formed a more important part of the diet. Chillies are the main vegetable crop, grown widely in kitchen gardens alongside limited quantities of other vegetables.

3.08 Probably the most striking recent development has been the introduction of commercial cropping into what was previously an almost purely subsistence agriculture. The main annual cash crop is potato, which has been extensively introduced into both irrigated and dryland cropping systems, although small amounts of ginger are grown in the south. Potatoes are primarily an export crop, although a recent survey by the International Potato Center suggests domestic consumption is becoming significant. Horticultural crops are also grown primarily for export. Orchard development in the interior--mainly of apples in Thimphu, Paro, and Bumthang--has normally displaced other crops, entailing therefore considerable investment

before a financial return can be obtained. Road construction and the development of marketing services have been the stimuli to such investment, mainly by relatively wealthy farmers, but also by Government employees and business interests. In contrast, land was readily available in the south for the cultivation of oranges and cardamoms, and these appear to have spread primarily by a process of spontaneous encroachment by lowland farmers seeking a cash supplement to their subsistence activities.

### Cultivation Practices and Opportunities

3.09 Cultivation practices have changed little, remaining labor-intensive and making only very limited use of modern technologies. Most labor is provided by the family, and it is common that land is temporarily reassigned between relatives so as to even out the ratio of labor to land. 1/ Labor is exchanged at peak periods and during harvest, and may come from further afield in return for a share of the crop. 2/ Apart from this, there is little paid agricultural labor except in the south where there is a small class of landless laborers who come mainly from across the border. In the off-season, compulsory and voluntary labor obligations to the Government are met, and individuals share in communal projects. The most striking example of this is for house construction, where labor "debts" can be carried over from generation to generation, while a notable communal purpose is for the construction and maintenance of irrigation facilities. Given the difficult terrain, these have major labor requirements.

3.10 Labor shortages at peak periods have influenced farming practices, especially on paddyland, and have limited cropping intensities and yields. Paddyland during the summer is almost entirely devoted to rice cultivation. The crop is established over an extended period (February to July) in dry-bed nurseries. This evens out demands for labor and farm power and reduces the burden of transplanting. Harvesting is also done over an extended period, reflecting variable planting dates, uneven crop maturity, and threshing methods which require the grain to be fully ripe. This often leads to delays in establishing the winter crop (usually wheat), creating difficult land preparation conditions and reducing yields. Double cropping is, in any case, severely restricted by the need to leave land for dry-bed nurseries and, particularly in the south and east, by inadequate irrigation facilities. Cropping intensities in the west have risen to about 160%, but even there they remain well below the theoretical potential. Intensities on dryland are lower than on irrigated land, although in the east they average 135%,

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1/ Land is normally inherited through the female line.

2/ For instance, people from Ha have traditionally provided harvest labor in Paro.

reflecting greater population pressure and a much reduced labor constraint (Table 12). Maize is, however, a relatively short season crop and although lack of irrigation reduces yield potential, it could be followed over extensive areas by a second crop. Intensities on tsheri land are very low, as farmers typically return to the same land only once in about four to five years.

Table 12: CROPPING INTENSITIES BY LAND TYPE

	Cropping Intensity			Fallow Land		
	Wet Land	Dry Land	Tsheri Land	Wet Land	Dry Land	Tsheri Land
West	161	111	19	-	18	82
Center	131	117	23	-	11	80
East	131	135	20	-	3	82
South	<u>122</u>	<u>110</u>	<u>30</u>	-	<u>13</u>	<u>74</u>
Total	134	116	24	-	11	79

Source: Department of Agriculture, Ministry of Development.

3.11 There has been very limited adoption of new paddy varieties, in part because local varieties yield reasonably well (probably 2.25 to 2.75 MT/ha in the west; 1.75 to 2.25 MT/ha elsewhere) and, with appropriate techniques, give yields almost as high as the recommended HYVs. For instance, preliminary evidence from trials in three western valleys suggests that adoption of simple improved practices (line sowing, higher plant populations, adequate use of farmyard manure) could alone increase yields by upwards of 30%. HYVs are, however, shorter season and mature more evenly than local varieties. Their adoption in association with improved practices (such as irrigated nurseries, improved threshing, and more timely land cultivation) could therefore enable higher cropping intensities and more productive overall use of land and water resources.

3.12 The introduced wheat variety "salonika" is now widely grown under both irrigated and rainfed conditions. Yields are, however, still very low (1.0 to 1.5 MT/ha) even though salonika has given excellent results if adequately irrigated and fertilized. The dry, cold winters will continue to limit rainfed yields, especially above 2,500 m or so, but yields in more favorable locations seem to be well below their potential. In part, this may be due to delayed planting following the paddy or maize harvest and to water stress. In contrast, buckwheat and millets are subsistence crops and although their yields are inherently low (probably no more than 0.75 to 1.0 MT/ha), they are versatile and hardy. They therefore tend to be grown by farmers who face conditions that are marginal for the other preferred subsistence crops.

3.13 In contrast to wheat, virtually no new varieties of maize are grown although trials of the hybrid Pioneer X 410 have apparently yielded up to 4 MT/ha in Tashigang. Average yields are estimated to be somewhat higher in the east (1.75 to 2.25 MT/ha) than elsewhere (1.00 to 1.75 MT/ha), possibly reflecting its more central importance, greater labor availability, and less competition with paddy. Intercropping with soyabean is increasing and now accounts for perhaps 20% of the area planted in the east. Not only does this provide a cash income (soya is largely exported to India), but intercropping also benefits the maize crop through nitrogen fixation. Maize yields could no doubt be significantly increased through the adoption of hybrids, better land preparation, higher plant population, and other improved practices, but rainfall and other constraints will continue to limit the extent to which maize-based cropping systems can be intensified.

3.14 Yields of oilseeds (mustard) and pulses are low and these crops are given only marginal attention. In contrast, potatoes are relatively high yielding. Bhutan's varied elevations and climates provide major opportunities for timing production to meet seasonal demands in the Indian market. Also, the relative isolation of the different valleys has helped keep disease problems to a minimum and, provided this can be maintained, the outlook for production of both consumption and seed potatoes appears excellent. Similar opportunities exist for other high value vegetable and specialty crops. Chillies are already widely grown and ginger is cultivated in the south. Otherwise, vegetable cultivation is fairly limited and, in contrast to potato, other new specialty crops (asparagus, mushrooms, vegetable seeds, etc.) are unlikely to be widely produced by smallholders and will essentially depend, as for horticultural crops, on the expansion of commercial farming, supported by strong technical and marketing services.

#### Animal Husbandry

3.15 Animal husbandry is an important component of the rural economy, playing a vital subsistence role (Table 13). In settled areas, cattle are kept for draught power and milking purposes, with most milk being consumed as cheese, curd, or butter. Fewer cattle are kept in the south (about two animals per ha of agricultural land) than elsewhere (about five), possibly reflecting a more extensive agriculture and a lesser role of milk products in the diet. In addition to cattle, most farmers keep a few chickens and, in the interior, pigs for slaughter. Above about 4,000 m, a small but distinct population of pastoralists maintain herds of yak and sheep on summer alpine pastures (especially in the west), migrating down to about 3,000 m before the snowline during winter. In southern Bhutan, sheep are also herded with goats, while horses are widely owned for transportation purposes.

Table 13: REGIONAL DISTRIBUTION OF LIVESTOCK  
( '000)

	<u>West</u>	<u>Center</u>	<u>East</u>	<u>South</u>	<u>Total</u>
Cattle	66.1	41.8	108.6 a/	100.5 a/	317.0 a/b/
Yaks	18.0	2.0	6.1	-	26.1
Horses	5.1	2.7	11.1	2.4	21.2
Sheep	12.2	8.8	7.8	11.2	40.1
Goats	-	6.1	-	36.2	42.3
Pigs	24.1	6.1	16.4	8.8	55.4
Poultry	29.8	25.7	50.0	80.9	186.2

a/ Including 15,000 crosses with mithun (an indigenous wild animal).

b/ Including 2,300 buffaloes.

Source: 1980 Livestock Census, Department of Animal Husbandry, Ministry of Development.

3.16 During the summer, cattle are grazed on pastures surrounding the inner valleys or in forests and scrub land at lower elevations. Following the harvest, they are grazed on crop residues and during winter are stall-fed, primarily on straw and other crop by-products or taken to the south. Little fodder as such is grown, although large portions of subsidiary crops (such as wheat) may be utilized for fodder in the event that feed runs short. The severity of the climate, especially at higher elevations, and the lack of nourishment during the winter months, causes high levels of animal mortality. This feed constraint is, if anything, likely to become more severe as veterinary services improve and as the Government's crossbreeding programs begin to take effect.

3.17 Similar pasture constraints will also limit the sheep and yak populations. Control of certain parasitic infestations was a notable success of the Fourth Plan period and is reflected in a significant reduction in mortality rates, especially among yaks. This has halted a declining trend in yak numbers, but has also helped exacerbate overgrazing both in alpine pastures and on those pastures at lower levels subject to year-round use. Although some improvements to pasture are possible, progress is likely to be slow. Thus, while cross-breeding programs for sheep (and even for yaks through interchange between different regions) may improve the stock and increase the productivity of wool and meat, total numbers are unlikely to increase significantly. While some increase in both the numbers and productivity of pigs and poultry can be expected in the smallholder sector, as a result of crossbreeding programs and improved veterinary services, these also are essentially limited by the availability of crop by-products and kitchen wastes.

### Government Institutions and Programs

3.18 Agriculture has increased steadily in importance with successive development plans (see paras 5.05-5.08). Significant progress has been achieved in creating a network of support services and institutions, in implementing irrigation and land development programs, and in facilitating the expansion of commercial farming. Nevertheless, the difficulties of serving a small, widely scattered population in mountainous terrain and severe shortages of trained manpower together create formidable problems. The impact of past programs on traditional agricultural and husbandry practices has therefore been fairly limited.

3.19 A network of agricultural and livestock farms has been established to provide facilities for seed multiplication and breeding programs and to act as a focus for developing improved agricultural and animal husbandry practices. Some applied agricultural research has been undertaken at these farms and some success has been achieved in promoting agricultural change (for instance, by the Bondey Farm in Paro, and by a number of horticultural farms). Nevertheless, their emphasis has been on production rather than research, and the limited attempts to evolve a true research establishment (e.g., at the Bhur farm in Gaylephug) have been largely ineffective. Recently, a site for a national research center has been selected at Wangdiphodrang, and this is to be supported by a network of applied research stations on existing farms. It will, however, take time to establish an effective research program, and in the early years, research have to depend heavily on technical assistance from abroad. Without such a program, however, it will not be possible for Bhutan to exploit its varied agricultural potentials in any coordinated, systematic, or efficient manner.

3.20 In the absence of satisfactory research results, the extension service has concentrated on input supply rather than on the provision of technical advice to farmers. Extension centers have been established in most blocks of the country. Seed from the Government's agricultural farms is distributed on a cost-plus basis, but accounts for only a small proportion of total seed requirements. Fertilizer use amounts to less than 1,000 MT annually. Transport costs are subsidized to maintain price uniformity throughout the country, but general subsidies on the import price, provided during the Fourth Plan period, have now been abolished. In contrast, plant protection services are provided free to the farmers and plant protection supervisors are posted in most districts. In the absence of an alternative delivery system, it is probably inevitable that the extension service will continue to be heavily involved in input supply. Nevertheless, as improved cultivation practices are developed for the major crops, it will be important to give adequate attention to their dissemination through appropriate farmer training and demonstration programs. The long distances and mountainous terrain make regular farmer contact difficult, but a more systematic approach to in-service training and extension activities could yield significant results, particularly in the main accessible agricultural areas.

3.21 Irrigation and land development programs have accounted for a major share of budgetary allocations for the agricultural sector. Most have been relatively small-scale, with labor being contributed by the local farmers, and Government providing technical support, construction materials, some direct subsidies (e.g., for terracing and contour bunding) and, where necessary, state land. Larger-scale projects have included a lift irrigation scheme covering 800 ha in Gaylegphug implemented with Government of India assistance (Phase II of this project and two new gravity schemes--the Bhur project and the UNCDF-assisted Taklai project--could irrigate a total of about 4,000 ha in this area, the largest contiguous area suitable for surface irrigation in the country); an IFAD-supported program to rehabilitate irrigation schemes covering about 9,200 ha in four major western valleys and provide complementary agricultural services; and a program to settle the landless (mainly from Shemgang) in the south. The costs of these projects, including the operating costs of the Gaylegphug lift scheme (which are subsidized), have been relatively high and implementation and operating problems have been encountered. In many cases, the implementation delays stemmed from difficulties in organizing the local labor.

3.22 As in agriculture, animal husbandry and veterinary services have tended to emphasize distribution of inputs and services rather than farmer education. A network of veterinary dispensaries has been established, and development policy has concentrated on introducing exotic crossbred animals into domestic livestock populations. Initially, imported animals were distributed directly to the farmers, but increasingly, emphasis has been placed on establishing a domestic breeding capacity, based mostly at Government livestock farms. Breeding services are provided free but, in contrast to the subsidies of the past, sales of crossbred animals are now to be made on a no-profit, no-loss basis.

3.23 While past investments have established a basis for future expansion of the livestock sector, their impact on local livestock populations has so far been limited. Even more limited has been their impact on relieving the crucial fodder constraint. Programs to distribute grass and legume seeds, and fodder trees have been initiated, some small areas of managed pastures have been established, and the possibility of introducing fodder crops (e.g., oats) into paddy or maize-based rotations has been raised. Nevertheless, the severe difficulties associated with increasing carrying capacities on wide areas of alpine and other pastures remain, and suggest that the shortage of winter feed will continue to limit livestock populations.

3.24 With decentralization (paras 5.13-5.14), many programs in agriculture, irrigation, and animal husbandry are to be implemented by the district administrations. The Departments of Agriculture and Animal Husbandry will continue to provide policy guidance and technical advice, but the District Agricultural Officers, the Assistant Engineers, and the Animal Husbandry Officers will report to and receive budgetary allocations from the district

administrations. Given the small scale of many of these programs, their widely dispersed nature and local characteristics, decentralization has a number of potential advantages. As discussed in para 5.16, decentralization also has a number of drawbacks (mostly manpower-related), which could offset these advantages. In particular, in diffusing responsibility for implementation, it is hard to overstate the importance of building up strong technical leadership at the center. Bhutan has very limited experience in modern agriculture, few research results on which to base future programs, and severe shortages of trained manpower. These must therefore be used as effectively as possible.

#### Agricultural Marketing and Credit

3.25 As Bhutan is still in the early stages of transition from a barter to a monetized economy, the role of the market remains fairly limited. In general, prices are determined by open market forces, although the Government operates a support price system through the FCB which aims to guarantee minimum prices to farmers both for foodgrains and cash crops. In practice, however, procurement by the FCB is limited and prices are strongly influenced by those prevailing in the Indian market. While the relatively free market system has served Bhutan well, an appropriate incentive system, supported by a strengthened FCB ability to guarantee minimum prices, will be an important factor in determining whether or not farmers take full advantage of the production opportunities becoming open to them to generate increased agricultural surpluses and enter cash crop production.

3.26 FCB's domestic procurement of foodgrains has in recent years amounted to no more than 300 MT a year, equivalent to only about 5% of its imports from India. A lack of storage facilities has limited its ability to carry over stocks or to take its full quota from India, and the balance of market requirements is imported by other public agencies and private traders based in the border towns. FCB's role in the procurement of cash crops has also been relatively limited, although prior to 1980 it in theory had a monopoly for cardamoms, while in certain years when market prices fell below the procurement price it also had to intervene for certain other crops on a fairly extensive scale. Accumulated losses arising from these interventions (notably for cardamoms and potatoes) have resulted in a sizeable overdraft with the Bank of Bhutan, and a financial reorganization is probably a necessary first step if FCB is to strengthen its role in the future. Marketing of cash crops will remain primarily with the private sector; in this context, FCB's role will need to be geared to strengthening the producer's position within a system which obtains the efficiency benefits of private marketing. A successful beginning has been made in establishing organized markets and auctions in the border towns, while the development of warehouse and cold storage facilities would help strengthen Bhutan's ability to exploit seasonal opportunities in the Indian market.

3.27 Increased commercialization of agricultural and animal husbandry activities imposes new financial demands on, and brings with it additional risks to, the farming community. An effective price support scheme is probably the crucial component of the Government's strategy to safeguard the farmer, particularly for new cash crops. As part of its past programs to help modernize agriculture, the Government made extensive use of subsidies (e.g., on fertilizer, agricultural machinery, crossbred animals) to help promote new practices. It is, however, now recognized that, if continued, these subsidies could place an intolerable burden on Government, besides having adverse efficiency effects. To help farmers finance inputs, emphasis in future is therefore to be placed on developing a system of institutional agricultural credit. Past attempts have had limited impact, in part because of the lack of a credit tradition and the thin financial infrastructure. A scheme operated by FCB has been wound up following inadequate recovery levels, and a new program through the district administrations has been launched by the Royal Monetary Authority with UNCDF assistance.

#### Agricultural Possibilities and Constraints

3.28 The rugged terrain severely limits the extent to which new areas can be opened up to agricultural and pastureland use. Population pressure will probably lead to some spontaneous encroachment onto new and increasingly marginal lands but, given the vital importance of preserving the country's forest cover, the Government is undoubtedly right to focus on the intensification of land use rather than the extension of agriculture and animal husbandry into new areas. Indeed, the Fifth Plan aims for a reduction in the area under agriculture through the abolition of tsheri cultivation. Over the longer term, it should prove possible to identify further areas suitable for settlement but, given the dangers to the environment of uncontrolled development and the high costs of Government settlement schemes, it is probably wise to move cautiously and to make a careful assessment of land capability before moving into those areas.

3.29 The considerable opportunities that appear to exist for the intensification of existing land use also support an intensive rather than an extensive agricultural development strategy. It is true that a fairly cautious approach is called for in introducing changes into a strongly traditional society and that so far, only limited progress has been made in evolving technical packages for adoption by farmers. Furthermore, the thin transport and communications system, long distances, and serious shortages of trained personnel will continue to constrain agricultural development and the ability of Government services to effectively reach the farmer. Nevertheless, the available evidence suggests that fairly modest improvements in agricultural practices could lead to significant increases in yields and cropping intensities. Also, the varied agro-climatic conditions across the country and free access to the large Indian market provide a significant basis for diversifying and developing agriculture. Increased production of

cereals (notably paddy and wheat) to meet domestic requirements will no doubt continue to be a high priority, but it will be through the spread of high value cash cropping that the major agricultural surpluses will have to be generated.

3.30 Significant opportunities exist in rainfed areas for promoting a second crop following maize, and for intensified cropping during the main summer season through intercropping. The extent to which cash crops such as potatoes are included in rainfed rotations will depend crucially on the development of marketing and improved transport facilities. Nevertheless, the main opportunities for intensified cropping lie in irrigated areas, and it is for these paddy-based systems that the most progress has been made in identifying improved packages of agricultural activities. Irrigation rehabilitation will need to receive priority since many systems are badly deteriorated; this will need to be complemented by strengthened farmer organizations to operate and maintain rehabilitated schemes. Technical constraints and the difficulty of mobilizing construction labor will limit the extent to which new schemes can be taken up, while particular attention needs to be given to ensuring that the major surface irrigation projects proposed for the Gaylegphug area are implemented satisfactorily.

3.31 If the opportunities for intensified cropping in irrigated areas are to be exploited, more timely cultivation and a more rapid turnaround of land will be essential. To overcome current labor and farm power constraints, some mechanization appears desirable. Mechanization can be very disruptive to the rural economy. Nevertheless, provided suitable machines are made available for hire or sale at or even above full cost, farmers themselves are usually the best judge of how far mechanization can contribute to more timely cultivation and increased productivity. So far only very limited mechanization has occurred. A significant Japanese-assisted program is, however, included in the Fifth Plan with emphasis appropriately placed on power tillers, pedal threshers, and improved implements since land preparation and threshing are clearly two major constraints in the present system. A more cautious approach is called for regarding more radical changes (e.g., four-wheel tractors, rice transplanters, and combine harvesters), although some experimentation may be desirable. In the rainfed systems of eastern Bhutan, labor is much less of a constraint and emphasis needs to be placed on improving draft animals (crossbreeding, improved fodder supplies) and introducing new implements (e.g., steel plows) rather than on the promotion of mechanization as such.

#### FORESTRY

3.32 As discussed in Chapter 1, Bhutan is abundantly endowed with high grade forest resources and, despite the low rate of utilization relative to the annual increment, forestry plays an important role in the economy. Forestry directly contributed about 16% of GDP in 1980/81; in addition, about

half of the industrial units are based on wood resources. Forest royalties and taxes also accounted for about 9% of government receipts (Table 6). <sup>1/</sup> Both of these contributions were low by historical standards due to the 1979 restrictions (para 3.35) on commercial logging, which led to a large subsequent decline in overall production (Table 14).

3.33 The Government recognized at an early stage that Bhutan's forests represented a valuable resource. To help properly manage them, a forest directorate was established as early as 1959. The present Department of Forests was established in 1967, making it one of the first government departments. Reflecting the importance of the forests and the desire to maintain strong control over their exploitation, all forest activities other than social forestry and forest fire control are under central administration. The desire to have a clear picture of the forest resource base led to the comprehensive Pre-Investment Survey of Forest Resources (para 1.08) which was undertaken with Indian assistance between 1974 and 1979. The demarcation of forests began in 1974 and, by 1981, about 11,000 sq km had been surveyed and boundaries demarcated.

Table 14: LOGGING VOLUMES AND FORESTRY REVENUE, 1976/77-1982/83

	<u>Logging by: ('000 cubic meters)</u>			<u>Revenues from: <sup>a/</sup> (Nu million)</u>		
	<u>Forest</u>			<u>Forest</u>		
	<u>Commercial</u>	<u>Department</u>	<u>Total</u>	<u>Contractors</u>	<u>Department</u>	<u>Total</u>
1976/77	143.3	-	143.3	2.99	-	2.99
1977/78	115.0	-	115.0	7.11	-	7.11
1978/79	134.1	-	134.1	11.02	-	11.02
1979/80	101.1	1.4	102.5	2.81	0.08	2.89
1980/81	25.1	3.2	28.3	0.52	0.23	0.75
1981/82	-	17.2	17.2	-	2.61	2.61
1982/83 <sup>b/</sup>	-	23.3	23.3	-	4.62	4.62

<sup>a/</sup> Excluding royalty payments paid directly to Ministry of Finance.

<sup>b/</sup> Through January 1983.

Source: Department of Forests, Ministry of Trade, Industry, and Forests.

<sup>1/</sup> Forest revenues accrue from forest royalties paid either on a per-tree or per-cubic-foot basis, profits made through the subsequent auction of logs, and revenues received from other departments for log extraction. Prior to the 1979 restrictions on commercial felling, the Government also collected license fees from contractors.

3.34 The utilization of forest resources is controlled by several major pieces of legislation. In 1969, the Bhutan Forest Act was passed which consolidated numerous previous laws relating to forest rights, the transit of forest products, and forest royalties. It declared that forest lands on which no person had a permanent, heritable, and transferable right to be Government Reserve Forest. While this covered almost all the land under forests, the Government also retained the right under the Act to absolute ownership of the forest resources on otherwise private land. Forest clearance for tsheri cultivation was banned (although encroachment continues to occur), and the felling of trees and grazing rights on forest land were brought under the control of the Forest Department. In 1974, the National Forest Policy Act was passed which further spelled out various aspects of forest utilization, development, and conservation. That Act stated that 60% of the land area should forever remain under forest cover. It also permitted private individuals to take dry firewood, including dead trees, from forest land against presentation of a permit. The permits are free and are required mainly to control entry to the forests. Individuals were also permitted to fell trees for purposes of building a house against nominal royalty payments. Commercial felling was permitted in areas approved by the Department of Forests against the payment of royalties and contractor license fees.

3.35 In 1979, the Government introduced two major changes in forest policy. First, the commercial felling of timber was severely restricted, with practically all felling being undertaken by the Department of Forests, which would then auction the logs off to private sawmills. This was done to control exploitation and to ensure good forest management practices. The Government restricted the export of logs and sawn timber in an effort to encourage greater value added on forest product exports and to allow it to formulate plans for future forest industry development. However, the extraction capacity of the Department of Forests is limited, while there is only limited scope for processing sawn timber or logs in Bhutan. These led to the decline in timber production (Table 14). To help control the illicit felling and removal of timber, the Government prohibits the transport of timber by night and has installed a series of forest check posts on major roads, mainly in southern Bhutan, to monitor the flow of forest products.

3.36 A major reason behind the Government decision to nationalize the felling of timber was to introduce sound forest management practices. So far, felling operations have mainly been dictated by available road access, rather than by standard management criteria. Trees have been felled on a selective basis for the most part, a practice which over time results in forests of mixed age. Sound management techniques normally require that all trees be extracted from an exploited area, which allows reforestation with high value species to upgrade overall forest resources, the regeneration of an even-aged forest, and the spreading of the costs of extraction over the entire extractable stock so as to minimize unit costs. The need for sound forest management techniques, including reforestation, results from the

current inaccessibility of most of Bhutan's forest resources. <sup>1/</sup> Thus, while commercial extraction does not exceed about 2% of the annual forest increment, it has been highly concentrated near the roads. In the southern foothills and in parts of the east, extraction has exceeded reforestation with the result that there are now numerous hillsides barren of trees and susceptible to landslides and erosion. At the same time, much of the forest of northern Bhutan is overaged but cannot be exploited because of lack of road access. As the Himalayas are still a young and hence fragile mountain range, forest cover plays a vital role in ensuring ecological stability. The Government is aware of this, and primarily for this reason wants to keep 60% of the land under forest cover. As forest cover is currently less than this, the Government plans to begin reforesting the overexploited areas during the Fifth Plan period. At the same time, it has stated that there are certain forest areas it may choose never to exploit for the same ecological reasons.

3.37 The restrictions on log and sawnwood exports stem from the Government's desire to increase the value added of forest-based exports, thereby increasing the forestry sector's contribution to national income, public revenues, and employment. This entails converting timber into products such as veneer and plywood, furniture, and particleboard. In addition to 27 small sawmills, the wood processing industry consists at present of three veneer mills, a pencil slat factory, a tea chest batton factory, and a match factory, all of which lie in the private sector. In addition, the Government has recently constructed with UNDP assistance a veneer and sawmill complex at Gedu to produce sawnwood, and commercial and high value decorative veneers for export. By early 1983, trial production runs had begun. A second phase of this project is planned, comprising the construction of a plywood mill, a blockboard facility, and a door frame unit. The Kuwait Fund and UNDP are considering assisting these investments. While the strategy of increasing the value added for wood product exports is basically sound, the Government should be careful to ensure that the export blend does indeed maximize export earnings. Thus, sawnwood is a relatively high-value product, despite the limited amount of processing involved in it compared to particleboard-type products, which are generally lower value products produced from waste timber. The Government is therefore reviewing its policy of restricting sawnwood exports to ensure that the blend of forest product exports from Bhutan is the one that in fact maximizes net earnings.

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<sup>1/</sup> The Pre-Investment Survey indicated that in north-central and northeast Bhutan, for instance, only 7% of the forest resources lay within 1 km of the roads, while 32% lay beyond 15 km.

INDUSTRY AND MINING

Industrial Structure and Policies

3.38 Manufacturing industry accounts for only an estimated 3.3% of GDP, which is far below the 13% average of low-income developing countries. Cottage industries are estimated to account for about one-fourth of this, while total employment in the organized sector is only about 2,000. Table 15 shows the composition of industrial production in 1980/81.

Table 15: INDUSTRIAL PRODUCTION BY SECTOR, 1980/81

	<u>Nu million</u>	<u>Percent</u>
Food Processing	14	9.7
Distillery Operations	47	32.4
Chemical Products	19	13.1
Cement	36	24.8
Forest Industries	3	2.1
Mining	18	12.4
Miscellaneous	<u>8</u>	<u>5.5</u>
Total	145	100.0

Source: Government of Bhutan.

Three sectors--food processing, distillery operations, and cement--accounted for two-thirds of industrial production, mainly reflecting the production of three large entities: the Bhutan Fruit Products Company; the Government Welfare Project, which runs the distillery operations; and the Penden Cement Authority. These also account for about two-thirds of industrial employment. All three are well-run, profitable undertakings. The latter two industries are public undertakings, while the Bhutan Fruit Products Company is a joint venture with the Tashi Commercial Corporation, the largest private sector operation in Bhutan. 1/ It primarily processes citrus fruit into jams and canned juices, which are sold throughout India and Bhutan. Otherwise, industry is privately owned and of small- or medium-scale (para 3.41)--output mostly tending to be less than half a million ngultrum, and employment fewer than 20 persons. There are about 60 such firms engaged for the most part in producing basic consumer goods including soap, candles, matches, wooden and

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1/ The Government's share in the Bhutan Fruit Products Company is 10%.

steel furniture, and simple processed foodstuffs. In addition, there are about 27 sawmills, and several hundred small agro-industries comprising rice, wheat, maize, and oilseed mills located in various areas of the country. Almost all manufacturing industries are located in southern Bhutan, where infrastructure is present and where labor and raw materials, many of which are imported from India, are more readily available. More than half the manufacturing establishments are located in Phuntsholing, and about half of those are in the industrial estate. Most of the remaining industries are located in Samdrup Jongkhar, Gaylegphug, and Samchi, where there are also small industrial estates.

3.39 The small size and simple structure of the industrial sector is a reflection of Bhutan's relatively low level of development. The domestic market is limited due to the small size and low incomes of the population; there are shortages of physical infrastructure (especially power), and a general lack of entrepreneurial capacity. The highly rural and subsistence nature of the economy has meant that entrepreneurs have been relatively few and slow in forthcoming. The Government, moreover, decided long ago that it was important that industries and trades stay in Bhutanese hands. Thus, Bhutan has prohibited private investment by foreigners in the country and taken direct measures to promote industrialization from within. In the early 1970s, in an attempt to promote Bhutanese entrepreneurship, the Government began making direct loans to selected individuals who seemed to show good entrepreneurial instincts. With these loans, the individuals were to invest in small industries---e.g., soap making, candles, sawmills---and in trade. By 1979, about Nu 10 million had been lent under this scheme, and while it has resulted in the establishment of a number of basic industries and in a small domestic class of entrepreneurs, it proved a costly way of achieving those goals. In certain cases, the funds were used for purposes other than those envisioned, while in other cases repayment performance has been poor.

3.40 In 1979, this somewhat ad hoc approach to industrial development stopped and the National Commission for the Development of Trade and Industries was established. This commission meets quarterly under the chairmanship of the King. Other members include the Minister of Trade, Industry, and Forests; the Deputy Minister of Planning; the Secretary of Finance; the Director of Industries and Mines, who is the member secretary; and the Directors of the Departments of Public Works, Power, Trade and Commerce, Forests, and the Deputy Secretary of the Royal Civil Service Commission. It is served by a working committee under the Director, Department of Industries, which comprises lower-level representatives of the above institutions. The primary purpose of the Committee is to review industrial proposals prior to presentation to the National Commission, not only for economic and technical feasibility but also ensure that the project will be genuinely Bhutanese owned. The Commission normally expects the owner to finance about one-fourth of the project costs through equity in the case of small- and medium-scale projects and about one half the costs in the case of cottage industry-scale projects. During 1979/80-1981/82, the Commission approved about 30 projects including: eight mining projects, a brick

factory, a block and flushboard factory, two lime kilns, two automobile workshops, two oil mills, a talcum powder factory, and an aerated water factory.

3.41 Industries in Bhutan are classified in four categories: large, involving fixed investment other than land in excess of Nu 10 million; medium, from Nu 1.5-10 million; small, from Nu 0.1 to 1.5 million; and cottage industries. Industrial policy is still in the process of being formulated and is thus subject to change. At present, all industries and sectors below Nu 10 million are open to the private sector, although the Government reserves the right to participate in any project. All projects in excess of Nu 10 million are expected to be public sector undertakings, not only because the Government expects private investment on this scale will not be forthcoming, but also because of its desire to maintain tight control over resource-based projects--which these ventures are likely to be. In cases where private investment would also be forthcoming, the Government would be prepared to allow them to participate; however, no individual would be permitted to own more than 20% of the equity. If the private participants are interested and capable, the Government would also permit them to manage the operation. Eventually, the Government proposes to sell its share to employees, civil servants, and other interested individuals. Foreign investment in Bhutan will continue to be prohibited, as the Government does not feel it has the ability to properly monitor the activities of foreign investors. It is also felt that most foreign investors would be interested in exploiting Bhutan's forest and mineral resources, and Bhutan is determined to develop these resources at its own pace and according to its own priorities.

3.42 Prior to mid-1982, almost all projects approved by the National Commission were eligible for government-guaranteed loans from the Bank of Bhutan. But at that time, feeling that approved projects should be able to obtain bank financing based on their own merits and their sanctioning by the National Commission, the Ministry of Finance stopped its policy of general guarantees in favor of a case-by-case approach. While it is still too early to determine whether the removal of the guarantee will adversely affect implementation of approved projects, the Bank of Bhutan has indicated that it will continue to scrutinize carefully all projects requesting financing, especially evaluating the likely competitiveness of the venture. To help ensure that approved projects will also qualify for bank financing, the Bank of Bhutan is now directly involved in the assessment of projects. At a minimum of 12.5% interest, industrial credit by the Bank of Bhutan would appear to reflect market rates, although there is some feeling that lower, subsidized rates of interest should be charged to give further encouragement to investors.

3.43 Further major constraints to the development of industry in Bhutan are the shortages of physical infrastructure, most notably power. Most industries at present are dependent on power sold to Bhutan by India from the Assam and West Bengal electricity systems (para 3.60). These systems

are heavily overloaded and subject to frequent breakdowns, while the total amount of power transmitted to Bhutan is limited. Domestic generation is expensive and makes up only part of the shortfall. Thus, industries in Bhutan face high cost power and frequent power cuts, both of which are costly in terms of production. The power situation in western Bhutan should improve dramatically by the mid-1980s as power from the Chukha project becomes available in that area.

3.44 Another major constraint to the development of indigenous industry in Bhutan is the shortage of manpower. As a result, about three-quarters of the labor force in industry is non-national. The severe scarcity of technically trained manpower has inevitably meant that most skilled personnel, including many plant managers, are from outside Bhutan, usually India. But perhaps more surprisingly, most unskilled labor is also non-Bhutanese. This is a reflection of several factors, including the small population, the low productivity of labor in agriculture, and a disinclination on the part of many Bhutanese to factory-type work. Also, given that most factories are in southern Bhutan, there is easy access to relatively cheap labor of India. Thus, while non-national factory labor averages about Nu 7 in daily wages, the wage for Bhutanese labor for equivalent work is about half as much again. Even then, few choose to do factory work (see also Table 23). This situation is unlikely to change much in the medium term, and industrialization has to be accompanied by increased use of both skilled and unskilled non-national labor. Approval for non-national labor must be obtained from the Registration Department of the Ministry of Home Affairs. As the Ministry is well aware of the labor problem, approval is usually easy to obtain. Over time, the Government intends to approach this problem through the use of labor-saving technologies.

3.45 The domestic construction industry is still very rudimentary. Nearly all public sector construction activities are undertaken by government departments, principally the Public Works Department (PWD). To date, domestic contractors have only undertaken buildings construction, the largest single contract being about Nu 10 million. Most rural houses are built according to traditional designs using communal labor.

3.46 Mining (excluding the limestone mining operations of the Penden cement factory), accounted for only about 0.8% of GDP despite Bhutan's good mineral endowment. Exploitation is constrained by the inaccessibility of many deposits, high extraction and processing costs, and a lack of power. The main mining operations are the Government-run slate mine near Wangdiphodrang and a marble mine at Paro which is currently inactive; three coal mines; and six dolomite mines; and two limestone mines, all in southern Bhutan. Slate and marble are used domestically, as transport costs to India are excessive, but dolomite chips, lime, and coal are exported to India. Until 1982, these latter mines were leased out to operators who paid a set royalty to the Government on each ton mined. To improve revenue collection, the Government in 1982 replaced these set royalties with an auction system

under which operators instead bid for the per ton royalties for a fixed period of time. As a result, average royalty collections have more than doubled.

### The Penden Cement Factory

3.47 The Penden cement factory is the first modern large-scale industry established in Bhutan and as such, a review of its history and its operations may prove a useful indication of what relatively large-scale industrialization in Bhutan involves. The Penden Cement Authority was established in 1974, and construction on the plant began in 1976. The Nu 143.4 million project was provided on a grant basis by the Government of India to the Government of Bhutan. Although the plant was commissioned in October 1980, full-scale commercial production did not begin until January 1981, due to the need to install 2.5 MW of captive power generating capacity to augment irregular supplies from the West Bengal grid. Even though there was no formal agreement regarding cement sales to India, it is understood that all production in excess of Bhutan's domestic needs would be exported to India.

3.48 The factory is situated immediately across the Indian border at Pagli between Phuntsholing and Samchi in Samchi district in southwestern Bhutan, and at present is accessible by road only from India. The plant itself is a single kiln dry-process facility with a capacity of 300 MT per operating day (about 100,000 MT per year). Limestone is transported by a 6 km ropeway from deposits, estimated at 5 million MT. Coal to fire the process and gypsum are imported from India. There are approximately 1,050 employees, including about 100 higher level staff. All but about 15 of the higher level staff are Indian, while most of the unskilled labor is also from India.

3.49 Performance of the plant since full-scale commercial operations began in January 1981 has been excellent. In its first full year of operations, it produced 81,000 metric tons of cement, operating at over 80% of rated capacity. Total sales amounted to Nu 48.8 million compared to costs of about Nu 36.6 million, including depreciation of Nu 9.0 million. The entire Nu 12.2 million operating surplus was transferred to the Government either as income tax or as profit, accounting for about 12% of total government receipts. It is currently operating at over 90% of capacity. Cement is sold in three markets--the domestic market, the regulated Indian market (so-called "levy" sales), and the free Indian market. 1/ The domestic ex-factory price is Nu 665/MT, whereas "levy" sales to India fetch Rs 650/MT and the free market sales, about Rs 1,100/MT. The amount Bhutan can sell on the free

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1/ Since 1982, Indian cement manufacturers have been permitted to sell between about one-third and one half of their cement in the free market, where it fetches a substantial premium over sales in the regulated market.

market is negotiated each year. For 1982, the two governments agreed that Bhutan would sell 10,000 tons (about 12% of total anticipated production and one-fourth of total sales to India) on the free market. Currently, domestic consumption accounts for about 45% of total production, largely due to the requirements of the Chukha hydro-power project. This is likely to fall somewhat, and exports to India rise, as the civil works on the project wind down.

#### TOURISM

3.50 Bhutan's breathtaking Himalayan scenery, its rich culture, and indeed its relative obscurity combine to surround it with a unique mystique, and make it a strong tourist attraction. However, the Government has deliberately chosen to develop tourism slowly and to tightly control it, in part because Bhutan's hard currency needs have been relatively modest, but mainly because it wishes to minimize the impact of tourism on traditional society. In keeping with this objective, Bhutan has sought to maximize the earnings per tourist by pursuing a high-price, all-inclusive package tour strategy. Consequently, tourist volume has been low. Even though the overseas tourists have been permitted to visit Bhutan since 1974, by 1981/82, only about 7,800 arrivals had been recorded, including a maximum of only 1,621 in 1979/80. <sup>1/</sup> Despite the restrictive tourism policy, tourism has become Bhutan's principal hard currency foreign exchange earner. Receipts amounted to about \$1.4 million in 1981/82, and as almost all tourism-related needs can be procured locally or from India, practically all of this resulted in a net addition to hard currency reserves.

3.51 Initially, tourists were permitted to visit only the Phuntsholing, Paro, and Thimphu areas in western Bhutan, but in 1978 the package tours were extended eastwards to include Punakha and Wangdiphodrang; and in 1982, Tongsa, Bumthang, and Gaylegphug in central Bhutan. Trekking tours were introduced in 1978 in western Bhutan, and in 1982 these were also extended to include areas of central Bhutan. Unlike the practice in neighboring countries, trekking in Bhutan is carefully supervised so as to minimize the environmental impact. Trekkers move in organized groups along set routes, overnighiting at specified camping areas and cafeterias. The most popular tour continues, however, to be the one week cultural tour of Paro, Thimphu, and Punakha. Tourists are currently being charged an all-inclusive flat rate of \$130 per day in the high season, and \$90 per day in the lean season.

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<sup>1/</sup> Of 7,807 arrivals during 1974/75-1981/82, 31% were from the USA, 26% from Germany, 18% from Japan, 8% from France, 7% from Switzerland, 3% from the UK, 3% from Italy, and 4% from other countries.

Trekking tours are charged at a rate of \$90 per day. Individuals and smaller groups are combined to form groups of at least six, the minimum tour group size.

3.52 Despite the high daily rates charged, tourism has not been as profitable a venture as the Government had hoped. A total of Nu 15.2 million had been invested in tourism facilities, including Nu 12.2 million in hotels; however, the overall occupancy rate had never exceeded 17%. 1/ In order to understand more clearly the financial performance of the sector, the Government commissioned a financial review in 1982. 2/ The main findings of that review are shown in Table 16. The survey indicated that, to date, the tourism industry had earned an average rate of return of only about 15% on the fixed investment in the sector. While this return may be considered acceptable, it is well below potential, considering the relatively low utilization of hotel capacity. Part of this problem undoubtedly reflects seasonality--November through February tends to be quite cold in northern Bhutan while July and August are monsoon months. Moreover, the Phuntsholing hotel serves primarily as a transit facility. Even allowing for these factors, it is clear that facilities are underutilized. Given the limited tourist facilities, increasing utilization will entail strengthened efforts to spread tourism arrivals out more evenly during the year and to coordinate their movement between facilities.

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1/ Hotel capacity currently consists of the 68-bed Mothitang Hotel in Thimphu, the 64-bed Olathang Hotel in Paro, and the 52-bed Kharbandi Hotel in Phuntsholing. The Paro and Thimphu hotels are, however, being expanded. The 46-bed Bhutan Hotel in Thimphu is also owned by the Department of Tourism, but it is used mainly by official visitors.

2/ Report on Valuation of Assets and Review of Income and Expenditure of the Department of Tourism, Khanna and Annadhanan (Chartered Accountants), New Delhi, August 1982.

Table 16: TOURISM INCOME AND EXPENDITURE, 1975/76-1981/82  
(Nu million)

	<u>Income</u>	<u>Expenses Before Depreciation</u>	<u>Surplus Before Depreciation</u>	<u>Depreciation</u>	<u>Net Surplus</u>
1975/76	2.81	2.78	0.03	0.74	-0.71
1976/77	2.18	2.11	0.07	0.89	-0.82
1977/78	4.39	2.77	1.62	0.89	0.73
1978/79	7.98	3.88	4.10	1.09	3.01
1979/80	12.07	5.29	6.78	1.09	5.69
1980/81	9.28	8.39	0.89	1.16	-0.27
1981/82	<u>12.60</u>	<u>7.84</u>	<u>4.76</u>	<u>1.10</u>	<u>3.66</u>
Total	51.31	33.06	18.25	6.96	11.29

Source: Khanna and Annadhanan, op. cit.

3.53 During the Fifth Plan period, Bhutan hopes to more than triple the number of tourists visiting Bhutan--from 1,406 in 1980/81 to 4,720 by 1986/87. Gross foreign exchange receipts are expected to increase from \$1.2 million to about \$4 million over the same period. These targets are to be achieved by making more efficient use of existing infrastructure through increasing the average duration of the stay, encouraging a more even distribution of arrivals over the year, and encouraging activities which require less investment, such as trekking. Accordingly, the tourism investment program is relatively modest, involving mainly the completion of extensions to the Paro and Thimphu hotels and the construction of trekking community halls, at a total cost of about Nu 26 million.

3.54 As part of the reforms designed to improve overall financial management (paras 2.33-2.34), as well as to provide a clearer basis for evaluating the financial performance of the tourism sector, the Government decided to remove, effective April 1, 1982, all commercial operations associated with tourism--hotels, transport services, and tour operations--from the Government budget and to establish a Tourism Commercial Organization. Only Department of Tourism overheads will continue to be funded by the Government. Investment funds in future will have to be obtained through internal cash generation, or through loans. This issue is of immediate importance--in addition to its existing assets of Nu 15.2 million, the Department of Tourism has Nu 17.9 million in works in progress, as well as further investment plans of Nu 25.8 million during the remainder of the Fifth Plan. The review report recommends that the Government restructure the industry on a 50/50 debt/equity basis, implying Nu 29.45 million as equity on which the Government would be entitled to draw dividends, and

Nu 29.45 million on loan terms at 10% interest. As the Nu 33.1 million that has already been invested in tourism would include all the equity, the remaining Nu 25.8 million would have to be mobilized through cash generation and loans. It is, therefore, unlikely that tourism would pay any dividend prior to 1986/87, although it would make annual contributions to the budget via the new 30% corporate profits tax.

ENERGY AND POWER

Overall Consumption Patterns

3.55 Bhutan's immense forest resources provide an abundant and readily available source of energy, so it is not surprising that per capita energy consumption is relatively high, the low level of industrial development notwithstanding. Per capita energy consumption amounts to a high 0.78 tons of oil equivalent (toe)--see Table 17--which is about twice as high as neighboring Nepal, with a similar per capita income and overall pattern of energy consumption. This figure is, however, distorted by the fact that 95% of the energy is consumed as fuelwood, where the useful energy content (or end-use efficiency) is only 10-20% in most use situations. But even after adjusting for typical end-use efficiencies, per capita energy consumption amounts to a comparatively high 0.13 toe. This compares with 0.09 toe in the moderately industrialized and relatively energy-intensive economy of Sri Lanka and about 0.07 toe in Nepal.

Table 17: PER CAPITA ENERGY CONSUMPTION, 1981/82

	<u>Gross Consumption</u>		<u>Useful Energy a/</u>	
	<u>TOE</u>	<u>Percent</u>	<u>TOE</u>	<u>Percent</u>
<u>Non-Commercial Energy</u>				
Fuelwood	0.760	97.4	0.114	91.4
<u>Commercial Energy</u>				
Coal	0.007	0.9	0.004	3.0
Petroleum Products	0.011	1.4	0.005	4.1
Electricity	0.002	0.3	0.002	1.5
Sub-total	0.020	2.6	0.011	8.6
Total	0.780	100.0	0.125	100.0

a/ Following end-use efficiencies assumed: Fuelwood - 15%,  
Coal - 55%, Petroleum - 45%, Electricity - 90%.

Source: Bank staff estimates based on data provided by  
Government of Bhutan.

3.56 Fuelwood accounts for practically all of the non-commercial energy consumption, and allowing for its low end-use efficiency in Bhutan, it still comprises over 90% of total energy consumption. It is the principal household fuel, being used for cooking and heating. There are no restrictions on its use for household energy purposes, and as wood is easily available almost everywhere in Bhutan at no cost, consumption is essentially unconstrained. Consumption estimates under the 1974-79 forest survey (para 1.08) ranged from 3.9 cubic meters per capita annually in the relatively high altitude and cool northwest, to 2.3 cubic meters per capita in the south where heating needs are minimal. Assuming a national average of 3 cubic meters per person annually, per capita consumption is very high--more than twice that of Nepal and about six times that of Sri Lanka.

3.57 In contrast, per capita consumption of commercial energy is very low. It accounts for less than 10% of the useful energy consumed (3% of total energy consumed), amounting to 0.02 toe per capita--this is only one-third the average for low income countries (excluding China and India). Commercial energy comes from three sources: coal (33%), petroleum (57%), and electricity (10%). Coal is used exclusively by the Penden cement factory, which consumes about 18,000 MT a year of higher grade imported coal.

3.58 Petroleum products--gasoline and diesel for road transport, and kerosene, primarily for lighting--are imported from India by two subsidiaries of the Tashi Commercial Corporation. Bhutan Oil Distributors imports from Bharat Oils in West Bengal and distributes in western Bhutan, while the Bhutan Oil Corporation imports from Indian Oil Corporation in Assam and distributes in eastern Bhutan. Table 18 shows 1981 petroleum imports and selling prices. These prices reflected the purchase prices from the Indian distributors, adjusted for the Bhutan sales tax and distribution and transport costs. <sup>1/</sup> Thus, prices are lowest in the foothills and highest in the north-central areas, the maximum price differential being about 16%. Petroleum prices are not subsidized in Bhutan, but as they are based on Indian prices, they reflect Indian policy of cross-subsidizing kerosene sales with gasoline sales.

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<sup>1/</sup> Sales tax for gasoline, Nu 0.18/liter; for diesel, Nu 0.105/liter; for kerosene, Nu 0.02/liter; and for lubricants, Nu 0.05/liter.

Table 18: PETROLEUM PRODUCT IMPORTS AND RETAIL PRICES, 1981

	Imports ('000 liters)	Retail Prices (Nu per liter)	
		Thimphu	Phuntsholing
Diesel	10,900	3.28	2.85
Gasoline	2,222	6.28	5.76
Kerosene	1,621	2.02	1.70

Source: Bhutan Oil Distributors.

### Power

3.59 Although Bhutan has enormous hydro-power potential, electricity consumption is among the lowest in the world, and the first hydro-power capacity was not installed until as recently as 1967. Total installed generating capacity is only 15.68 MW, of which only 3.45 MW is hydro (Annex 6). 1/ Domestic generating capacity comprises six small hydro-power plants and six diesel generating stations. These small power plants form a number of localized sub-systems--Thimphu and Paro (both of which have hydro and diesel generating capacity); Wangdiphodrang, Mongar, and Tashigang which have hydro-power capacity; and Tongsa and Damphu, with only small diesel generators.

3.60 In southern Bhutan, the principal source of power is the northeast Indian grid (Table 19). Power is purchased from three sub-stations of the Assam State Electricity Board, which serves Gaylegphug and Samdrup Jongkhar districts and from four sub-stations of the West Bengal State Electricity Board, which serve Sibsoo, Phuntsholing, Pagli, and Samchi. 2/ Purchases at the latter three stations are augmented by domestic diesel generation. Under arrangements worked out with the two Boards, Bhutan purchases power at Indian state-to-state rates, which are currently at 50-60 Indian paise (5-6 US

1/ This includes 6.28 MW of diesel generating capacity at the Chukha hydroelectricity project site, 2.49 MW of diesel capacity at the Penden cement factory, and 0.50 MW at the Gedu wood industries factory. It excludes other smaller captive power plants.

2/ In addition, Bhutan purchases power via a direct 66 kV link from Birpara to the Chukha hydro-power project site. As of early 1983, this power is also being transmitted to Thimphu.

cents) per KWh. 1/ The transmission facilities from the Indian sub-stations to Bhutan were paid for and are maintained at Bhutan's expense. Except for the 66 kV line to Chukha and Thimphu, these are all low capacity 11 kV and 33 kV lines.

3.61 There is a serious overall mismatch between electricity demand and generation. Generating capacity is highest during the summer months when river flows are highest; on the other hand, demand peaks during the winter months due to heating needs. The problem centers on the Thimphu/Paro area which accounts for over half of total consumption. There, the Department of Power has been forced to shed up to half of the load at peak hours during recent winters. At the same time, there is excess generating capacity at other hydro facilities. At Wangdiphodrang (which also serves Punakha), Mongar, and Tashigang, the average load factors do not exceed 35%. Although there is thus excess generating capacity at these locations, this is mainly because local distribution is limited. There is, moreover, little possibility of transmitting to the deficit western region as the power plants are small and the transmission distances are long. In any event, the situation in western Bhutan will change completely by late 1984 as Chukha power comes on stream. In southern Bhutan, especially in areas served from West Bengal, electricity supply is constrained by the capacity of the transmission lines and by frequent power cuts.

3.62 As power demand is in excess of available supplies in the main consuming areas, meaningful overall demand growth estimates cannot be derived. But in areas where consumption has not been supply-constrained, i.e., in eastern and central Bhutan, demand averaged 10% average annual growth during 1977-82. The patterns of electricity consumption reflect Bhutan's low level of development. In the Thimphu/Paro, Wandiphodrang, Tashigang, Mongar, and Samdrup Jongkhar sub-systems, domestic consumption averages 82% of consumption; commercial (including government) and industrial consumption, only 14%. Only in Phuntsholing is consumption relatively evenly distributed, reflecting its role as the country's main commercial and industrial center--domestic consumption there accounted for 46% of total consumption, while commercial and industrial consumption amounted to 27% and 18%, respectively. 2/ Household uses of electricity are mainly for lighting

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1/ Bhutan also receives 250 KW of power free from India under a 1961 agreement which provides for hydro-power from an 18 MW dam on the Jaldhaka river to be shared. The Jaldhaka river rises in Sikkim and runs along part of the Bhutan-India border in southwest Bhutan.

2/ It should be noted, however, that many industries have their own captive generating capacity. To the extent this capacity is used, consumption of electricity by industry is underestimated.

and for operating small appliances, including electric heaters. Few households use electricity for cooking, due to the relatively high cost of electric stoves, the present high price of electricity, and the easy accessibility to fuelwood.

Table 19: DOMESTIC ELECTRICITY GENERATION AND PURCHASES FROM INDIA,  
1977/78-1981/82  
(in GWh)

	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
<u>Domestic Generation a/</u>					
Hydro	5.488	7.150	7.493	7.314	7.577
Diesel	-	-	0.608	1.529	1.573
Sub-total	5.488	7.150	8.101	8.843	9.150
<u>Purchases from India</u>					
WBSEB b/	..	..	0.756	1.209	1.418
ASEB c/	1.106	1.157	1.190	1.255	1.778
Sub-total	..	..	1.946	2.464	3.196
Total	..	..	10.047	11.307	12.346

a/ Excludes captive generation.

b/ West Bengal State Electricity Board.

c/ Assam State Electricity Board.

.. Not available.

Source: Department of Power, Ministry of Development.

3.63 The difficulty in matching power supply with demand is reflected in its need for operating subsidies. While it is general policy of the Government to charge cost-covering rates to the users of services, it also wishes to maintain reasonable balance in the tariff between regions. The tariffs in southern Bhutan are derived from the tariffs charged by the respective Indian boards, adjusted for transmission and distribution losses and other operating costs. Thus, the basic household tariff varies between Nu 0.50 and Nu 0.70 per KWh, depending on the region, with rates for other uses correspondingly set somewhat higher. Tariffs are generally adequate as long as the Department of Power does not have to generate significant amounts of power using diesel. But when it does, it loses heavily. The cost of diesel generation amounts to Nu 2.2-2.5 per KWh, far higher than the revenue per KWh. Losses per unit are heaviest in Damphu and Tongsa, which only have

diesel generators, but these comprise only a negligible proportion of total generation. Most of the losses are accounted for by diesel generation in the two main load centers--Phuntsholing, where thermal power accounts for about 40% of total consumption, and Thimphu/Paro, where it accounts for about 13% of generation. Contributing to the Department's financial difficulties are the relatively high transmission and distribution losses. These range from about 40% in Thimphu and in the systems of southern Bhutan, to 30% in the smaller systems. While part of these losses can be attributed to the relatively inefficient low-voltage distribution system, there is also a problem of power leakages. Improvement in both of these areas will play an important role in improving the financial performance of the Department. In 1981/82, it required Nu 1.5 million in subsidy to cover its costs, while for 1982/83 the required subsidy is budgeted to amount to Nu 1.2 million. Subsidies are likely to be needed through late 1984 when Chukha power is to come on stream. But, at that time, the Department should be in a position to cover its operating costs and make a significant contribution to cover its investment program, provided Chukha power is priced realistically.

#### The Chukha Hydro-Power Project

3.64 The Chukha hydro-power project is by far the largest single investment undertaking ever initiated in Bhutan; it is about 15 times as large as the previous largest project--the Penden cement factory. The project marks the first major step towards exploiting Bhutan's enormous hydro-power potential. It will harness the waters of the Wang Chu river in western Bhutan over a 465 m drop between Chimakothi and Chukha. The project site is situated between kilometers 83 and 97 north of Phuntsholing on the road to Thimphu. The project involves construction of a 40 m high gravity dam to divert the river waters after desilting into a 6.5 km headrace tunnel. The water is then carried down two intake shafts to an underground powerhouse with four 84 MW turbines. As the storage capacity of the dam is limited to about one day's flow, available power will vary from 336 MW peak capacity to an estimated 100 MW firm capacity during the winter season. Annual energy output is expected to be about 1,944 GWh, including about 900 GWh in firm energy and 1,044 GWh in secondary energy.

3.65 Initial investigations of the Wang Chu river were undertaken in 1961, and construction of the preliminary works began in 1973. The diversion tunnel was completed in late 1980 and underground works are in progress. The first 84 MW turbine is expected to be commissioned in late 1984 and the remaining three units by mid-1985. Between 1973 and December 1982, total estimated project costs rose from Nu 830 million to Nu 1,970 million (\$205 million). Expenditure from 1973/74 through August 1982 amounted to Nu 1,030 million including Nu 399 million during the Fifth Plan period. The Chukha project is being implemented outside the regular development plans, but if it had been included, it would have given the Third and Fourth Plans quite different complexions (paras 5.07-5.08). And at roughly Nu 1,370 million,

the projected outlays during the Fifth Plan period are very close to the total of all other development sector capital outlays combined. If it were part of the Plan, it could account for at least 24% of total outlays (see also para 5.19).

3.66 To transmit the power to western Bhutan, the project at present includes a 66 kV single circuit transmission line from Chukha north to Simtokha (near Thimphu), while the 66 kV single circuit line currently bringing power to the project site from India will be used to transmit power from the Chukha south to Phuntsholing. But as the power generated by the project will far exceed Bhutan's needs for some time to come, the bulk of the power generated will be sold to India. Accordingly, the project also includes two 220 kV transmission lines (one single and one double circuit line) to transmit power from Chukha to the Birpara sub-station in West Bengal. Concerned about future growth in demand in northwest Bhutan and limitations imposed by the terrain on installing additional transmission lines north of Chukha at a later date, the Government hopes to add an additional 220 kV line from Chukha to Simtokha under the Fifth Plan (para 5.36).

3.67 Project implementation is overseen by the Chukha Hydel Project Authority established under the 1974 project agreement between the Governments of Bhutan and India. The Authority is an autonomous body under the Chairmanship of His Majesty's Representative in the Ministry of Development, and includes seven directors--four appointed by the Government of Bhutan and three appointed by the Government of India. Water and Power Consultancy Services (India), Ltd. are designated as consultants to the Authority, while it is stipulated that all skilled and technical manpower will be nationals of either Bhutan or India.

3.68 Under the 1974 project agreement, India agreed to finance the entire project costs on a 60% grant, 40% loan basis. The loan would be repayable over an 15-year period (including three years grace) and carry an interest rate of 5%. While Bhutan will have sole ownership of the project, it agrees to sell surplus power to India at an agreed rate, which will be reviewed every four years, while India agrees to purchase all the surplus power. The initial rate will be set at the time of commissioning according to a formula set out in the project agreement. The formula is designed to yield a rate which covers annual operating costs (defined as the interest on the project loan, plus operating and maintenance costs <sup>1/</sup>) and allows the Government a 10% return on its equity (considered the grant component). Secondary energy is priced at half of firm energy. Assuming the project will cost around Nu 2,000 million, the tariff would work out to Nu 0.13 per unit of firm

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<sup>1/</sup> Considered Nu 2 million plus 1% of the total project costs.

energy sold (up to 900 GWh) and Nu 0.065 per unit above that. Under this arrangement, gross revenue to the Government would work out to about Nu 185 million per year; net of operating and maintenance costs, to about Nu 93 million. This would be equivalent to over 70% of total estimated government receipts for 1982/83.

## TRANSPORT INFRASTRUCTURE AND SERVICES

### Roads

3.69 Bhutan's mountainous terrain with its deep valleys and numerous rivers had always made transportation and communications difficult. The minimal amount of internal and external trade that did take place relied on human and animal portage along a network of trails that criss-crossed the country. Physical constraints to the construction of modern transport infrastructure were reinforced by the conscious decision not to undertake any road construction, thereby keeping Bhutan largely inaccessible to outsiders. Thus, Bhutan turned down several offers of roads, including those early in the century by the British who had been anxious to develop more convenient links to Tibet. By the late 1950s, however, Bhutan had decided to start developing the economy, including the gradual establishment of physical links to the outside world. Thus, in 1959, using compulsory labor, the Bhutan Engineering Services (BES) started construction on Bhutan's first road, from the border town of Phuntsholing to Paro in the northwest. This road was completed by 1962, and by 1963 BES had begun construction of a second north-south link from Samdrup Jongkhar to Tashigang in the east.

3.70 Road construction proved to be a heavy drain on the economy, drawing critical labor away from agriculture. It is likely, therefore, that road construction would have proceeded relatively slowly in Bhutan, had it not been for the decision in 1959 to accept Indian offers of development assistance. Under this assistance, the Indian Border Roads Organization (BRO) became involved in roads and communications development in Bhutan, bringing with it a large number of contract laborers. <sup>1/</sup> With the assistance of the BRO, the road to Paro was widened and surfaced, and the road from Samdrup Jongkhar to Tashigang was completed. During the Second Plan period, the BRO continued to widen and surface these roads while it also established a third link from the border to the interior from Gaylegphug to Tongsa in central Bhutan. In 1965, the BRO began construction on an east-west road linking Thimphu and Paro to Tashigang. This road was opened to through traffic in 1975, and so far about 200 km of this 550 km road have been paved.

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<sup>1/</sup> The BRO is a construction organization under the Indian Ministry of Transport. It is largely comprised of military personnel, and its operations in Bhutan go under the name of DANTAK.

With the establishment of the basic road network by 1975, emphasis has shifted to roads linking district headquarters to the main network and to feeder roads.

3.71 By late 1982, all but two district headquarters were linked to the road network, and a total of about 2,050 km of roads had been constructed, of which roughly half, including the three north-south roads, were paved. Although the road density is low in relation to both surface area and population--0.044 km per sq km of land area and about 1.77 km per 1,000 population--Bhutan, with Indian assistance, has made great progress in a short period of time considering the high cost and difficulty of road construction. 1/ Due to the need to cross countless deep watersheds, most roads had to be carved out of steep mountainsides often climbing and descending over a thousand meters at a time. As a result, actual road distances are usually several times the straight-line distances, while the roads climb to altitudes as high as 3,780 m. Road construction costs are estimated at Nu 500,000 to Nu 750,000 per km (about \$50,000-\$80,000). These costs are comparatively low and result from the use of compulsory low-cost labor and relatively low road standards. Until early 1983 when it introduced its own roads standards, the PWD had generally adopted the Indian Roads Congress standards for hill areas, introduced by the BRO. 2/ Bridge designs are also based on Indian practice. The main highways constructed and maintained by the BRO are of a particularly high standard. Gradients seldom exceed 5%, road surfaces are smooth, and drainage is good, while road marking and signs are more than adequate. While the PWD generally adopts the same standards, construction and maintenance are constrained by limited technical and financial resources. In general, however, Bhutan must be considered as having a well-conceived and well-constructed road network, given how recently road construction began, the low income of the country, and the very difficult physical conditions under which construction, improvement, and maintenance must take place.

3.72 The PWD is responsible for the planning, design, construction, administration, and maintenance of all major road and government construction projects. It also has, through staff reassigned to the district

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1/ Road density is significantly higher than in nearby Nepal, which has about 0.036 km per sq km of land area, and about 0.36 km per 1,000 population.

2/ Under the standards introduced by the BRO, national highways have 3.75 m wide carriageways with 1.25 m shoulders on each side. Passing areas are provided by local widening of the road. District and feeder roads are built to somewhat lower standards--the roads are 3 m wide and have gradients of up to 8%.

administrations, technical responsibility for district-level construction works including suspension bridges, mule tracks, district-level roads, and rural water supply projects. Prior to the Fifth Plan period, road planning, construction and maintenance activities of the BRO were conducted largely independently of the PWD, while BRO activities were funded outside the regular Government of India grants. Since 1981/82 the surfacing of the east-west road by the BRO has been budgeted for by Bhutan out of the annual development grants. The BRO, for the time being, maintains most of the national highway system including the three north-south roads and the east-west road from its own resources.

3.73 The construction of new roads is undertaken by the PWD on a force account basis. Construction practices are highly labor-intensive, with almost all rock clearing, rock crushing, spreading of granular materials as well as asphaltting done manually. Almost all labor is mobilized under the compulsory labor scheme, but some Indian or Nepalese contract labor is paid on a daily basis. BRO activities, on the other hand, rely exclusively on contract labor. Due to the shortage of labor, the PWD has begun selective mechanization with equipment provided under UN assistance.

3.74 The conditions under which roads must be maintained in Bhutan are severe, with some roads located in sub-tropical plains and other perched on steep mountainsides subject to heavy rains, ice and snow, and landslides. Bhutan is fortunate, however, that road traffic is light, which reduces normal wear and tear. Nevertheless, unusually large funds are required for adequate road maintenance. Apart from those sections maintained by the BRO, the PWD is responsible for maintenance of the national highway system. The districts are responsible for the maintenance of district and feeder roads. Maintenance by the BRO is carried out according to well-established programs for both routine and periodic maintenance, and the standard of maintenance is excellent. As the BRO maintains the main national highways and the district administrations are responsible for maintaining district level roads, the central PWD maintenance responsibilities are limited; nevertheless, its maintenance of national roads appears less than satisfactory, both because the average of Nu 10,000 per km is relatively low given physical conditions, and because maintenance activities do not appear clearly planned or implemented. It is also likely that due to difficulties encountered in road construction, some resources earmarked for maintenance are being reassigned to construction. District and feeder roads are generally maintained by labor-intensive means by the districts; so far, these roads have been adequately maintained.

3.75 A major constraint facing the PWD in its construction and maintenance programs is the acute shortage of graduate Bhutanese engineers. While the two top positions in the PWD are filled by nationals, they occupy only 6 of the top 14 posts overall. The remainder, as well as most field engineering positions, are filled by engineers either hired on contract terms from India

or on deputation from the Government of India. However, with increasing numbers of graduates from the Deothang and Kharbandi technical institutes as well as returnees from abroad, the number of Bhutanese engineers is gradually increasing.

#### Other Transport Infrastructure

3.76 Foot and mule tracks have long provided the principal means of transport in the Himalaya and can be expected to continue to play an important role for many years to come, despite the growth in the road network. The main constraint to foot travel has usually been the swiftly flowing rivers, which often necessitate detours of several days to the nearest bridge, and indeed often sweep the bridges away. Recognizing the importance of trails and bridges in transport and communications, the Government has embarked on a program to construct foot suspension bridges and improve existing trails. Through the end of the Fourth Plan, 114 bridges had been constructed.

3.77 Because of the emphasis on roads development which has integrated all major regions of the country, resource constraints, as well as the very limited demand for air travel, no regular air service has operated either into or within Bhutan. 1/ There are, however, two disused airfields which were built by the BRO in the 1960s--one at Paro, about 90 minutes drive from Thimphu, and one at Yangphula, 25 km south of Tashigang. 2/

3.78 To improve travel into and out of Bhutan, the Government has recently established a national airline, Druk Air Corporation (DAC), and a Department of Civil Aviation. 3/ Bhutan has purchased an 18-seat aircraft, which is based in Calcutta for servicing purposes. Operations began in February 1983 with two round-trip flights a week to Paro. Financial projections by DAC indicate that on the basis of this level of service they would incur a loss. However, DAC plans to increase the frequency of service and to lease the aircraft to the third-level Indian airline, which it estimates should enable it to break even. However, that airline has yet to decide on an aircraft type, which could affect DAC's leasing possibilities.

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1/ For brief period in the mid-1970s, Indian charter airlines operated occasional flights into Paro from northern India using DC-3 aircraft.

2/ The Yangphula airfield has never been used by fixed-wing aircraft.

3/ Until early 1983, all entry and exit entailed land travel to and from the nearest civil airfield, located at Bagdogra in West Bengal. While time consuming--Bagdogra is roughly two days drive from Thimphu--special permits are also required to travel in that particular area of India.

3.79 Ropeways often offer a cost-effective alternative to roads construction in mountainous areas, and a number have already been installed in Bhutan to transport specific cargos--mainly timber and minerals. The longest is the 6 km ropeway at the Penden cement factory. A 500 m ropeway carries slate from the mine site near Wangdiphodrang to the nearest road. At Bumthang, Paro, and Gedu, the Department of Forests has mobile cranes for the transportation of logs. These cable cranes of 800 m or 1,400 m length can be moved relatively easily and operate by diesel-powered winches. A detailed study is currently under way to examine the feasibility of a 60 km ropeway from Chuzom to the Indian border east of Phuntsholing. Later phases of the project would create feeder ropeways. The ropeway would have a capacity of about 500,000 MT per annum, and be used mainly to carry resource-based products out of northwest Bhutan. The cost of the first phase has initially been estimated at \$40 million. Because of their swiftly flowing nature, the use of waterways for transport is very limited. Bhutan has no railways--the nearest railhead is about 40 km south of Phuntsholing; the closest broad gauge railway is 90 km away.

#### Traffic and Transport Policy

3.80 The total vehicle fleet (excluding about 200 army, police, and BRO vehicles) is about 2,700. This is very low even considering the limited road network, and consequently roads are not heavily trafficked. <sup>1/</sup> Table 20 shows the distribution of vehicles; almost half are owned by the Government. Servicing and repair facilities are available at four government workshops located in Thimphu, Phuntsholing, Gaylegphug, and Samdrup Jongkhar. There is only one major private workshop, located in Phuntsholing.

3.81 The few restrictions on truck loads and sizes are difficult to enforce; however, the rugged terrain precludes the operation of vehicles much larger than 5-7 ton capacity. Motor vehicle registration taxes are relatively low, ranging from Nu 150 annually for a scooter, to Nu 300 for a car, and Nu 1,500 for a heavy Government truck. Total motor vehicle taxes in 1981/82 amounted to Nu 3.7 million, which was equivalent to about one-fourth of the PWD's estimated annual maintenance requirements.

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<sup>1/</sup> PWD keeps no traffic counts, but mission estimates indicated average daily traffic of about 200 on the Thimphu-Phuntsholing road, with somewhat higher figures near the terminal towns and the Chukha project. Other national highways have estimated daily traffic counts of 10-100; rural roads, even lower. Long distance traffic was almost exclusively trucks and buses.

Table 20: REGISTERED VEHICLES  
(as of October 1982)

	<u>Government</u>	<u>Private</u>	<u>Public</u>	<u>Taxi</u>	<u>Total</u>
Four-Wheel Drive	438	191	-	67	696
Cars (Indian)	239	117	-	2	358
Cars (Third Country)	181	128	-	-	309
Trucks	196	176	221	-	593
Buses	113	-	-	-	113
Motorcycles	73	93	-	-	166
Scooters	<u>45</u>	<u>410</u>	<u>-</u>	<u>-</u>	<u>455</u>
Total	1,285	1,115	221	69	2,690

Source: Ministry of Finance.

3.82 With the completion of the first roads in 1962, the Government also created the Bhutan Government Transport Service (BCTS). BCTS began with a fleet of 40 vehicles provided under the Colombo Plan and a monopoly on both passenger and freight services. BCTS lost its monopoly on freight services in 1976, with the establishment of the Bhutan Transport Syndicate of registered private truckers. It booked and consolidated freight orders, trying in the process to give all members a fair share of the trade. It also negotiated freight rates. While transport operations functioned smoothly under the Syndicate, administrative expenses and freight rates grew rapidly. There was also concern that the Syndicate was exploiting its monopoly position. Therefore, in mid-1982 the Government dissolved the Syndicate. In a free market situation that followed, rates dropped sharply as haulers competed for business to be able to cover their monthly truck payments. Within two months, the Transport Corporation of Bhutan (TCB), jointly owned by the RICB and the UTB was formed, mainly to help the truck owners these institutions had financed find business. About 150 mainly small haulers have joined TCB, with each permitted to have one truck on the register. Bhutanese vehicles are permitted to operate freely into and out of West Bengal and Assam, while Indian haulers may operate into and out of Bhutan. In practice, almost all carriage within Bhutan is done by domestic haulers, due to the lack of freight for haulage back to India for Indian operators.

3.83 BCTS, which maintains its monopoly on passenger services, operates a fleet of 62 buses and 16 trucks. 1/ Scheduled passenger services are

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1/ Trucks are used for passenger and limited freight transport in areas where road conditions prevent the use of buses.

offered to all principal towns. In 1981, BGTS carried about one million passengers and made a small profit after allowing for depreciation. Although it was removed entirely from the government budget in 1982/83, it has, in fact, been operating along commercial lines for several years. BGTS services its own fleet through four workshops, and maintains a vehicle body-building division at the Phuntsholing workshop.

#### COMMUNICATIONS

3.84 Along with roads, the development of modern communications has played a central role in integrating the various regions of the country and in enabling the beginning of development in other sectors. Until the early 1960s, practically all communications messages were carried by hand along the network of trails. But over the last 20 years, as in other areas, great progress has been made, and Bhutan now has a reasonably well-developed internal communications system. Communications links to the outside world remain tenuous, however.

3.85 Much of the early development of communications infrastructure was, like that for roads, undertaken and financed by the BRO. With their assistance, the telephone system was established, and it was not until 1971 that the Ministry of Communications and Tourism was established and Government began making communications provisions of its own. <sup>1/</sup> The Ministry is currently in the process of taking over the telephone system run by the BRO. On the communications side, the Ministry comprises the Departments of Posts and Telegraphs, Wireless, Telephones, and Broadcasting.

3.86 Postal services in Bhutan commenced on a regular basis in 1962; prior to that, mail was distributed through Government agencies. Given its recent origins and the difficult topography, Bhutan has developed a remarkably comprehensive postal system. There are a total of 83 post offices, of which 30 are designated as branch post offices operated by officials of other departments on a part-time basis. Postal headquarters are in Thimphu, although the General Post Office is located in Phuntsholing. Total staff number about 400. Transport of domestic mail is done by BGTS and mail service vehicles between major centers within Bhutan and by Indian Railways between southern border towns. From centers linked by modern transport infrastructure, mail is carried to outstations through a system of postal runners, who carry mail to and from remote areas at least once a week. Due to this innovative approach, most of the population is within reasonable

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<sup>1/</sup> It began as the Ministry of Communications. It has since been given responsibility for Tourism and Civil Aviation; accordingly, two additional departments have been established. The Ministry also oversees the operations of BGTS.

reach of mail services. All international mail is routed through India. There are nine telegraph offices in two areas corresponding to the eastern and western telephone zones. Over the years, Bhutan has placed significant emphasis on the development of stamps for philatelic purposes. Sales of these varied and unique stamps have been a significant hard currency earner.

3.87 The telephone system comprises three sub-systems which are not interconnected: Thimphu-Phuntsholing, Tongsa-Gaylegphug, and Tashigang-Samdrup Jongkhar. Automatic exchanges are in operation in 13 towns, while one manual exchange exists in Punakha. There is a total of 1,900 telephone connections in the country, giving an average telephone density of 0.16 per 100 population, one of the lowest in the world. In Thimphu, there is a 2,000 line capacity step-by-step exchange, which currently has 900 connections. Due to obsolete equipment and lack of maintenance, telephone service is unreliable. The number of unsuccessful call attempts is high and even local calls are not clear; furthermore, lines are frequently cut by landslides or other natural phenomena. International calls are extremely difficult, as they must all be routed through Phuntsholing and connected into the Indian telephone system. With the assistance of the Government of India, a 7 GHz Indo-Bhutan microwave communications system is being installed. This will have a capacity of 300 channels, of which only 60 will be used initially. Completion of the microwave system is scheduled for end-1983. A further microwave link between Thimphu and Tashigang is also under consideration. This would provide the linkage needed for a nationwide integrated telephone system.

3.88 Perhaps the most important internal communications service is the civil wireless network, which complements, but is more comprehensive than, the telephone network. The Wireless Department has 28 stations located throughout the country, which are utilized by both government departments and the public. The Department has a staff of 108, organized into three zones, with headquarters at Thimphu, Phuntsholing and Tashigang. Communications between zones are handled from zonal headquarters. Messages are transmitted using transceivers, either by voice or, when atmospheric conditions are unfavorable, by Morse code. Much of the equipment is of World War II vintage for which spares are no longer available, but replacement is underway. Charges are very low, reflecting its importance as a channel for national integration. Bhutan, although a member of Universal Postal Union since 1969, has not yet joined the International Telecommunications Union.

3.89 The Department of Broadcasting operates a medium-wave radio service, Radio NYAB, which broadcasts nation-wide for two hours three times a week. Broadcasts are in three regional languages, and in English. Items featured include international and domestic news, information on central and local development projects, and entertainment. The broadcasts have a relatively wide audience and play an important role in the Government's efforts to strengthen national awareness and mobilize support for the country's

development efforts. Radio NYAB utilizes an old 400 watt transmitter on loan from the Wireless Department. While broadcasts are often received outside Bhutan, due to the low operating efficiency of the transmitter and the mountainous terrain, reception within Bhutan is patchy. In addition, the Department of Information publishes an official weekly bulletin, Kuensel, and a quarterly magazine, Druk Losel, in three languages.

3.90 At present, none of the communications services has been put on an independent financial footing--revenues continue to accrue to, and all expenses are funded directly from, the budget. As a next step in its efforts to streamline public finances, the Government should consider putting those services on an independent footing. While certain departments, e.g., Posts and Telegraphs, could probably function independently quite easily, certain others--most notably the Wireless Department--would probably continue to need subsidies. However, removing all these departments from the budget would enable the Government to see more clearly the costs and revenues associated with these services and take better informed judgements on whether or to what extent to subsidize them.

Chapter IV: DEVELOPMENT OF HUMAN RESOURCES

4.01 In sharp contrast to its relatively good economic status, the life expectancy of the population was historically very low, and literacy was confined to lamas and the few Government officials. Improving health and education standards were thus relatively high priorities from the outset of Bhutan's development efforts. While some progress has definitely been made, the almost total lack of demographic-related statistics makes that progress difficult to gauge. This chapter begins with a review of the limited demographic data that are available to help put these gains and present social conditions into perspective.

POPULATION

4.02 The population of Bhutan is unknown as there has never been a proper population census, although in 1969, a series of surveys were carried out which suggested a total population of about 930,000. A more scientific census is currently underway. Pending the availability of the census, the Planning Commission derived an official mid-1982 population estimate of 1.16 million (Annex 7-A), which was extrapolated from the 1969 survey and included the estimated 40,000 expatriates working in Bhutan. As in most developing countries, the age structure of the population is skewed towards the younger ages--over 39% of the population is estimated to be below 15 years of age, while only 7% exceed 60. The population is believed to be growing at around 2% per annum.

4.03 On the basis of the official population estimate, the population density of Bhutan is by far the lowest in South Asia (Table 21), although it must be noted that Bhutan has less easily cultivable land than most. And while the overall official estimate is subject to considerable doubt, estimates of the regional distribution of the population are probably fairly reliable (Annex 7-B). Those estimates suggest that the population is more heavily concentrated in the relatively low southern and eastern regions--the southern districts of Samchi, Chirang, Gaylegphug, Pema Gatsel, and Samdrup Jongkhar; and Tashigang in the east account for over 60% of the estimated total population.

Table 21: COMPARATIVE POPULATION DENSITIES  
(mid-1980)

	<u>Area</u> (sq km)	<u>Population</u> (million)	<u>Density</u> (persons/sq km)
Bhutan	46,500	1.1	24
Burma	677,000	34.8	51
Pakistan	804,000	82.2	102
Nepal	141,000	14.6	104
India	3,288,000	673.2	205
Sri Lanka	66,000	14.7	223
Bangladesh	144,000	88.5	615

Sources: Planning Commission and the World Bank, World Development Report, 1982.

4.04 Bhutan has no tradition of major urban centers, and the population is spread out over about 4,500 settlements. Where there is relatively plentiful cultivable land (primarily in the south and in the main river valleys such as Paro, Thimphu, Punakha, and Tashigang), settlements tended to occur in clusters; nevertheless, true urban concentrations never existed, and there are still only two towns in Bhutan with populations exceeding 10,000--Thimphu, the capital; and Phuntsholing, the main gateway town. Consequently, the Government has developed a somewhat different concept of the urban population. Essentially, every district headquarters is considered an urban center if it also contains a significant local population (this accounts for 14 of 18 district headquarters); in addition, urban centers also include four somewhat larger towns, mainly in the south, which are not district headquarters (Annex 7-C). According to this definition, towns of one thousand or fewer inhabitants can be considered urban centers. Even so, the urban population amounts to only 5% of the total, an indication of the overwhelmingly rural nature of the country.

4.05 In one important sense, therefore, population is not an issue in Bhutan, for unlike most other countries in South Asia, it does not have a problem of overpopulation, nor the related problems of urbanization. In fact, the small size of the population and the low productivity of the labor force, together with the increase in development tasks, have forced the Government into unusual means of mobilizing labor.

#### Labor Force and Employment

4.06 There are no statistics on the size and composition of the labor force, although the Planning Commission prepared some rough estimates for

1981/82 (Table 22). <sup>1/</sup> As would be expected, by far the largest proportion (94%) is engaged in agriculture. Trade and public service together account for nearly 5%, and industry, for less than 1%. It is estimated that there are some 46,000 people engaged in wage employment, of whom more than three-fourths are expatriates of all skill levels (Table 23). The need to employ expatriates has stemmed from a number of causes, including the small size of the domestic labor force and its low productivity, an apparent preference to avoid factory-type work, and the shortage of educated and trained manpower. As of end-1980, the supply of trained manpower, for instance, was only about 2,500. The number of university graduates stood at only 230 (including only 35 engineers and doctors), almost all of whom held positions in the Government. Moreover, only half the teachers and medical doctors are nationals. The acute shortage of technicians is overcome by direct hire, usually from India, or through staff on deputation from the Government of India. To meet manual labor needs, expatriates are brought in on a contract basis.

Table 22: ESTIMATED COMPOSITION OF LABOR FORCE, 1981/82

	<u>Number ('000)</u>	<u>Percent of Total</u>
Agriculture	613.0	94.3
Industry	6.0	0.9
Trade	9.0	1.4
Public Service	<u>22.0</u>	<u>3.4</u>
Total	650.0	100.0

Source: Planning Commission.

4.07 Government policy on the employment of expatriates has always been guided by practical considerations, despite the desire to generally restrict immigration. While the objective is to eventually eliminate the need for expatriates, the Government recognizes that at present there is little alternative. It restricts the flow of foreign labor into the country by issuing contracts. Foreign workers are not permitted to enter the country except on short-term contracts, and non-nationals, who comprise almost 40% of

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<sup>1/</sup> According to the Planning Commission, the labor force is defined as the part of population falling within the 15 to 64 age group minus the number of people enrolled in schools. The employment figures for industry, trade, and public administration include non-nationals.

the permanent civil service staff, are encouraged to convert to short-term contracts in return for higher pay. Road checkpoints have been established to monitor population movements.

Table 23: STRUCTURE OF MODERN SECTOR LABOR FORCE  
(As of March 1982)

	<u>Nationals</u>	<u>Non-Nationals</u>	<u>Total</u>	<u>Non-nationals as Percent of Total</u>
Public Sector	7,787	6,532	14,319	45.6
Private Sector	1,931	1,732	3,663	47.3
Casual Labor	<u>1,066</u>	<u>27,263</u>	<u>28,329</u>	<u>96.2</u>
Total	10,784	35,527	46,311	76.7

Source: Planning Commission.

4.08 Before Bhutan began making large-scale use of expatriate unskilled labor in the mid-1960s, the Government had mobilized labor domestically through compulsory labor schemes. Under these schemes in their original form, most of the population contributed labor for public works at the Government's demand for up to two months out of a year, in return for which they were paid a nominal wage. This system was used extensively in the early 1960's when large-scale road construction projects were launched. However, this represented a heavy burden, both on the people and on the agricultural economy, and towards the end of the 1960's when some of the projects were nearing completion and expatriate laborers were present in relatively large numbers, the Government introduced major modifications. It specifically exempted women and all males under age 17 and over age 50; while those eligible would contribute labor to national projects at a rate of only one month a year. The wage, however, remained minimal. Civil servants are exempted, while individuals can elect not to serve provided they can find someone prepared to fulfill their obligation and are willing to pay to the Government the cost of hiring that person. <sup>1/</sup> In addition, the population can be called upon to contribute free labor to dzong and monastery repairs, and is also expected to provide voluntary labor for local development projects such as schools and feeder road construction. It is this labor which the Government is mobilizing to help implement much of the Fifth Plan.

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<sup>1/</sup> Returning university graduates from abroad are required to do six months of development-related national service, usually in rural areas, before assuming regular positions in Government.

4.09 Bhutan will continue to rely heavily on trained expatriate manpower in most spheres of economic activity, although to help meet growing needs for technical and administrative manpower, education and training have long been and remain priorities in the development effort. But as in many other areas, Bhutan has taken a somewhat different, relatively careful, approach to the sector. National trained manpower needs have been projected through 1991, and it is these projections which are governing current higher education and training policies.

#### EDUCATION

4.10 Until the early 1960s, practically no formal schooling existed in Bhutan except for the teaching of religion and classical Dzongkha in monastic schools in monasteries and dzongs. The number of Bhutanese who had studied outside the country was extremely limited, with most of the few who had, having been sent as children to schools in India. Over the last two decades, the country has made considerable progress in education--a formal education and technical training system has been established, and students have been sent abroad in significant numbers for specialized training. Nevertheless, Bhutan still lags far behind other low income countries in terms of key education indicators such as enrollment ratios and adult literacy (Table 24).

Table 24: EDUCATION INDICATORS - SELECTED COUNTRIES a/

<u>Countries</u>	<u>Enrollment as Percentage of Age Group</u>		<u>Adult Literacy</u>
	<u>Primary</u>	<u>Secondary</u>	<u>Rate</u>
Bhutan	21.0	2.5	10.0
Nepal	88.0	19.0	19.0
Bangladesh	65.0	25.0	26.0
India	78.0	27.0	36.0
Burma	84.0	20.0	70.0
Average for 33 Low Income Countries	94.0	49.0	50.0

a/ Selected years, 1977-80.

Sources: Government of Bhutan and the World Bank, World Development Report, 1982.

#### Education Delivery System

4.11 The formal education cycle consists of two years of pre-school education (lower and upper kindergarten), five years of primary education (Class I through Class V), five years of secondary education (Class VI

through Class X), and two years of the "Plus Two Program" at the Junior College. At present there are 132 primary schools (offering elementary education from lower kindergarten through Class V), 24 junior high schools (covering lower kindergarten through Class VIII), and six central schools, (offering integrated education from lower kindergarten through Class X). 1/ While primary schools are day schools serving the local communities, both central schools and junior high schools have hostels and function as boarding schools. The formal education system culminates in the Junior College; there is no university in Bhutan. The medium of instruction is English although the teaching of Dzongkha, the official language, is mandatory. Vocational training institutes include two teacher training schools, the Kharbandi Technical School, and the Royal Bhutan Polytechnic. There are no private schools in Bhutan; formal education and vocational training are administered entirely by the Government. This makes the education system highly centralized--the Department of Education controls the curriculum; the recruitment, training, and assignment of teachers; and the assignment of transfer students among central and junior high schools. It also administers all qualifying examinations.

4.12 The Government provides free textbooks and supplies, as well as free food and board at every level of education and vocational training. Under the recent decentralization of administration, the financial administration for primary schools has been shifted to the district administrations which pay for teachers' salaries, teaching materials, and other supplies out of their annual budgets. Local communities also provide voluntary labor for the construction and maintenance of primary schools. On the other hand, the central government pays to establish and operate all central schools, junior high schools, and other specialized institutions, as well as for the tuition and stipends of students and civil servants doing school education and degree programs abroad. In 1980/81, total public expenditures on education amounted to roughly 4% of GDP; recurrent expenditures in education accounted for 15% of the total public recurrent expenditures. As Table 25 indicates, Bhutan allocates a relatively large share of financial resources to education compared to neighboring countries. 2/ Primary education, which accounts for 93% of school enrollment, claims about 50% of the education recurrent expenditure. (Of total recurrent outlays on primary education, about 70% go

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1/ In addition, there are fourteen monastic schools, five schools in the south teaching Sanskrit, two traditional arts schools, and a typing school currently being upgraded to teach other business-related skills as well.

2/ It should be noted, however, that it can be somewhat misleading to compare public outlays on education across countries because in some cases these may cover only part of the total expenditures on education. In Bhutan, where there are no private schools, public outlays constitute total national outlays.

to teacher salaries and related allowances.) Another major category in the recurrent budget is the outlays for degree scholarships and associated expenditures on students studying abroad. These amount to about 10% of recurrent expenditures on education.

Table 25: PUBLIC EXPENDITURES ON EDUCATION IN SELECTED SOUTH ASIAN COUNTRIES

<u>Countries</u>	<u>Recurrent Expenditure on Education as Percentage of Total Recurrent Budget</u>	<u>Public Outlays on Education as Percentage of GDP</u>
Bhutan <u>a/</u>	15.3	3.7
India <u>a/</u>	14.3	3.0
Burma <u>a/</u>	11.2	1.7
Bangladesh <u>b/</u>	12.9	1.5
Nepal <u>b/</u>	7.8	1.4

a/ 1980/81.

b/ 1979/80.

Source: The World Bank.

#### The Role of Primary Education

4.13 Recognizing the role of basic education (and literacy) in overcoming poverty--through increasing productivity, improving health and nutrition, and reducing family size--the Government is committed to free and universal (but not compulsory) primary education. Nevertheless, enrollment in primary education (lower kindergarten through Class V) amounts to only about 37,400 (Annex 8-A), comprising 25% of the estimated age group for boys and 17% for girls. 1/ In most areas of Bhutan, settlements are scattered; the consequent need to travel significant distances in a harsh environment and with poor transportation makes school attendance difficult. And although primary education is free, children are frequently needed at home to help with household and agricultural work during the peak seasons, which may conflict with a fixed school schedule. 2/ For these same reasons, the drop-out rate and repeater ratios are reported to be high, although relevant statistics are not available.

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1/ It should be noted that these estimates are based on the official population estimate (Annex 7-A), which is subject to uncertainty.

2/ The school year is March to November.

4.14 Much thought has clearly gone into developing an education system which is consistent with the Government's overall development objectives. The emphasis on universal primary education is sound. People need basic formal schooling to acquire a broad base of knowledge, attitudes, values, and skills on which they can subsequently build, even if they do not receive further formal instruction. There remain, however, two fundamental questions. First, is the five year primary education cycle adequate for providing the basic literacy and education needed in adult life? Second, what Government initiatives are needed to reach the vast number of children (up to 80% of the age group) who are not receiving basic education?

4.15 Considering Bhutan's mainly agrarian economy, the current five year primary education cycle is probably adequate for imparting basic literacy and numeracy. The curriculum attempts to balance the training of cognitive skills (through subjects such as languages, mathematics, and social studies) with instruction in practical subjects such as farming and animal husbandry. The Government also plans to include instruction on health, hygiene, and nutrition in the primary school curriculum, once the textbooks currently under preparation become available. Nevertheless, children are normally no more than eleven or twelve years of age when they leave Class V, and are hence liable to forget what they have learned. To help utilize and reinforce their reading habits, local communities should be encouraged to organize periodic refresher courses and to distribute suitable reading materials. The Government is also considering raising the minimum age for admitting children to primary education.

4.16 Perhaps the more crucial question at this stage is how to make primary education accessible to a much wider segment of the population without putting excessive burden on the Government budget. From a strictly financial point of view, it would appear unwise to attempt to attain universal primary education too quickly. If, for instance, primary school enrollment were to increase from the current 21% to 50% of the age group over the next five years, the financial implications of this increased enrollment in primary education alone would mean that GDP would have to grow by as much as 8% per annum in real terms over the next five years to keep the share of total outlays on education from rising above the already relatively high 3.7% of GDP of 1980/81. As discussed in para 5.22, this rate of growth appears unlikely.

4.17 The problem of growing demands for education on budgetary resources cannot easily be resolved. Two possible courses of action are open--finding additional sources of financing, and reducing per-student costs by improving the efficiency of the education system. Local communities are already effectively mobilized to contribute free labor for the construction and maintenance of primary schools. Based on the affordability criteria, the Government is now considering asking certain communities to contribute to the

cost of operating their primary schools by providing food and paying for the children's textbooks and supplies--items entirely paid for by the Government at present. Moreover, a system of fees balanced by scholarships could be introduced selectively at the post-primary levels. Any decrease in unit costs of secondary and higher education can release significant additional funds for providing primary education, while the potential economic gains to individuals with post-primary level education are large and could justify some fees. Possible approaches to increasing efficiency include using school space more efficiently through greater use of afternoon sessions and increasing the ratio of students to teaching staff. Because teacher salaries constitute as much as 70% of the recurrent expenditure in primary education, student-teacher ratios need to be maintained at as near to the acceptable norms as possible. A recent World Bank study challenged the conventional wisdom that a decrease in class size implies improvement in educational quality. <sup>1/</sup> In fact, studies have shown that variation in the size of class within a range of 20 to 40 makes little or no difference in the average achievement level of students. Considering that the average ratio in Bhutan is a relatively favorable 31, this suggests that some savings could be achieved here with no significant loss in education quality.

#### The Role of Secondary Education

4.18 Secondary education in Bhutan is offered in junior high schools and central schools. Enrollment is restricted, and is guided by the projected manpower requirements of the country in order to avoid creating a pool of educated unemployed. At the end of the fifth, eighth, and tenth years of schooling, students take examinations that determine eligibility for (though not necessarily confer entrance into) subsequent levels of the education system. At the end of the fifth and eighth years the Government also transfers students between schools in different regions of the country to promote national integration.

4.19 The ceilings for the numbers of students that can be admitted to each level are set by the Government as shown in Annex 8-B. They are based on manpower projections which indicate that Bhutan's incremental higher level manpower needs will number 600 during the Fifth Plan period and 170 per year through the remainder of the decade (Annex 8-C). On the basis of the Class V examination, the first 1,500 are eligible to enter secondary schools. The remainder may enroll in technical schools, join the army, return to their villages, or apply to the various on-the-job training schemes conducted by Government departments. On the basis of the examinations conducted at the end of Class VIII, the best 600 students may be admitted to Class IX. After the Class X examination, about 120 students are selected for admission to the

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<sup>1/</sup> Education Sector Policy Paper. The World Bank, April 1980.

Junior College. As of April 1982, the secondary school enrollment was only 2.5% of the age group, and the numbers of students qualified to enter Classes VI, IX and XI had not reached the approved ceilings. Up to about 100 of those who successfully complete the "Plus Two Program" in the Junior College and pass the qualifying exams can be sent abroad (primarily to colleges and universities in India) for degree programs. As of end-1982, there were about 180 such students in Indian institutions. In addition there were some 110 civil servants (including about 50 in India) receiving specialized training outside Bhutan.

4.20 Although it is unclear whether the secondary enrollment ceilings are too restrictive for establishing an adequate base for manpower training, at present this issue is immaterial as the number of qualified candidates at each level is below the approved ceilings. In this light, it appears appropriate for the Government to concentrate its limited resources on primary education, while trying to increase secondary and higher-level enrollments to the ceilings. Over the longer term, it will, however, be necessary for the Government to keep the ceilings under periodic review, to ensure that projected future higher-level manpower needs can be met, not only for the public sector but also for the economy as a whole.

4.21 As many Bhutanese students have traditionally gone on to degree programs in Indian colleges and universities following the "Plus Two Program", the education system in Bhutan is closely affiliated with that of India. The coverage of the Indian secondary school examinations has effectively determined the curricula and the choice of textbooks for secondary education in Bhutan. In order to acquire greater flexibility for orienting the education system to suit Bhutanese conditions and needs, the Government is planning to establish a National Board of Secondary Education and Training during the Fifth Plan period. The Board will be responsible for developing and reviewing the school curriculum, establishing its own school certificates, and holding its own qualifying examinations at the end of Classes X and XII. The Government of India has promised full cooperation by directing the Equivalence Committee of the Indian Universities Association to recognize the certificates of the Board on par with those of the Indian system for purposes of admitting Bhutanese students to colleges, universities, and other training institutes in India.

#### Technical Training

4.22 Technical training is currently carried out by the Royal Bhutan Polytechnic at Deothang and the Kharbandi Technical School near Phuntsholing. The Polytechnic runs a five-year program for the training of diploma-level technicians in civil and electrical engineering. The entrance requirements for the first two years of the program, which constitutes a pre-diploma course, is a Class VIII pass. The entry requirement for the next three years, a diploma course, is a Class X pass. About 60 students are admitted each year. The Technical School runs a five-year certificate program for the training of skilled craftsmen in the electrical, general mechanic, and auto

mechanic trades. The entry qualification for candidates is a Class V pass, and the admission is about 80 students per year. In addition, training courses lasting six months to two years are conducted under the National In-Plant Training System to develop semi-skilled workers in various trades as required by government departments and public enterprises. Entrance requirements vary according to the trade. The minimum entry qualification is envisaged to be a Class V pass, although at present less qualified candidates are admitted to help meet immediate manpower needs.

### Teacher Training

4.23 There are presently some 1,390 teachers in the formal education system. <sup>1/</sup> However, this figure conceals serious inadequacies in teacher training. Only about 35% of the teaching staff are fully qualified, and as many as 30% have had no training at all. About 50% of the teachers are non-nationals on fixed term contracts. There are two teacher training institutions in the country. The Teacher Training Center at Paro, established in 1975, has a two-year course for pre-primary teachers. The annual intake of students at this center is about 25 per year, and the minimum qualification for admission is a Class VII pass. The Training Institute at Samchi was established in 1968 for the training of primary school teachers. Annual admission is 40-50 pupils. The minimum qualification for admission to the Institute is a Class VIII pass (this is now being raised to a Class X pass) and the duration of the course is also two years. Currently, all secondary school teachers are trained outside the country, but during the Fifth Plan period, the Government proposes to expand the institute at Samchi into a primary and secondary school teacher training college--the National Institute of Education. In addition to training new primary and secondary school teachers, the Institute will also conduct a regular program of in-service training for existing teachers.

### HEALTH AND NUTRITION

4.24 In terms of health indicators, Bhutan ranks low compared with other countries in South Asia or with the averages for the 33 lowest income countries (Table 26). Life spans are estimated to be short, crude death and infant mortality rates are high, and communicable diseases are conspicuous features of daily life. Gastro-intestinal infectious diseases are apparently the most common causes of death, particularly among young children, followed by respiratory ailments, especially influenza and pneumonia. Morbidity statistics are unavailable, but the incidence of parasite infestation, skin diseases, tuberculosis, malaria, and goiter appears to be high.

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<sup>1/</sup> Excluding about 30 teachers in monastic schools.

### Delivery of Health Services

4.25 Modern health services have been introduced gradually into Bhutan over the last two decades, but their coverage has been limited by shortages of financial resources and medical personnel, and difficult access to facilities due to the rugged terrain and lack of roads. Total public expenditure on health amounted to 1.5% of GDP in 1980/81; this translates to about \$1.70 per person a year. 1/ The Government bears the full cost of providing public health care. Nevertheless, civil servants contribute 1% of their basic salary toward medical coverage, and the rural population provides free labor for construction and maintenance of local health facilities.

4.26 The network of health facilities comprises a referral system of 19 hospitals, 37 dispensaries, and 50 basic health units (BHU). 2/ There are about 600 hospital beds; one per 2,000 population. Out of the 19 hospitals, only three are referral hospitals (located in Thimphu, Gaylegphug, and Tashigang); Thimphu has the only general hospital in the country. Staffed by 15 doctors and 21 nurses, the Thimphu Hospital is equipped to provide general surgery, microbiology, midwifery and gynecology, orthopedics, pathology, optometry, dentistry, x-ray service, and limited tuberculosis treatment. Most of the in-patients occupying the hospital's 170 beds are fairly serious cases referred by district hospitals and the BHUs. It has three ambulances to transport referral patients. District hospitals are much smaller, having only 10 to 20 beds. The BHUs constitute the core of Bhutan's public health system. Headed by health assistants, they provide simple curative services, control of communicable diseases, maternal and child care services, family planning services, health education, referral services, as well as keep vital records. Dispensaries, each staffed by a compounder, provide the only rudimentary curative services. In addition to the normal health facilities, a number of special programs have been developed. Notable among these are malaria control in southern Bhutan, tuberculosis control through BCG vaccination, goiter prevention by the distribution of iodized salt, and the treatment and control of leprosy. With assistance from international agencies, a number of other programs have also been started, including nutritional support to school children, mothers and infants, and general immunization. 3/

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1/ The World Development Report, 1980, estimates government health budgets in low-income Africa and Asia were usually less than \$5 per person per year.

2/ In addition, there is one indigenous medicine hospital and four indigenous medicine dispensaries.

3/ The World Food Programme was introduced in Bhutan in 1977. Its food distribution programs include school lunch programs; supplementary feeding programs for pregnant women, infants, and nursing mothers; and food support for rural works programs.

4.27 Although there is no population problem in Bhutan and population growth is only about 2%, the current high crude birth and death rates suggest this could accelerate once expanded health and water supply programs begin to take effect. This would pose additional demands on resources for education and other public services. With a view to the possible future need to contain population growth as well as the immediate need to help improve overall mother and child health care, a small so-called family welfare program has been introduced to provide family planning services. So far, only three districts are covered by this program.

#### Shortage of Medical Personnel

4.28 The shortage of manpower in the health field is acute. Bhutan has only 64 physicians, including 30 nationals. The ratio of physicians to the official population is presently estimated at a high 1:18,100. The public health system, therefore, depends heavily upon paramedical personnel. There are 129 nurses and 17 auxiliary nurse midwives (one per 7,900 population), 63 health assistants, 55 basic health workers, and 70 compounders. The Department of Health Services established a Health School within the Thimphu General Hospital in 1976 for the training of these paramedical personnel. The Health School has the capacity to train 13 students per year for each category of paramedical personnel, however, some spaces go vacant due to a shortage of qualified candidates. The course for health assistants lasts two years and requires at least a Class VIII qualification. The course for auxiliary nurse midwives lasts two years and requires a Class V qualification; that for basic health workers lasts one year and also requires a Class V qualification.

#### Primary Health Program

4.29 To extend health service coverage to more remote areas, the Government has been concentrating its resources on increasing the number of BHUs. At present, the 50 BHUs each cover an average of 4,000 to 6,000 people; however, these people tend to be spread over relatively large areas. The Government's ability to increase the number of BHUs is constrained by the shortage of paramedical staff. In areas not served by BHUs, attempts are being made to involve the local communities in an outreach program by training community health workers from among the villagers. They are equipped with simple headache and diarrhea pills and trained to carry out simple curative activities and basic health and hygiene education under the supervision of the BHUs. This program began four years ago and so far covers five districts.

Table 26: HEALTH INDICATORS - SELECTED COUNTRIES a/

	<u>Bhutan</u>	<u>Bangladesh</u>	<u>India</u>	<u>Nepal</u>	<u>Average for Low Income Countries</u>
<u>Health Indicators</u>					
Crude Birth Rate per 1,000 Population	43	45	36	42	31
Crude Death Rate per 1,000 Population	21	18	14	20	12
Life Expectancy at Birth	43	46	52	44	57
Infant Mortality Rate per 1,000	147	136	123	150	94
<u>Factors Influencing Health</u>					
Population per Physician	18,100	12,690	3,630	35,900	5,810
Population per Nursing Personnel	7,900	40,490	5,700	13,510	4,840
Percentage of Population with Access to Safe Water	8	53	33	9	31
Adult Literacy Rate (%)	10	26	36	19	50

a/ Selected years, 1977-80.

Sources: Government of Bhutan and the World Bank, World Development Report, 1982.

4.30 The Government's strong emphasis on paramedics and community health workers is sound from the standpoint of attempting wider coverage at relatively low cost. In Bhutan's context, it may also be desirable to make a systematic use of, and provide some training for, traditional health practitioners. Many in Bhutan still approach traditional healers and herbal medicare practices first, in the belief that illnesses arise out of supernatural rather than physical pathological causes. Moreover, in rural areas people typically live in scattered, often small, settlements and are therefore unwilling to seek out district hospitals or BHUs except in extraordinary emergencies or until it is too late. The traditional practitioners provide near universal coverage of the large segment of population that cannot realistically be reached by effective public health programs for some time to come.

### Sanitation and Hygiene

4.31 The incidence of common diseases in Bhutan, including most causes of diarrhea and many respiratory infections, can be reduced only through improved sanitation and nutrition, and changes in individual health habits. Environmental health conditions in Bhutan are poor. Only 8% of the population has regular access to safe water, which makes hygiene difficult and facilitates the transmission of water-borne diseases.

4.32 Urban water supply schemes in Bhutan were started in the early 1960s and are generally of the gravitational type with mountain streams as sources. At present, some piped water supply is available in all but four urban centers, covering about half of the urban population. <sup>1/</sup> In some towns, only a part of the population is served, and in a number of others, the supply is inadequate. Full treatment and chlorination are provided only in Thimphu. Other towns have only partial treatment without chlorination or have no treatment at all. Most towns provide house connections as well as public standposts, while under rural water supply schemes, delivery is via public standposts. Towns and villages without piped water supply obtain their drinking water from nearby springs and streams. In western Bhutan, pollution of sources is reported as a major problem, while in the east, distances from the sources can also pose difficulties. Rural water supply schemes began in the mid-1970s with UNICEF assistance, and by the end of the Fourth Plan 246 schemes had been completed. The Government presently does not impose water charges in rural or urban areas, although villagers provide voluntary labor to help maintain the systems.

4.33 In towns, most houses and buildings built by the Government have individual septic tanks, the effluents from which often find their way through open drains into streams. Private homes are provided with either septic tanks or pit latrines. Public latrines also exist. Other household waste waters flow through open drains to natural water courses. There is no public sewerage disposal system in any town in Bhutan. Very few sanitary latrines exist in rural areas. A solid waste collection and disposal service managed by the municipal councils has been initiated in Thimphu and other main towns, but rubbish is collected from the streets only and is disposed of by open-dumping in low-lying areas. No composting or sanitary land-fire is practiced.

4.34 Improved water supplies and waste disposal are important in the long run in reducing disease. But once built, water supply systems must be maintained, and operations and maintenance of water supply schemes is poor

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<sup>1/</sup> The urban centers without piped water supply are Chimakothi, Wangdiphodrang, Bumthang, and Shemgang.

in Bhutan due mainly to the shortage of skilled manpower. Considerable leakage is said to occur in the distribution system. Moreover, improvements in water supply and sanitation must be accompanied by better hygiene practices if they are to be fully effective. In other words, whether clean water can make an important contribution to better health depends on the degree of education and understanding of its users. In this respect, education, especially of mothers, is important. Studies in developing countries have shown that infant and child mortality are consistently lower, the better educated the mothers.

### Nutrition

4.35 Except possibly in the south where population densities are highest and there is some landlessness, the limited malnutrition in Bhutan does not seem to result from inadequate food intake or poor nutritional practices. Rather, it appears to stem from the high incidence of gastro-intestinal and parasitic diseases which reduce the efficiency with which the body utilizes available food supplies. A sample dietary survey of households carried out in Punakha district (which is generally believed to be among the more prosperous) indicated that average per capita cereal consumption was about 200 kg per annum. Average daily calorie intake was about 2,500, and rice was the major source of both calories and protein in the diet. Calorie inadequacy was observed in only 9% of the households and protein inadequacy in only 13%. Those households were mostly located in higher altitude areas unsuited to rice production. However, country-wide there are special nutritional problems related to specific micro-nutrient deficiencies. Goiter, a disorder caused by the deficiency of iodine resulting in retardation of physical and mental growth, is relatively common, with extreme cases resulting in cretinism and deaf-mutism. High incidence of goiter in females of child-bearing age is probably one of the key factors behind the high infant mortality rate in Bhutan, as it affects the development of the fetus in pregnant women. The Government is attempting to remedy iodine deficiency by providing iodine oil injections and distributing iodized salt. Iron deficiency (anemia) is another common disorder, which results in listlessness and susceptibility to disease. Anemia among pregnant women can lead to premature birth and a much lower chance of survival for the newborn child; UNICEF has a program under which iron tablets are distributed to people suffering from anemia.

## Chapter V: DEVELOPMENT PLANNING

### BEGINNINGS OF DEVELOPMENT PLANNING

5.01 Development planning efforts in Bhutan trace back to 1959 when Bhutan began receiving Indian development assistance. By 1961, the first five year plan had been drawn up. To implement the plan and administer the Indian aid that fully financed it, a self-contained Development Secretariat was established which included its own financial staff. Directorates of agriculture, animal husbandry, health, education, hydro-power, and publicity were created, while the existing directorate of forestry and the BES (the predecessor to the PWD) were strengthened. It was this separation of development from other activities that led to the two-budget system that existed through 1980/81 and the creation of the large Ministry of Development.

5.02 It was inevitable during the early days of development planning that Bhutan would find it necessary to rely heavily on Indian technical assistance. Thus, initially most of the staff in the Development Secretariat and in the individual directorates were either on deputation from the Government of India or were under direct contract to the Government of Bhutan. Certain Government of India organizations were also directly involved in Bhutan. These included the BRO (para 3.70), which undertook much of Bhutan's early transport and communications infrastructure development; the Geological Survey of India, which undertook initial mineral exploration; and the Survey of India which undertook land mapping. The operations of these organizations were usually financed from their own budgets, and these resource flows, especially in roads and communications development, represented a major addition to the regular development assistance flows.

5.03 The Planning Commission was established in 1971. Although it is headed by the King, chief operational responsibilities rest with the Deputy Minister for Planning, who has ministerial rank in the Cabinet. Until 1981/82, the responsibility for allocating the annual Government of India grants and for negotiating foreign aid lay with the Planning Commission. Although these financial responsibilities were officially transferred to the Ministry of Finance beginning in 1981/82, the Planning Commission still has the strongest say in deciding how resources will be allocated. The Planning Commission at present has three divisions: a planning division, a resources division, and the CSO. The planning division is responsible for establishing development priorities, translating them into development plans, and then overseeing plan implementation. The resources division coordinates with the Ministries of Finance and Foreign Affairs on resource mobilization, while the CSO is responsible for developing the data base and undertaking special surveys. However, because of shortages of qualified staff, there is a considerable overlap between these divisions.

## THE FIRST FOUR PLANS, 1961/62-1980/81

5.04 Although Bhutan completed four development plans during the two decades 1961-81, it should be recalled that in the 1960s, modern public administration and development thinking in Bhutan were both at early stages. As a result, implementation of the plans was uneven and often constrained by shortages of skilled and unskilled manpower and of materials, while the development priorities themselves were subject to continual review and change. Consequently, the overall volume as well as the composition of actual expenditures tended to differ considerably from the original plans. The usefulness of reviewing proposed and actual expenditures under those plans is thus limited. The plans are perhaps most useful as an ex post means of reviewing changes in development strategy over time (Annex 9).

5.05 Under the First Plan (1961/62-1965/66), development expenditures (both capital and recurrent) amounted to Nu 107.2 million. The highest priority was ending Bhutan's isolation, and accordingly, 66% of the outlays went towards transport infrastructure, the main project being the road from Phuntsholing to Paro and Thimphu. Although a second major road was started in the east from Samdrup Jongkhar to Tashigang, this was completed by the BRO. Towards the end of the First Plan, work also began on the lateral road from Thimphu to Tashigang. Importance was also accorded to education (9% of outlays), forestry (3%), and health (3%).

5.06 The Second Plan (1966/67-1970/71) showed both a considerable increase in total expenditures (89%), as well as a significant diversification in the composition of expenditures. In part, this diversification resulted from the significant decline in the share of transport infrastructure to 41% of outlays. But this decline reflected mainly the fact that the main road projects, including the third north-south link from Gaylegphug to Tongsa in central Bhutan, were being undertaken by the BRO outside the Plan, rather than any decline in overall priority attached to roads development. Social services--education (18%) and health (8%)--remained a high priority, but the increase in allocations to agriculture from 3% in the First Plan to 14% was a significant change in strategy. Power, including the first hydro-power plant, accounted for 5% of outlays.

5.07 The Third Plan (1971/72-1975/76) was the first implemented under the Planning Commission, although much of the preparation preceded it. Overall expenditures increased by 135% while the share of transport infrastructure development declined further to 20%, as again most investment in roads took place outside the purview of the Plan. Social services again increased in priority, accounting for 27% of total outlays (education - 19%, health - 8%), while agriculture rose to 17% of outlays. The Plan also included provisions for the development of tourism infrastructure. The Plan did not include outlays for the Chukha project, which was being undertaken and financed separately. Had it been included in the Plan, it would have accounted for

10% of total development expenditure. For the first time, sources other than Government of India grants made a significant contribution to plan financing. Assistance from the UN system, which Bhutan had joined in 1971, financed about 3% of Plan expenditures; internally generated resources, about 7%.

5.08 The Fourth Plan (1976/77-1980/81) is notable both for the continued rapid growth in expenditures--total outlays increased by 133% over the Third Plan--as well as the relatively even distribution of expenditures. These included several large-scale investment schemes such as the Penden cement plant and a relatively large surface irrigation development scheme in the Gaylegphug area. Agriculture and related activities were, for the first time, the highest priority, accounting for 29% of total outlays. Industries and mines accounted for almost 16% of expenditures, but about four-fifths of those were accounted for by the Penden cement plant. Forestry also increased significantly over the Third Plan, from 6% to 10%. The increases in these sectors were primarily permitted by the sharp decline in the shares of transportation-related investment (from 20% to 12% of outlays) and in education and health (from 27% to 16% of outlays), but in all three sectors, actual outlays rose by about one half. Although Government of India grants were still the principal source of finance, accounting for 77% of the total, the share of overseas finance, again mainly from the UN system, increased to a significant 18% of total financing. The internal contribution failed, however, to keep pace with the growth in overall expenditures and declined from 7% to 5% of the total financing. Fourth Plan expenditures again excluded those on the Chukha project, which amounted to Nu 573 million. Had these been included, they would have changed the entire complexion of the Plan. Total expenditures would have been 52% higher, amounting to Nu 1,679 million, while the share of power development would have risen from 5% to 37% of the total. Likewise, the share of Government of India finance would have amounted to 85%, much closer to prior plans.

5.09 Bhutan's accomplishments under the first four plans must be considered impressive, despite the somewhat ad hoc nature of the plans themselves. The country ended its physical inaccessibility and linked the main regions of the country through a well-conceived basic road network constructed under difficult physical conditions. Basic social infrastructure was established in many parts of the country, and due to the heavy emphasis on education, literacy rose from virtually zero to about 10%. But perhaps the most impressive gains were those made in the area of development administration. Barely 20 years ago, Bhutan did not even have sufficient trained manpower to head the government departments. In the intervening period, as a result of the strong emphasis on education and on higher-level training abroad, Bhutan built up a relatively small but well-motivated and trained cadre of administrators. And gradually, Bhutanese nationals replaced the officers on deputation from the Government of India so that today, almost every policy-related position in the Government is staffed by a national. While shortages of skilled personnel remain, the Government, through

concerted efforts to keep the administration lean and by recruiting selectively from outside Bhutan, has been able to develop a fairly efficient administration more or less in line with needs.

5.10 As development administration and planning capacity increased, so did the sophistication of the Plans. From beginnings that focused more or less exclusively on the development of major infrastructure, the Plans increasingly began focusing on development activities designed to affect more directly areas of livelihood of the population. But as the focus of development efforts became more production-oriented, the King became increasingly concerned that development priorities were being set at the top and hence were not necessarily consistent with popular desires. And if development programs were in tune with those desires, it was felt that it would be possible to involve the people more directly in implementation, thereby achieving a higher level of investment and a greater overall development impact. These concerns were reflected in the Fifth Plan, which was longer in preparation than any of its predecessors and which contains fundamental changes in development strategy.

THE FIFTH PLAN, 1981/82-1986/87

#### The Development Strategy

5.11 The declared underlying objective of the Fifth Plan is to increase Bhutan's "economic self-reliance". Historically, Bhutan had been able to meet almost all of its needs from within, but over time this complete independence was perceived as being compromised by development. The concern was succinctly expressed by King Jigme Singye Wangchuck in his coronation address of June 2, 1974. At that time he stated that:

"From year to year, Bhutan is receiving increasing financial and technical assistance from our good friend India. Although the process of socio-economic development was initiated in our country only a few years ago, we have achieved tremendous progress within a short span of time. In spite of this progress, our present internal revenue cannot even meet a fraction of our Government expenditure. Therefore, the most important task before us at present is to achieve economic self-reliance to ensure the continued progress of our country in the future. Bhutan has a small population, abundant land, and rich natural resources, and sound planning on our part will enable us to realize our aim of economic self-reliance in the near future."

He also expressed the concern that the people themselves were not directly enough involved in the development process, but were instead relying too heavily upon Government initiative.

5.12 An attempt was made under the Fourth Plan to involve more directly the populace in development by establishing District Planning Committees (Dzongkhag Yargay Tschogchungs or DYT) in each district to enable the representatives of the people to meet with public officials and express their own development priorities. <sup>1/</sup> At the same time, the people indicated their intention to provide voluntary labor to help implement the proposals. In practice, however, these attempts at greater local involvement proved only partially successful. On the one hand, there were insufficient staff in the district administrations to supervise the projects, while on the other, there were conflicting lines of authority for technical staff. Their primary responsibility was towards the central departments in Thimphu, rather than towards the district administrations. At the same time, the internal financial contribution declined during the Fourth Plan period. The need to address these two issues became a central focus of Fifth Plan preparations. In the end, it resulted in two major changes in the development strategy--a major decentralization of the development effort, and the decision to undertake a number of large resource-based, export-oriented industrial projects.

5.13 The preparations of the Fifth Plan far exceeded those of its predecessors, and have much to do with its covering six years, instead of the usual five. In the course of its preparation, the King toured all 18 districts to discuss Plan strategy with the people, and to obtain their commitment to it. He especially stressed the importance of local participation, first in the formulation and then in the implementation of the Plan. To help stretch scarce financial resources further, agreement was reached that projects would only be included in the Plan if the people agreed to provide voluntary labor to implement the projects and later maintain them. On his part, the King committed the Government to providing the necessary technical assistance and materials. Based on this understanding, expressed district priorities, and projected available financial resources, individual district development plans were drawn up by the Planning Commission. These plans were discussed in depth with the DYT of the individual districts. In many cases, significant changes were made to the draft plans, but in each case, districts had to stay within their allotted financial ceilings and agree to provide all the necessary manual labor on a voluntary basis. Each plan was discussed individually and approved by the National Assembly, a process which was not completed until early 1982. The plans were then integrated to form the district-level component of the Fifth Plan. To this district-level component were added those projects which will come under central implementation. These include major projects such as large-scale public industries, national road and power projects, and projects in sectors in which strong central control is believed essential, for example, forest

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<sup>1/</sup> The DYT consists of the district administration officials, National Assembly representatives and village headmen, as well as other concerned individuals from the district.

extraction and secondary and higher level education. Together, the central and district level plans comprise the Fifth Plan which will be presented as a whole to the National Assembly for approval in 1983.

5.14 To help implement the district plans, almost 2,000 staff were transferred from the central government to the district administrations to bring the total number of district administration staff to about 2,300. However, most technical staff were already in the districts, so for them it merely represented a change in the line of authority; only about 300 staff, mainly administrative staff, were physically required to transfer. At the same time, the district administrations themselves were reorganized. In particular, the development and civil administration functions were separated, with all development activities coming under the deputy district officer, and civil administration, under the assistant district officer (Chart 2). In keeping with the overall goal of decentralization, major changes were made in the system of releasing revenues to give the district administrations increased flexibility in the use of funds, while still maintaining strong central financial management (para 2.32). No moves have as yet been made to give the district administrations any revenue-raising powers of their own.

5.15 There are clear advantages as well as drawbacks to this decentralization. To begin with, the objective of wishing to reflect to the extent possible popular desires in the Plan is understandable. Moreover, the mobilization of voluntary labor can greatly reduce the costs of development projects (for instance, a primary school building constructed using voluntary labor costs only about half as much as one in which labor is paid), thereby permitting a greatly increased overall development effort for given financial resources. Popular participation in the choice of projects probably also results in a relatively efficient use of development resources. For instance, the willingness of a community to provide labor for a feeder road is probably a strong indication that the area served has marketable surpluses in agricultural production and that the economic returns to road construction are high.

5.16 However, these gains could be offset by the significant drawbacks inherent to decentralization. There is, to begin with, a need to balance the increased discretion given to the districts over the use of funds with close administrative control to ensure that funds are being used efficiently. The Government is well aware of this and has introduced measures to this end. More difficult to address, however, are the additional staffing demands imposed by decentralization. Bhutan is already desperately short of trained technical and administrative manpower; having to establish stronger technical and administrative capacity in all 18 districts only adds to that burden. Most districts do not, for instance, have resident engineers, and must make do with engineering assistants at best. Furthermore, most districts do not have sufficient or adequately trained financial staff to prepare the detailed monthly accounts required by the Ministry of Finance to ensure decentralization is resulting in the proper use of funds. Equally important

is the need to maintain close technical control over projects to ensure that quality remains at a high level. If the high quality of development projects cannot be assured, public confidence in decentralization could be undermined. Furthermore, the dangers of isolating technical staff from their technical supervision must be recognized, and strong technical leadership and guidance from the center must be established. The Government proposes to overcome this problem partly through more frequent refresher courses and seminars. One such course was held for district agricultural officers and extension officers in July 1982. Care must also be taken to ensure that in areas where benefits tend to be more important in a national rather than a regional context (e.g., agricultural research and its role in helping ensure national food self-sufficiency), activities are not over-decentralized. There is also always the danger that where there are two administrations with potentially overlapping responsibilities activities end up being undertaken by neither. Finally, given the large amount of voluntary labor promised, it is also possible that some may not materialize, or be available when needed. While it is still too early to arrive at a judgement on how the advantages and drawbacks of decentralization balance out, it would appear that the transition so far has been accomplished relatively smoothly and with no loss in development momentum.

5.17 The other major change in development strategy under the Fifth Plan was the decision to undertake several large export-oriented industrial projects based mainly on Bhutan's large forest and mineral resources. These projects would exploit, in the first instance, the large protected Indian market for these resources and their products. The profits from these industries, it was felt, would enable Bhutan to meet its objective of covering recurrent expenditures from revenues by the end of the Fifth Plan period.

#### Plan Targets and Financing

5.18 The targets of the Fifth Plan are ambitious in almost every respect. Total outlays under the Fifth Plan (which exclude those for the Chukha project) are to almost triple in current prices over the Fourth Plan; 25% of total expenditures are to be implemented through the district development plans. <sup>1/</sup> Reflecting the Government's efforts to contain non-essential and recurrent expenditures, outlays for the non-development sectors are projected to increase by only 31%, while development expenditures are to more than triple (Table 27). Public investment is projected to rise from about 16% of

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<sup>1/</sup> Although it must be recalled that unlike previous plans which covered five years, the Fifth Plan covers six.

GDP in 1980/81 to an average of about 30% during the Fifth Plan period, peaking at over 45% of GDP during 1984/85. 1/

5.19 The Planning Commission has created two categories of development-related expenditure--the so-called "development" sectors which comprise mainly the programs of existing government departments and the district administrations, and the so-called "commercial and industrial projects". 2/ Although the classification would appear somewhat ad hoc (there are, for instance, several power projects included among the "commercial and industrial" projects), the main rationale behind it seems to be based on financing. 3/ Non-development expenditures as well as the so-called "development" expenditures are to be financed mainly from internal revenues, annual Government of India grants, and already-committed international assistance, while the industrial and commercial component is largely unfinanced (Table 28). These projects account for Nu 1,025 million, or about 77% of the overall projected financing gap of Nu 1,335 million.

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1/ This comprises budgetary investment only. Including Chukha, investment would average over 40% of GDP during the Fifth Plan period, and be considerably higher through 1984/85.

2/ The terminology and classifications used in this discussion are based upon those in the document Bhutan: Country Economic Memorandum, prepared by the Planning Commission for the May 1983 Asia and Pacific Round Table Meeting sponsored by the UN.

3/ The Nu 1,596 million associated with the "industrial and commercial" projects include the 500,000 MT capacity Nanglam cement factory (Nu 516 million), two power projects (Nu 380 million), power transmission (Nu 225 million), two forestry projects (Nu 164 million), investment in the new national airline (Nu 100 million), and a calcium carbide project (Nu 95 million). It also includes investment in those activities which have been commercialized, such as tourism (Nu 26 million).

Table 27: FOURTH AND FIFTH PLAN EXPENDITURES  
(Nu million, current prices)

	Fourth Plan			Fifth Plan		
	<u>Recurrent</u>	<u>Capital</u>	<u>Total</u>	<u>Recurrent</u>	<u>Capital</u>	<u>Total</u>
Non-Development <u>a/</u>	326	81	407	400	132	532
Development <u>b/</u>	<u>336</u>	<u>770</u>	<u>1,106</u>	<u>762</u>	<u>3,044</u>	<u>3,806</u>
Total	662	851	1,513	1,162	3,176	4,338

a/ Comprises expenditures of the Royal Secretariat and the Ministries of Finance, Home Affairs, and Foreign Affairs.

b/ Development expenditures under the Fifth Plan include the industrial and commercial projects.

Source: Planning Commission.

5.20 The decision to allocate mainly already-committed resources to programs carried out by existing government departments is sound. The technical and economic viability of many of the commercial and industrial projects has yet to be established, so it would not make sense to commit scarce budgetary resources already available to these projects at this stage. Moreover, if these projects prove viable, it should be possible to attract additional financing for them at that time. Given the complete flexibility associated with the Government of India grants, it would also be possible for the Government to shift these resources to help finance the industrial and commercial projects if other financing were to become available for the "development" projects. In most cases, the Plan includes total estimated costs of these projects, even though most of these projects could not be completed within the Plan period. For most projects, detailed appraisal and preparation have also not yet been undertaken, while in others, ancillary investments are required before the projects can begin. Project expenditures in many cases are thus several years away, and would probably spill over beyond the Fifth Plan period. This component of the Plan is therefore subject to considerable uncertainty, and in reality, expenditure is likely to be considerably less than the Nu 1,596 million currently estimated. Moreover, because they are relatively large, many of these projects could only proceed if additional financing could be arranged for them. Thus, the financing gaps associated with many of these projects will in any case never materialize, and the financing gap for the Plan as a whole is in reality considerably less.

Table 28: OVERALL FINANCING OF FIFTH PLAN EXPENDITURES  
(Nu million, current prices)

Sector	Outlays	-----financed by-----			Financing Gap	as % of Total Gap
		Internal Resources and Government of India Grants	Committed International Assistance			
Non-Development	532	526	6	-	-	
"Development"	<u>2,210</u>	<u>1,436</u>	<u>464</u>	<u>310</u>	<u>23</u>	
Sub-total	2,742	1,962	470	310	23	
"Commercial and Industrial"	1,596	520	51	1,025	77	
Total	4,338	2,482	521	1,335	100	

Source: Planning Commission.

5.21 One of Bhutan's highest development priorities is to improve fiscal performance so that at least recurrent expenditures can be met from internal resources. During the Fifth Plan period as a whole this is not expected to be possible, as the following broad financial analysis of the Plan shows (in Nu million).

Recurrent Expenditures	1,162
Internal Revenues	<u>942</u>
Current Deficits	220
Capital Expenditure	<u>3,176</u>
Total Financing Requirements	3,396
Available financing:	
Government of India Grants	1,340
Internal Borrowing	200
Committed International Assistance	<u>521</u>
Total Financing Available	2,061
<u>Unfinanced Gap</u>	<u>1,335</u>

Despite the fiscal reforms introduced in 1982/83, it is not until 1986/87 that the Government expects to be in a position to at least cover recurrent expenditures with revenues (Annex 10-A). This is not because of any lack of effort on the part of the Government; on the contrary, many new revenue

measures are proposed for the Fifth Plan period; rather, it is mainly a reflection of the narrow revenue base. Direct taxes, for instance, are projected to increase almost four-fold, due mainly to new measures, while non-tax revenues are projected to almost triple as new resource-based industries come on stream. It is, however, possible that it may take somewhat longer to achieve this latter goal if, as is likely, implementation of some of the resource-based industries slips (Annex 10-B). No new indirect taxes have been proposed, but as discussed in para 2.34, it should be possible to increase sales tax revenues through improved tax administration.

5.22 The macro-economic objectives of the Fifth Plan envision Bhutan achieving an overall growth rate of 8.5% during the 1980/81-1986/87 period (Annex 10-C). Not surprisingly, the areas of most rapid growth are expected to be power (as a result of the commissioning of the Chukha project during 1984-85), industry (reflecting the new resource-based industries to be established during the Plan period), and tourism (from the expected more than doubling of tourism arrivals). Agriculture, however, is expected to grow at almost 12% per annum, which is probably unrealistic given the limited expected use of high-yield technology; on the other hand, forestry is expected to decline at about 5% per annum. This would appear unlikely as logging had already fallen sharply by 1980/81 as a result of the restrictions on commercial logging and could be expected to begin rising again with the commissioning of the forest-based industries. Also, it would not appear realistic to expect a real decline in government services, despite the recent moves to improve efficiency in that area. Increased administrative needs associated with decentralization and the inexorable rise in recurrent costs in education and health services suggest that on balance there will be growth in this area. Bank staff estimates suggest that overall growth is more likely to be a nonetheless respectable 6%, with forestry and public services growing somewhat faster than projected by the Planning Commission, and agriculture and industry, somewhat more slowly.

#### FIFTH PLAN SECTORAL DEVELOPMENT PROGRAMS

5.23 Table 29 below shows the sectoral allocation of expenditures under the Fifth Plan. 1/ The most notable changes over the Fourth Plan are the increases in the shares of industry and power, and the relative decline in agriculture, which comes mainly because no new large irrigation schemes are proposed. While the overall size of the Plan has increased significantly; actual expenditures on agriculture are to rise by about half. About 25% of the Plan is to be implemented through the districts. These decentralized expenditures comprise about 36% of the recurrent expenditures, accounted for mainly by the expanded district administrations and the decentralization of services like primary education and health. The district plans, on the other hand, account for only about 2 % of the capital expenditures, mainly

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1/ For individual sector programs, see Annex 11.

reflecting the relatively simple nature of most of the schemes being undertaken under the district plans--including minor irrigation structures, livestock breeding services, primary school buildings, Basic Health Centers, feeder roads, and suspension bridges--as well as the fact that costs exclude the manual labor input to the schemes. It also reflects the decision to retain all projects important in the national context under central supervision. Thus, the involvement of the districts is low in areas like industries and main roads, but relatively high in areas like education and health. In general, apart from the large-scale industrial projects, the types of projects proposed in the Plan are relatively simple and appropriate to Bhutan's needs and current level of development. It is, however, likely that, as in past plans, overall implementation will lag somewhat, given shortages of technical and administrative staff and the relatively ambitious quantitative targets in some sectors.

#### Agriculture, Irrigation, and Animal Husbandry

5.24 Development emphasis (Annexes 11-A and 11-B) is to be placed on the intensification of existing land use rather than on the extension of agriculture and animal husbandry into new areas. Combined outlays in these sectors amount to a relatively low Nu 617 million, or to about 14.3% of the total. Within this framework, the main objectives of the Plan are to: (i) achieve self-sufficiency in foodgrains; (ii) increase rural incomes through improved productivity and crop diversification (notably into cash crops); and (iii) as a result, improve the overall nutritional status of the population. To achieve these primary objectives, the Plan proposes a range of programs designed to strengthen agricultural and livestock support services, promote marketing and price support schemes, and undertake investment activities to upgrade the land and livestock base.

Table 29: FIFTH PLAN SECTORAL ALLOCATION OF EXPENDITURES

	Recurrent		Capital		Total	
	Nu million	%	Nu million	%	Nu million	%
Agriculture	73.2	6.3	421.6	13.3	494.8	11.5
Animal Husbandry	66.7	5.7	55.4	1.7	122.1	2.8
Forests	44.9	3.9	237.8	7.5	282.7	6.5
Power <u>a/</u>	16.0	1.4	699.0	22.0	715.0	16.5
Industry and Mines <u>b/</u>	35.8	3.1	721.0	22.7	756.8	17.4
Public Works Department <u>c/</u>	87.0	7.5	449.9	14.2	536.9	12.4
Civil Aviation	5.6	0.5	94.4	3.0	100.0	2.3
Posts and Telegraphs	19.2	1.7	5.8	0.2	25.0	0.6
Communications	30.8	2.7	35.8	1.1	66.6	1.5
Tourism	4.2	0.4	31.1	1.0	35.3	0.8
Education	209.2	18.0	130.8	4.1	340.0	7.8
Health	110.7	9.5	74.6	2.3	185.3	4.3
Information and Publicity	5.5	0.5	9.5	0.3	15.0	0.3
Headquarters <u>d/</u>	442.3	38.0	181.8	5.7	624.1	14.4
Miscellaneous	10.9	0.8	27.6	0.9	38.5	0.9
<b>Total</b>	<b>1,162.0</b>	<b>100.0</b>	<b>3,176.1</b>	<b>100.0</b>	<b>4,338.1</b>	<b>100.0</b>
<u>Memorandum Items</u>						
Implemented by Districts	421.2	36.2	667.5	21.0	1,088.7	25.1
Implemented by Center	740.8	63.8	2,508.6	79.0	3,249.4	74.9

- a/ Excluding Chukha.  
b/ Including Trade and Commerce.  
c/ Including Urban Development.  
d/ Including Non-Development sectors.

Note: It is somewhat misleading to directly compare these sectoral shares with those under previous plans (Annex 9) not only because this table includes non-development expenditures, but also because of the inclusion of the as yet tentative and largely unfinanced "industrial and commercial" projects in the Fifth Plan. A more appropriate comparison at this stage would be on the basis of the shares of the so-called "development" sector provisions, which total Nu 2,210 million. These projects can be identified in Annex 11.

Source: Planning Commission.

5.25 Table 30 summarizes the main production targets in agriculture. Total foodgrains production is expected to increase from about 165,000 MT (gross) to 204,750 MT, with the main increases expected for paddy (up 47%) and wheat (69%). The relatively low projected increases in maize (5%) and buckwheat (3%) reflect the more limited opportunities in dryland farming, the projected conversion of 8,500 ha to irrigated land, and the assumed abolition of tsheri cultivation by the end of the Plan period. The main increases in cash crops will be for those already extensively developed--potatoes, apples, oranges, and cardamoms.

Table 30: FIFTH PLAN CROP PRODUCTION TARGETS

	<u>Cropped Area ('000 Ha)</u>		<u>Production ('000 MT)</u>	
	<u>1982</u>	<u>1987</u>	<u>1982</u>	<u>1987</u>
Paddy	28.0	37.0	57.4	84.5
Wheat and Barley	12.3	16.6	13.3	22.5
Maize	56.8	52.5	80.7	85.1
Buckwheat and Millets	<u>15.5</u>	<u>15.0</u>	<u>12.3</u>	<u>12.7</u>
Total Foodgrains	112.6	121.1	163.7	204.8
Pulses	4.0	5.3	2.4	3.8
Mustard	2.9	5.5	1.9	3.9
Potatoes	3.7	5.1	24.9	50.0
Chillies and Vegetables	3.1	3.6	12.2	15.1
Oranges <u>a/</u>	6.2	8.0	25.6	53.1
Apples <u>a/</u>	1.5	1.9	3.3	8.8
Cardamoms <u>a/</u>	5.9	6.6	2.8	4.1

<u>a/</u>	<u>Percent Bearing</u>	<u>1982</u>	<u>1987</u>
	Oranges	53	77
	Apples	45	83
	Cardamoms	74	87

Source: Planning Commission.

5.26 Uncertainties concerning current import levels make it difficult to assess whether attaining self-sufficiency in cereals production is a realistic objective during the Fifth Plan period. The projected yield increases do not appear overly ambitious although obtaining them in the less accessible areas will be extremely difficult. Perhaps the greatest doubts concern the extent to which new paddyland can be developed--the envisioned increase of more than 30% appears very ambitious. Although the irrigation

sector is expected to receive allocations almost equal to the combined total of all other agricultural programs, based on past performance, implementation will proceed much more slowly than planned. Failure to achieve paddyland development targets would reduce paddy output, but because paddy accounts for less than 30% of net cereal production, the overall effect on foodgrains production would be moderated. As a result, dryland cultivation (especially tsheri cultivation) is unlikely to decline as rapidly as projected.

5.27 The production increases in potatoes and horticultural crops appear attainable, given that many existing horticulture plantations have yet to reach maturity. While a strengthened role for the FCB is important, most production is likely to continue to be marketed primarily through the private sector. For this reason, a systematic potato development program is to be implemented with assistance from the International Potato Center in Peru and should contribute to the intensification of cropping systems in other irrigated and dryland areas to exploit the excellent potential for this important crop. Vegetable seed production, limited food processing and storage development (by both FCB and the Department of Agriculture), and a number of specialized agro-industrial ventures will build on past programs and help diversify the agricultural base. However, the traditional horticultural crops will remain of dominating importance.

5.28 In animal husbandry, the main emphasis will continue to be on the introduction of exotic crossbred animals to upgrade genetic potential and improve general level of productivity. Cattle development will continue to receive priority, but greater attention is to be given to pigs and poultry, given their relatively quick-yielding potential; and also to fodder development given that the availability of winter fodder will continue to be the major constraint on increasing animal populations. Small milk collection programs have been initiated in Phuntsholing and Thimphu and it is hoped to expand this program. Apart from this, and improving the marketing of output from its own farms, the Government is probably correct in not proposing any significant interventions in the marketing of livestock products.

5.29 In contrast to most other programs in agriculture and animal husbandry, some land development and irrigation activities are relatively large-scale, geographically concentrated, and yet to be fully financed. Small-scale irrigation, land development, feeder road, and bank protection works are to be implemented by the district administrations utilizing local labor. These programs are already being supported in four western valleys by a major IFAD project, and a second project has been proposed for the east. Provided central technical support can be assured under decentralization, the level of intervention proposed appears appropriate, even though logistical problems in the east could be severe. However, a number of major projects are also proposed for the Gaylegphug/Sarbhang area in the south. While this area represents the major potential for extensive irrigation development in the country, costs are high and the hydrological, soils, and agricultural

data base is relatively weak for proceeding with full-scale development. <sup>1/</sup> While construction constraints can be overcome through employment of foreign contractors, it would seem advisable to proceed cautiously in the absence of an overall regional development plan and settlement policy and in view of the fact that operational and agricultural issues faced in the current lift irrigation project have yet to be resolved.

5.30 In general, the Fifth Plan puts forward a clear and consistent strategy for the agricultural and animal husbandry sectors and, with the possible exception of the Gaylegphug irrigation and area development projects, the level of Government intervention proposed appears well adapted to Bhutan's needs. The main concern therefore is not so much the balance and objectives of the programs so much as whether they can be effectively managed and implemented. Shortages of technical staff, the inadequacy of the data base, and the risks posed by decentralization to the maintenance of strong technical direction, together suggest that implementation will remain a problem. While this is to be expected in a country at Bhutan's stage of development and facing Bhutan's logistical problems, it nevertheless suggests that the some Government programs (e.g., in agricultural research, extension, livestock breeding, credit and marketing) will take time to have a significant effect. The Government's commitment to a competitive and free marketing system, together with further improvements in general infrastructural facilities, should ensure the continued development of cash cropping in accessible areas, while technical assistance, provided it is adapted to the small scale and particular characteristics of Bhutan's administration, can help strengthen specific programs.

### Forestry

5.31 The investment program in the forestry sector (Annex 11-C) is governed by the desire to conserve, augment, and upgrade Bhutan's forest resources; the desire to preserve the ecological system; and the need to manage and exploit the forests scientifically to meet internal forest product needs as well as the needs of forest-based industries which will increase public revenues and exports. Also, like agricultural and animal husbandry development, it can serve as a source of growth and employment in rural areas. The Plan envisions total forestry outlays of Nu 283 million or about 6.5% of the total, comprising Nu 97 million for regular development programs and Nu 186 million in forest-based industrial projects. The regular programs

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<sup>1/</sup> Not only for construction but, in the case of the lift irrigation scheme in particular, for subsequent operation. Not only are soils in this area extremely porous, requiring high rates of water application especially for paddy, but the second phase of this project involves pumping through about 110 m. Construction is complicated by the rugged terrain and the seasonal rivers and streams which empty onto the the Duars plains.

include allocations for the ongoing forest survey and demarcation exercises, as well as for reforestation programs and infrastructure to facilitate forest extraction. Reforestation aimed at restoring forest cover in areas over-forested in the past has two components--a social forestry component under which each household is encouraged to plant 10 trees, provided free of cost by the Government, on its own land, as well as large-scale programs managed by the Department of Forests designed to reforest up to 9,400 ha with woods suitable for industrial purposes. The Plan also includes provisions to improve overall forest management, including the construction of forest roads to open up new forest areas, thereby relieving the burden on presently accessible forests; the mechanization of logging operations; and the construction of certain ropeways, most notably, the 5 km Mashila ropeway near Wangdiphodrang.

5.32 The commercial component of the Plan comprises the two-phase Gedu Integrated Wood Industries Complex (para 3.37), which accounts for 40% of total outlays in the sector, and the Graded Particle Board Project, also in Gedu, which accounts for a further 20%. This project is designed to use the waste wood from the other operations at Gedu, thereby ensuring full utilization of the wood resources. As discussed in para 3.37, in deciding on further forestry projects the Government should be careful to ensure that the blend of exports will maximize net export earnings, notwithstanding the degree of processing involved.

#### Industry and Mining

5.33 Industrial development accounts for Nu 757 million or 17.4% of proposed total Plan outlays (Annex 11-D). The industrial development strategy has a twin thrust--on the one hand, to promote the development of private industries through the establishment of industrial estates to provide access to water and power, and the provision of training; on the other, to undertake a number of relatively large export-oriented, resource-based projects designed to exploit nearby markets. The former activities, together with the ongoing geological survey of Bhutan, and the preparation of feasibility studies and reports are to be financed under the regular development programs, while the industrial projects, which account for 94% of the proposed outlays in the sector, are as yet largely unfinanced. Also to help promote industry and supplement existing sources of finance, the Government is considering establishing an industrial development bank.

5.34 The largest single investment in the Fifth Plan is the Nu 516 million Nanglam cement plant. It accounts for 12% of total proposed outlays, and for 73% of those proposed in industry. This project envisions construction of a 1,500 MT per day plant in southeast Bhutan to exploit limestone, coal, and gypsum deposits. Taken on its own, the project appears to have a high rate of return and an assured market in northeast India. However, in addition to the potential difficulty of mobilizing what is a very large amount of external financing, this project also requires large supportive investments in power generation and transmission and transport infrastructure. These

additional investments should be considered in evaluating its overall economic viability. Other major industries under consideration include a Nu 95 million calcium carbide project and a high-density polythene pipe project aimed at supplying rural water supply projects. However, implementation of these projects would have to wait until at least 1984, when the necessary power from Chukha becomes available. It is also proposed to invest in several new mining projects, including graphite mining and beneficiation and gypsum, and to expand existing slate mining operations. Gypsum would be used by the cement industries as well as be exported, while slate would be used to meet domestic roofing needs, thereby replacing the need for imported corrugated iron. The Government has also identified a number of smaller industrial projects valued at about Nu 20 million, which it is hoped will be carried out by private entrepreneurs in the districts.

### Power

5.35 Even though the Chukha project is being undertaken outside the Plan, power development (Annex 11-E) accounts for Nu 715 million, or for 16.5% of proposed Plan outlays, the second highest after industries. The power development strategy is two-fold: to begin developing a grid in western Bhutan based on the power from Chukha, and to undertake a number of generating projects in other parts of Bhutan which would not be integrated into the grid for many years to come. The Plan also proposes preparation of a power sector Master Plan, which is a high priority. Few sectors are as capital-intensive or as system-interconnected as power; hence, it is crucial to determine the system which develops the power potential and meets domestic power needs at the least overall cost. While undertaking the master plan, the Government also intends to undertake preparation studies for a number of specific hydro-projects, including two medium-sized hydro-projects aimed at meeting domestic power needs. Although some provision has been made in the Plan for financing these two projects, final investment decisions would depend on the individual projects being economically viable and be made only after a careful review of alternative means of meeting power needs.

5.36 Power transmission accounts for about Nu 219 million, or about 30% of the proposed investment in the sector. This proposed investment in transmission is designed to augment the transmission investments being carried out under the Chukha project itself (para 3.66). It comprises adding a 220 kV line from Chukha north to Simtokha (outside Thimphu), which would be extended eastwards to Wangdiphodrang and Punakha, 66 kV lines to Ha and Paro, and extension of the existing 66 kV line from Chukha to Phuntsholing westwards to Pagli and Samchi. It is also proposed to install a 220 kV line to Gaylegphug which would also be tapped at Dagana, Chirang, and Sarbhang. This would effectively link all of west and west-central Bhutan into a grid fed by Chukha. While it is understandable that Bhutan wishes to proceed at an early stage and install the power infrastructure to enable the acceleration in growth, especially in industry, there are several options available for meeting these needs which should all be considered.

## Transport

5.37 Under the Fifth Plan, a total of Nu 459 million is to be allocated to land transport infrastructure, or about 11% of total outlays (Annex 11-F). Roads development continues to absorb most of the expenditures in the sector, accounting for 92% of the total. The Plan includes for the first time outlays for the BRO, comprising Nu 105 million for improvement and all-weather surfacing of the east-west highway. The PWD will undertake construction of 467 km of new roads, continue work on another 273 km, and surface about 520 km of roads. Apart from the road from Damphu to Daga and the road from Damphu to Wangdiphodrang, which will create a fourth north-south link, most of these roads are feeder roads linking district headquarters to areas of agricultural, forest, or industrial importance. In the process of constructing these roads, the PWD hopes to be able to increase the degree of mechanization in its operations to reduce the need for manual labor and improve the quality of road construction. Despite increased mechanization, the roads development program appears somewhat ambitious, especially if maintenance programs are expanded as warranted (para 3.74). The main constraint facing the PWD is an acute shortage of experienced engineers and technicians, and although the Government could recruit increased numbers of such staff from outside Bhutan, it would still not appear possible to do this in time to complete the entire program.

5.38 Under decentralization, maintenance of district and feeder roads has become the responsibility of the district administrations, while the PWD will continue to maintain those sections of the national highway system not maintained by the BRO. Accordingly, Nu 23 million and Nu 7 million, or less than 2% of total transport infrastructure outlays, are earmarked for central and district road maintenance, respectively. Given the frequent need to divert funds to new construction from maintenance, the Government should also carefully monitor maintenance requirements to ensure they are being met. Currently, the PWD maintains about 400 km of roads, which will rise to about 900 km by the end of the Plan. <sup>1/</sup> On this basis, the allocation per kilometer would average about Nu 7,000 per year, which is less than at present and is considered only about half what it cost to satisfactorily maintain the main roads given the difficult topography. Deterioration has already set in on some PWD-maintained roads. Road maintenance provisions should, therefore, be increased. The provisions would, however, appear adequate for district roads, as labor, the main input, is to be provided by the districts on a voluntary basis.

5.39 Given the rugged terrain and the swiftly flowing rivers of most of Bhutan, suspension bridges together with mule tracks perform a vital role in providing access over rivers and between valleys. The construction of suspension bridges is justifiably a high priority under the Fifth Plan, with

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<sup>1/</sup> The BRO maintains about 1,400 km of roads with its own resources.

Nu 26 million to be provided for the construction of 186 new suspension bridges under the district administrations, including 80 bridges being constructed with UN assistance. Central contributions will be limited to materials and technical assistance. Although only Nu 1 million has been provided for mule tracks development, the success of this program, which envisages construction and improvement of about 1,000 km of tracks, primarily depends upon the district administrations mobilizing the voluntary labor.

5.40 BGTS and the Government Workshops and Central Stores are now both operating on a commercial basis and are expected to require no Government subsidy. Development plans for both are modest. BGTS plans a small expansion of its fleet and to open up new bus routes, mainly in central Bhutan. The main need in the case of the Government Workshops and Central Stores is to improve their financial performance to enable them to run without the need for any Government subsidy. To improve financial performance, the Government has recently put them under private sector management on a contract basis.

5.41 Fifth Plan allocations for civil aviation amount to Nu 100 million, earmarked for the establishment of the national airline, Druk Air. They comprise Nu 94 million in capital outlays, mainly for the purchase of the aircraft, and Nu 6 million for recurrent expenditures. As operations began only recently, it is still too early to judge whether these provisions will be adequate. So far, little provision has been made for related ground investment as the plane will be initially based in Calcutta (para 3.78). The newly established Department of Civil Aviation will have to be financed from this allocation. The Government should carefully monitor the financial performance of DAC before deciding to introduce additional international or domestic routes or purchase additional aircraft.

#### Communications

5.42 The development of communications facilities has progressed to the point where the main areas of the country are now reasonably well served with basic infrastructure. However, large areas--generally sparsely populated--remain outside the basic network, while existing facilities need upgrading to meet the increased demand for rapid and reliable communications arising from the accelerated development effort. Communications development under the Fifth Plan is aimed at meeting these needs. Outlays amount to Nu 107 million, comprising provisions of Nu 85 million for the Posts and Telegraphs, Telephones, and Civil Wireless; and Nu 22 million for Information and Publicity, and Broadcasting (Annex 11-G). These amount to a relatively small 2% of total outlays.

5.43 The program to expand postal services is modest. It includes the construction of a new General Post Office in Thimphu, 10 new Branch Post Offices, the procurement of 24 mobile post offices (which will also serve as mail vans), the upgrading of five Branch Post Offices to regular post offices, the expansion of post box services, and the opening of new runner

routes to six towns. Philatelic operations, which are still a significant foreign exchange earner, will continue to be promoted. There are no plans to expand the telegraph services, although old equipment will gradually be replaced.

5.44 The Wireless Department has been allocated Nu 3 million for the procurement of 100 new standardized radio transceivers to replace obsolete equipment and the establishment of two new wireless stations. The Wireless Department will continue to operate the hydro-meteorological stations, the full costs of which will continue to be borne by the Government of India.

5.45 Telephone service development accounts for about Nu 25 million of the development outlays in the communications sector. The development program provides for expansion of both domestic and international service. The exchanges in Phuntsholing, Samchi, Samdrup Jongkhar, Tashigang, Sarbhang, and Wangdiphodrang are to be expanded. Also, a trunk line will be opened up between Thimphu and Samchi, and 20-line telex exchanges will be opened in Thimphu and Phuntsholing. Telephone access to Bhutan should improve with the commissioning of the Indo-Bhutan microwave link currently scheduled for end-1983, but being implemented outside the Plan. Also during the Fifth Plan period, the Telephone Department plans to completely take over operations from the BRO in Phuntsholing, Tashigang, and Samdrup Jongkhar.

5.46 Under the Fifth Plan, Nu 22 million has been earmarked for publications and broadcasting. This is to increase the awareness to and participation in development, undertake public education, while at the same time preserving traditional values. Most of the Nu 15 million allocation to the Department of Information will go towards a Development Support Communication system to spread development-related information through a network of district subcenters. Radio NYAB has been allocated Nu 7 million to expand its service. It is evident that broadcasts are popular and serve useful social and development functions. Under the Plan, broadcasting is to be increased from three hours thrice weekly to nine hours daily. At present, Radio NYAB shares facilities with the Wireless Department, but under the Plan a separate 5 KW broadcasting facility is to be established.

#### Education

5.47 Education outlays under the Fifth Plan amount to Nu 340 million, or 7.8% of total outlays. Reflecting the heavy share of salaries in education, recurrent expenditures account for 62% of proposed expenditures. While education objectives have not changed--raising the literacy rate, meeting educated and trained manpower needs, and bringing about modernization while still maintaining Bhutan's cultural identity--the strategy of achieving them has changed. Rather than expanding education infrastructure at the rapid rate of previous plans, the Government hopes under the Fifth Plan to achieve its objectives by consolidating and improving existing programs and

facilities, and by improving the quality of education through curriculum reform, by upgrading teacher training programs, and by reorganizing technical education. This strategy of improving the efficiency of education services is sensible, given the considerable amount of physical investment under past plans and the relatively high present share of education expenditures (para 4.12). The distribution of education outlays (Annex 11-H) reflects this change in approach.

5.48 With an estimated annual growth rate of 10% in enrollment, the total student population in primary schools is projected to increase from 33,610 in 1980/81 to 58,300 by the end of the Plan period. However, most of the new students will be absorbed into the existing schools through improved utilization of school space through the use of afternoon sessions and increased ratios of students to teachers. The Government proposes to open 21 new primary schools, mostly in remote rural areas which are presently not covered, and to add 200 classrooms to existing schools.

5.49 Secondary school enrollment in junior high schools is expected to increase from 1,856 in 1980/81 to 4,370 in 1986/87, and from 368 to 813 in central schools. No new junior high schools or central schools will be established during the Fifth Plan; again, the increase will be absorbed into existing schools primarily through addition of new classrooms and dormitory facilities. However, the Government proposes to upgrade one primary school to a junior high school and two junior high schools to central schools.

5.50 To meet the rising demand for technicians and craftsmen in both the public and private sectors, the Government proposes to upgrade facilities at the Royal Bhutan Polytechnic and the Kharbandi Technical School and to revise the curriculum to give technical education a more practical orientation. The National In-Plant Training System, started in 1978, will also be recast and made more effective. In response to increasing demand for higher level manpower, the Government proposes to double the annual intake of the existing Junior College at Kanglung to around 200 by 1986/87. In 1983, the Government started upgrading the programs at the Junior College to begin offering full three-year degree programs in the humanities and sciences.

5.51 The education system will remain heavily dependent on expatriate teaching staff during the Fifth Plan period, due to a severe shortage of qualified Bhutanese teachers. Under the Plan, however, the Government will make a concerted effort to increase training of nationals. The two existing teacher training institutions will be expanded and strengthened, not only to increase the proportion of nationals in the total teaching staff, but also to meet the requirements for additional teachers over the next five years--320 in primary schools and 88 in secondary schools. The Teacher Training Center at Paro will be provided with additional facilities to increase its intake, and the Teacher Training Institute at Samchi will be upgraded to become the

National Institute of Education, adding secondary teacher and in-service training programs to its existing primary teacher training program.

### Health

5.52 Fifth Plan outlays for health are to amount to Nu 185 million, or 4.3% of the total Plan outlays (Annex 11-1). Given the poor state of public health, these would appear relatively low. Of these, Nu 75 million or 40% will be allocated to capital expenditure and the rest to operations and maintenance. The main focus in the health sector is to consolidate and upgrade existing health facilities and to widen the coverage of the public health services in a relatively cost-effective manner by strengthening the primary health care system. The strongest constraint to expanding health services is the shortage of medical personnel, which reflects the overall shortage of trained manpower. Nevertheless, given the urgent need to strengthen health services, every effort should be made to increase health manpower, initially by filling all available training spaces (para 4.28).

5.53 Under the Plan, the Government intends to establish two new district hospitals and to upgrade all existing district hospitals to a minimum of 20 beds and to provide them with basic radiological and laboratory equipment and additional trained staff. Likewise, facilities at the country's three referral hospitals will be upgraded. The Government also plans to establish 13 new BHUs under the Plan and to upgrade 19 dispensaries to BHUs. Ten new dispensaries are to be added. Additional voluntary health workers are to be trained to bring their total number to 1,000 by 1986/87. These mainly curative programs account for about 70% of total health outlays.

5.54 Preventive health programs account for only about 15% of total health outlays. They include measures to strengthen the pediatric services, primary health care, and family welfare services, and to extend the coverage of the immunization programs. Also, during the Fifth Plan period, the existing special disease control programs covering malaria, tuberculosis, leprosy, and goiter, which have been administered independently, will be integrated within the overall health care delivery system and strengthened. These programs are to account for about 5% of health outlays. The remaining 10% of health outlays will go towards expanded training of medical personnel, strengthening of the health supervisory system, improving storage facilities and procurement and transportation systems for drugs, and streamlining the data collection and monitoring systems.

### Water Supply and Urban Development

5.55 Although Bhutan is still an overwhelmingly rural society, the small urban population has been growing steadily, and with it, the need for urban development. Perhaps most important are water supply and sanitation services, which play a critical role in ensuring public health. However, the problem of safe water supply is not limited to urban areas, and as a result of the awareness created by the "International Drinking Water Supply and

Sanitation Decade", Bhutan plans major efforts in both urban and rural water supply, and in urban sewerage schemes. Total proposed outlays in urban development, water supply, and sanitation amount to Nu 145 million or 3.3% of Plan expenditures, of which water supply and sanitation account for over 85% (Annex 11-J).

5.56 Thirteen urban centers have piped water supply systems, which are estimated to reach about half the urban population. The Government has formulated a two-phase plan to provide safe drinking water to the remainder. The first phase, which would be taken up in the Fifth Plan period would cover the six largest and most rapidly growing urban centers--Thimphu, Phuntsholing, Paro, Tashigang, Samdrup Jongkhar, and Gaylegphug. The projects would include gravity tapping of mountain streams, water treatment, and piped distribution. This program is estimated to cost about Nu 6 million. To complement the investments in urban water supply, the Government proposes to undertake solid waste disposal programs, initially in the same six towns at a cost of about Nu 2 million. It is also proposing to create modern sewage disposal systems in Thimphu and Phuntsholing, the two largest towns. In both towns, the further expansion of existing septic tank systems is likely to result in health hazards. These two projects are also to be undertaken in two phases, with Nu 41 million to be spent under the Fifth Plan. At present, none of these urban water supply, solid waste, and sewage disposal projects are funded.

5.57 The largest program in this sector, however, is the rural water supply program, accounting for Nu 51 million, or about 35% of total outlays. By 1986/87, the Government hopes to provide piped water supply to 918 additional villages, and cover an estimated 60% of the rural population. The schemes are mostly simple gravity-flow systems tapping mountain streams and distributing the water to public standposts through polythene pipes. Part of the materials required for the schemes will be provided by UNICEF. This is a very ambitious program which the Government will be hard-pressed to implement, even assuming all the necessary materials can be procured on time, as there are likely to be implementation constraints due to shortages of adequately trained supervisory staff. A small rural sanitation project focusing on schools and basic health centers is also included in the program.

5.58 Other urban development programs are relatively minor, and account for less than 15% of the outlays in this sector. They include expansion and maintenance of the urban road network, provisions for increasing street lighting, and sites and services development in seven urban centers. A small Nu 3 million low-cost housing program aimed primarily at civil servants is also included in the Plan. In the past, all civil servants were provided with a house, but over time, the Government intends to cease this practice and encourage civil servants to purchase their own homes.

Chapter VI: CONSTRAINTS TO DEVELOPMENT AND THE ROLE  
OF EXTERNAL ASSISTANCE

6.01 Although events in Bhutan have gone largely unnoticed since the country launched its development effort some twenty years ago, as discussed in earlier chapters, great progress has been made during this period. Bhutan has developed an impressive stock of basic economic infrastructure, and enjoys a standard of living that clearly belies its very low per capita income. It has also built almost from scratch a still fairly small, but nevertheless dynamic, development administration. That administration, under the direct personal leadership of the King, has shown itself prepared to take sometimes difficult economic decisions and then promptly implement them. In short, a sound stage has been set for a new and strong development momentum during the Fifth Plan period.

6.02 Much thought has gone into the development strategy behind the Fifth Plan. While the Government is determined to accelerate the pace of development, it is equally intent on minimizing its impact on Bhutan's richly traditional society; thus, for instance, the continued strictly controlled approach to tourism. The Government is also clearly determined to learn from the development mistakes of others; consequently, the conservative approaches to education and to forest exploitation. And for all its ambitiousness in financial terms and its innovativeness in the institutional approach, the Fifth Plan for the most part is also relatively conservative, building upon and expanding successful existing approaches, rather than introducing radical new changes. This can explain the cautious approach to modern agricultural technology and to farm mechanization. Even the decision to embark on resource-based, export-oriented development, it could be argued, is not new--the decisions to implement the Chukha hydro-power and Penden cement projects were heavily influenced by the same factors about a decade ago. What is new, however, is the desire to accelerate the pace of development and implement the large development program, even if this means dramatically breaking out of traditional financing constraints. How close the Government will in fact come to implementing the Fifth Plan will depend in part on how easily the various constraints to development can be overcome. The remainder of this chapter examines the extent to which these constraints could affect Plan implementation and the role external assistance can play in helping to overcome them.

CONSTRAINTS TO DEVELOPMENT

Manpower Constraints

6.03 Like most low-income countries, Bhutan has experienced continued shortages of technical and managerial manpower; unlike most of them, however, there have also always been shortages of manual labor due to the small

population and the low productivity of labor in agriculture. The cash nature of the development grants from India has permitted Bhutan to overcome this constraint through the use of expatriate labor, which has placed Bhutan in the position of being perhaps the only low-income country which has a significant expatriate manual labor force. Similarly, through a combination of technical manpower hired directly from India, and by making use of technical assistance offers by the Government of India and others, Bhutan has been able to reduce the technical constraints on development planning and project implementation.

6.04 While Bhutan intends to limit the flows of students into higher education and technical training, these limits are not as yet binding. Moreover, due to the long gestation periods entailed in manpower training, there is in any event little that can be done at present to increase the supply during the Fifth Plan period. The Government is, therefore, resigned to continuing to use expatriate technical manpower, as needed, to help implement the Plan. While most such technical staff can be found in India, their salaries are still relatively high and constitute a significant cost to Bhutan. In this respect, trained manpower, therefore, remains a significant development constraint. Bhutan will also continue to need expatriate manual labor in relatively large numbers for many years to come. But over time, the Government intends to reduce the need for such labor by increasing mechanization in labor-intensive areas like road construction, by gradually increasing productivity in agriculture, and by taking Bhutan's labor constraints into consideration in deciding on the technologies to be used in industrial projects.

6.05 Bhutan will find it more difficult to circumvent the domestic shortage of administrative manpower, as these responsibilities are best met by nationals. While there have always been shortages in these areas, especially of experienced staff, which Bhutan has not been able to overcome, this problem was recently exacerbated by decentralization and the need to strengthen the district administrations. The result is that experienced staff are stretched more thinly than ever. As the scope for using expatriates in these areas is relatively limited, it is this shortage more than any other which is likely to constrain the development effort, especially since development is to be accelerated significantly at the same time. Considering these technical and administrative manpower constraints, it is likely that overall Plan implementation will be somewhat slower than projected.

#### Physical and Material Constraints

6.06 Bhutan's rugged terrain will undoubtedly remain a constraint to development, but apart from small specific road links, to certain mineral deposits for instance, the basic road network covers all major regions of the country and is relatively underutilized. As such, transportation cannot be

considered a major development constraint. What is needed, however, is continued emphasis on feeder and district level roads to gradually open up new areas to forestry and to give agricultural communities easier access to markets to encourage the production of agricultural surpluses. The internal communications network is also adequate under the circumstances, although international links remain weak. Trade and transit arrangements with India function smoothly and cannot be considered an impediment to development. Power will, however, remain a significant constraint in western Bhutan, especially to industry, until the Chukha project is commissioned in late 1984, and in eastern Bhutan, until long after that. By and large, materials supplies are unlikely to impose significant constraints on project implementation. Most building materials, with the exceptions of metal and plastics products, are produced domestically; Bhutan appears to have been obtaining adequate supplies of other development products from India.

#### Financing Constraints

6.07 It is probably safe to assume that until now development financing constraints have not been as important in Bhutan as elsewhere, partly because of the very high levels of assistance from India and the complete flexibility the Government has enjoyed in using much of it. Perhaps more significantly, however, financing was a weak constraint because the pressures to develop in Bhutan have not been as strong as in most other countries. Thus, the Government appeared relatively content with the pace of development that available financing permitted.

6.08 With the Fifth Plan, however, the Government has not been satisfied to continue the practice of simply matching expenditures to resources. Instead, the Government began by assessing development needs and priorities. As a result, the Fifth Plan, as it currently stands, has a financing gap of Nu 1,335 million or about \$134 million (para 5.19 and Table 28). In reality, this gap is uncertain due to the number of large "commercial and industrial" projects which have been included in the expectation that thorough investigation will indeed establish their economic and technical viability. These projects account for over three-fourths of the gap. If viability of certain projects cannot be proven, then those projects should be dropped from the Plan, and the financing gap would be correspondingly reduced. If they prove viable, the Government hopes that they will attract additional external finance. In either case, therefore, the financing gap on these projects is likely to be much less than the Nu 1,025 million (\$103 million) projected.

6.09 This is not to imply that there will be no financing constraints on the Plan. On the contrary, two important financing needs must be recognized--the Nu 310 million (\$31 million) financing gap on the regular development program (see Table 28), and the inevitable need for a significant domestic contribution to the financing of the industrial and commercial projects. While additional external assistance may be forthcoming to help

finance part of the Nu 310 million gap on the regular development programs, the remainder, as well as the domestic contribution to the industrial and commercial projects, will have to be mobilized from domestic sources. It will not be easy to raise public savings further, as the Plan financing projections already assume a significant improvement in the public savings performance; indeed, revenue projections depend in part on bringing some of the resource-based projects on stream by 1986/87, which could only be done if they were implemented now. There would, however, appear to be more scope for increasing revenues from domestic sales taxes (para 2.34), mainly through improved administration, than the Plan financing estimates indicate.

6.10 The two remaining financing alternatives available to the Government under these circumstances are to engage in expansionary finance through the use of ngultrum currency borrowed from the Royal Monetary Authority, or to borrow from the other domestic financial institutions. There is undoubtedly some scope for additional ngultrum currency financing as the level of ngultrum in circulation is low and monetization of the economy is increasing. However, caution needs to be exercised in this process to ensure that the free one-for-one convertibility of ngultrum into rupees can be maintained, thereby ensuring continued confidence in the ngultrum. 1/ Failure to maintain that confidence would harm the Government's ability to shift over time to a ngultrum-based financial system.

6.11 On the other hand, there is undoubtedly significant scope for utilizing the large resources of the financial institutions to help cover part of the domestic financing gap. As discussed in paras 2.41-2.43, the idle cash and bank balances of the RICB, the EPF, and the UTB at end-1982 amounted to about Nu 35 million, or to one-third of their combined portfolios. The Bank of Bhutan held an additional Nu 250 million in liquid assets, mostly in rupees. While part of these must be considered foreign exchange reserves which Bhutan would not wish to draw down excessively, these have been rising steadily in recent years and a portion could easily be used to help finance an investment push. The industrial projects under the Plan could be considered strong candidates for using some of these resources, either as loans to Government or in the form of equity participation. The Government proposes to borrow up to Nu 200 million during the Fifth Plan period from these sources (para 5.21). It is difficult at this stage to judge whether this overall amount is excessive or not. The amounts available for project financing will have to be gauged and budgeted on a year-by-year basis, taking into consideration the liquidity requirements of the

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1/ If too many ngultrums were issued and the excess demand created by them spilled over into imports from India, the Government's foreign exchange reserves could quickly decline, necessitating a departure from free one-to-one ngultrum to rupee convertibility.

institutions, private sector credit needs, and the amounts required to maintain adequate rupee foreign exchange reserves.

6.12 The Government has already begun using the financial institutions as an additional source of investment finance, but decisions to do so have usually been done on an ad hoc basis in response to budgetary financing difficulties. In at least one case, these resources were put towards an unsuccessful investment for which the Government is now reimbursing the EPF. More recently, however, the Government has shown signs of being more consistent in its approach to using such finance--the recent decision to name the EPF as the domestic partner in the Gedu Wood Industries Project, for instance, is a sound one.

#### THE ROLE OF EXTERNAL ASSISTANCE

6.13 It is apparent that Bhutan faces some formidable development constraints, only some of which can be directly addressed through external assistance. Nevertheless, the economy of Bhutan, especially the modern sector, is so small that even small amounts of well-conceived and implemented external assistance can have a significant development impact extending beyond the immediate sector. On the other hand, ill-conceived assistance can stand out equally glaringly and have serious overall economic consequences. Under these circumstances, the quality of assistance to Bhutan is at least as important as the quantity. At this early stage in Bhutan's development, the principal objective of donors should be to support the Government's development efforts through well-conceived, well-financed projects. This will entail significant amounts of technical as well as financial assistance.

6.14 Technical assistance needs extend through most areas of the economy and all stages of the project cycle, reflecting the general shortage of trained technical and managerial manpower in Bhutan. Although the Government has a clear idea of the types of projects it would like to undertake, and initiates project identification activities, those reports for the most part fail to address project alternatives and ancillary investment needs, or to thoroughly appraise project viability. Given the limited amount of investment resources available to Bhutan, all these issues must be carefully considered, and donors are encouraged to assist the Government in thoroughly appraising and preparing promising project proposals. Technical assistance needs are also likely to extend to the preparation of detailed engineering work, and to project implementation. It would also be appropriate in certain cases, especially the larger industrial projects, to provide technical assistance in the early stages after commissioning to ensure efficient operations. Not only would technical assistance help promote efficient resource utilization by Bhutan and the success of individual projects, but also, if concerted efforts are made to involve Bhutanese at all stages, perform a valuable training function. To help meet these needs, IDA is considering a \$3.0 million technical assistance credit. At the same time,

donors should consider training an integral part of their assistance to Bhutan, not only through traditional fellowship programs, but also by specifically including training components in projects.

6.15 While the Government is handling macro-economic management and development planning well, it is also likely that there would be high returns to well-focused technical assistance in these areas. One priority area in which technical assistance could have a high payoff is in helping strengthen the institutional infrastructure to develop and maintain basic statistical systems. Significant progress has been made in establishing a basic data base, especially in agriculture; what is needed now is to begin keeping time series in important areas like production, prices, international trade, and the national accounts. While the Government has a strong commitment to development planning and has done a commendable job in preparing the Fifth Plan, there is some scope for assistance in specific planning areas such as expenditure phasing and strengthening the links between the annual budgets and the Plan.

6.16 External finance is needed, in the first instance, to help raise the rate of investment in Bhutan by supplementing the domestic savings effort. Given the limited scope that exists for increasing domestic savings, increased levels of investment in Bhutan will have to depend heavily upon increased flows of external assistance, and unless additional aid materializes, many of the investments proposed under the Fifth Plan cannot be carried out. As discussed elsewhere in this report, the development strategy is basically sound and worthy of donor support. There are, however, several issues which should be taken into account in providing assistance. First, assistance to Bhutan must be on highly concessional terms. Not only can this be justified because Bhutan is one of the least developed countries, but Bhutan's ability to service convertible currency debt is always likely to remain limited (at least as long as the Indian rupee is non-convertible), due to its location which makes India a natural export market. While earnings from overseas exports and tourism will grow, this growth is likely to be fairly slow and earnings are likely to remain relatively small overall, which will limit Bhutan's ability to service anything but the most concessional debt. Second, donors should finance a high proportion of total project costs, including full foreign exchange costs (including likely Indian rupee costs) and a significant proportion of local costs. Full foreign exchange cost financing is critical as even small financing gaps would pose a serious burden on Bhutan's convertible currency reserves, given their limited size and the relatively high cost of some of the development projects. Local cost financing is warranted to support the Government's own determined efforts to mobilize resources under difficult conditions, and to help ensure that indirect foreign exchange costs are also covered.

6.17 Even though there is likely to be substantial goodwill on the part of the aid community to assist Bhutan's development efforts, because of

Bhutan's small population, the amounts of concessional finance available to Bhutan are likely to be relatively limited. Compared to these, Bhutan's financing needs are large, in the main due to the comparatively capital-intensive nature of parts of the development program and the need to exploit certain minimum economies of scale. Adequately financing the costs of some of the larger projects is likely to be beyond the means of any individual donor. Consequently, co-financing, despite its tendency to complicate project preparation and implementation, is likely to play a significant role in helping Bhutan finance larger development projects.

6.18 Bhutan is a small country developing under difficult physical circumstances. It is, however, well managed and has good natural resources. The development strategy is fundamentally sound and well adapted to the country's unique circumstances, although Plan targets are probably somewhat ambitious considering the significant development constraints the country faces. But as much as anything else, this would appear to reflect the Government's intention to break out of its somewhat passive role of the past and actively pursue particular development goals. More important, however, than the relatively ambitious nature of the Plan is the fact that the Government would appear to be making efficient use of the resources at its disposal. External assistance can therefore have a strong development impact provided individual projects are economically viable, technically well prepared and implemented, and have a high degree of financing provided on concessional terms. The commitment to development, in the context of the country's traditions, is strong, and under the circumstances, the future for Bhutan would appear bright.

LAND USE PATTERNS BASED ON 1974-79 PRE-INVESTMENT SURVEY OF FOREST RESOURCES

	Northwest Bhutan a/		North-Central Bhutan b/		Northeast Bhutan c/		Southern Bhutan d/		All Bhutan	
	Sq km	%	Sq km	%	Sq km	%	Sq km	%	Sq km	%
<u>Forest</u>										
Conifer	2,963.8	37.2	1,654.4	24.5	751.1	18.1	496.5	4.8	5,865.8	20.1
Broadleaved and Conifer	487.9	6.2	625.9	9.3	381.1	9.2	370.4	3.6	1,865.3	6.4
Broadleaved	1,581.1	19.8	2,902.4	42.9	1,926.4	46.6	7,451.9	72.2	13,861.8	47.5
Alpine Pasture and Shrubs	497.2	6.3	409.7	6.0	322.3	7.8	350.3	3.4	1,579.5	5.4
Empty Spaces in Forests	79.3	1.0	99.6	1.5	12.8	0.3	152.9	1.5	344.6	1.2
Sub-total	5,609.3	70.5	5,692.0	84.2	3,393.7	82.0	8,822.0	85.5	23,517.0	80.6
<u>Non-Forest</u>										
Cultivated, Inhabited, or under Orchards	438.8	5.5	377.2	5.6	631.5	15.3	1,045.0	10.1	2,492.5	8.5
Snow Covered	187.8	2.4	0.5	neg.	-	-	9.8	0.1	198.1	0.7
Lakes and Water Spreads	33.5	0.4	15.0	0.2	3.5	0.1	98.2	1.0	150.2	0.5
Exposed Rocks and Barren Areas	1,674.8	21.0	676.0	10.0	19.9	0.5	331.0	3.2	2,701.7	9.3
Sub-total	2,334.9	29.3	1,068.7	15.8	654.9	15.9	1,484.0	14.4	5,542.5	19.0
Area under Cloud Cover	16.0	0.2	-	-	88.6	2.1	12.3	0.1	116.9	0.4
Total Area Surveyed	7,960.2	100.0	6,760.7	100.0	4,137.2	100.0	10,318.3	100.0	29,176.4	100.0

a/ Corresponds roughly to Ha, Paro, Thimphu, Gasa, and Wangdiphodrang districts.

b/ Corresponds roughly to Tongsa, Bumthang, Mongar, and Shemgang districts.

c/ Corresponds roughly to Lhuntsi, Tashigang, and Pema Gatsel districts.

d/ Corresponds roughly to Samdrup Jongkhar, Gaylegphug, Chirang, Dagana, and Phuntsholing districts.

Note: Area excluded from survey comprised far north and northwestern areas of Bhutan, mainly under permanent snow cover.

Source: Department of Forests, Ministry of Trade, Industry, and Forests.

ESTIMATED IMPORTS FROM INDIA, 1981/82

<u>Consumer Goods</u>	<u>Nu '000</u>	<u>Percent of Total</u>
<u>Food</u>		
Rice	15,636	3.9
Wheat/Wheat Flour	6,313	1.6
Sugar	6,032	1.5
Dairy Products	4,147	1.0
Meat Products	3,237	{
Salt	3,000	{ 2.1
Edible Oils	2,392	{
Other	9,082	2.2
Sub-total	49,839	12.3
<u>Non-Food</u>		
Fabrics	12,000	3.0
Stationery and Books	8,840	2.2
Yarn	6,750	1.6
Garments/Footwear	5,112	1.3
Other	23,165	5.7
Sub-total	55,867	13.8
Total Consumer Goods	105,706	26.1
<u>Intermediate Goods</u>		
Petroleum Products	57,555	14.2
Iron and Steel Pipes, Sheets, etc.	32,682	8.1
Bottles	5,655	1.4
Cement	4,000	1.0
Coal	3,354	0.8
Other	4,776	1.2
Total Intermediate Goods	108,022	26.7
<u>Capital Goods</u>		
Machinery and Equipment	89,321	22.1
Trucks	19,900	4.9
Automobiles	1,950	{
Motor Vehicle Spares	7,540	{ 3.5
Other	4,662	{
Total Capital Goods	123,373	30.5
<u>Unclassified Imports</u>	67,420	16.7
Total	404,521	100.0

Source: Department of Trade and Commerce, Ministry of Trade, Industry, and Forests.

Annex 2-B

ESTIMATED EXPORTS TO INDIA, 1981/82

	<u>Quantity (MT)</u>	<u>Value (Nu '000)</u>	<u>Percent of Total</u>
<u>Agricultural Products</u>			
Oranges	9,427	17,157	9.6
Potatoes	12,988	15,586	8.7
Cardamoms	804	10,768	6.1
Soyabeans	281	694	{
Chillies (dry)	94	609	{ 2.3
Other	-	2,782	{
Sub-total		47,596	26.7
<u>Forestry Products</u>			
Sawn Timber	2,662	15,984	9.0
Rosin	1,281	7,210	4.0
Tea Chest Components	240	1,060	{
Core Veneers	14	334	{ 1.5
Other	-	1,312	{
Sub-total		25,900	14.5
<u>Mineral Products</u>			
Cement	70,704	47,372	26.6
Talcum Powder	424	10,820	6.1
Lime Powder	5,264	1,340	{
Other	-	188	{ 0.9
Sub-total		59,720	33.6
<u>Manufactured Products</u>			
Processed Foods	675	4,761	2.7
Menthol Products	37	4,726	2.7
Liquor	129	950	{
Turpentine	286	585	{ 1.0
Other		303	{
Sub-total		11,325	6.4
<u>Unallocated</u>		33,440	18.8
<u>Total</u>		177,981	100.0

Source: Department of Trade and Commerce, Ministry of Trade, Industry, and Forests.

IMPORT QUOTAS FROM INDIA, 1982/83

Steel	-	3,769.26 MT
Explosives		
a) Gelatin	-	326.5 MT
b) Detonators	-	180,000 Nos.
c) Fuse Coils	-	300,500 Nos.
Bitumen	-	1,200 MT
Coal	-	39,280 MT
Fertilizers		
a) Superphosphate	-	301.03 MT
b) C.A.N.	-	101.58 MT
c) Muriate of Potash	-	21.01 MT
d) Suphala	-	243.62 MT
e) Urea	-	95.13 MT
Spirit	-	101,000 Lts.
Molasses	-	10,000 MT
Edible Oils		
a) Rapeseed Oil	-	180 MT
b) Palm Oil	-	185 MT
Mutton Tallow	-	5 MT
M.H. Sheet (rubber)	-	5,000 pieces
Special Sheet (rubber)	-	5,000 pieces
Paraffin Wax	-	303.5 MT
Potassium Chlorate	-	8.5 MT
Red Phosphorous	-	0.6 MT
Sulphur	-	1.2 MT
Corrugated Galvanized Iron	-	17.25 MT
Rice	-	500 MT/month
Wheat	-	300 MT/month
Sugar	-	150 MT/month
Salt	-	4,000 MT

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Source: Department of Trade and Commerce, Ministry of Trade, Industry, and Forests.

Annex 3-A

EXPORTS TO THIRD COUNTRIES, 1981/82

<u>Commodity</u>	<u>Quantity</u>	<u>Value (Nu '000)</u>
Rosin	99,942 kg	711
Cardamoms	377,500 kg	5,546
Spruce and Hemlock Timber	15 CMB	28
Handicrafts		<u>147</u>
Total		6,432

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Source: Department of Trade and Commerce, Ministry of Trade, Industry, and Forests.

ESTIMATED BALANCE OF PAYMENTS WITH COUNTRIES OTHER THAN INDIA, 1981/82  
(US '000)

<u>Receipts</u>		<u>Payments</u>	
<u>Current Account</u>			
1. Merchandise Exports	714	1. Merchandise Imports	3,307
2. Services and Private Transfers	3,005	a) From Free Exchange	1,195
a) Tourism and Stamps	1,388	b) Aid-financed <u>a/</u>	2,112
b) Private Transfers	1,070	2. Services and Private	
c) Diplomatic Expenses of		Transfers	3,922
UNDP and Foreign		a) UN And Other Agencies <u>c/</u>	3,002
Embassies <u>b/</u>	547	b) On Government Account	373
3. Total Current Receipts	3,719	c) Diplomatic Expenses	547
<u>Current Account Balance</u>	<u>-3,510</u>	3. Total Current Payments	7,229
<u>Capital Account</u>			
4. Capital Transfers	6,400	4. Capital Transfers	-
<u>Overall Balance</u>	2,890		
Monetary Movements (- = increase)	-2,890		

a/ 33% of aid receipts are assumed to come in the form of equipment and other imports.

b/ Receipts from the expenditure of foreign missions is assumed to be equal to the Government's expenditure on its missions abroad.

c/ 67% of aid receipts are assumed to be payments for foreign services, but 30% of this is assumed to be spent within the country.

Source: Planning Commission.

DELEGATION OF POWERS ON RE-APPROPRIATION OF FUNDS

<u>Re-appropriation</u>	<u>District Officer</u>	<u>Head of Department</u>	<u>Ministry</u>	<u>Finance Ministry</u>
1. One head to another in the same scheme	Nu 5,000	Nu 10,000	Up to Nu 30,000	Full powers
2. One scheme to another in the same sector	Up to Nu 10,000	Up to Nu 20,000	Up to Nu 50,000	Full powers
3. From one sector to another sector	No powers	No powers	District administration shall forward the proposal to Home Ministry which in turn shall forward with comments to the Ministry controlling the sector from which re-appropriation is to be made. That Ministry, after consulting the head of the department, can approve up to Nu 50,000.	Full powers
4. District Officers/Departments/Ministries shall not re-appropriate funds from maintenance to development and vice versa without the <u>prior</u> approval of the Ministry of Finance.				
5. District Officers/Departments/Ministries shall not re-appropriate funds from budgeted heads/schemes to <u>unbudgeted</u> heads/schemes without the prior approval of the Ministry of Finance.				
6. The Ministry of Finance shall obtain views/comments of the Planning Commission before giving the final approval when re-appropriation involves the following:				
<ul style="list-style-type: none"> <li>a) Surrender of full annual provision of a scheme,</li> <li>b) Inter-sectoral diversion of funds, or</li> <li>c) Introduction of a new scheme which was not included in the annual budget.</li> </ul>				
7. A copy of the sanction order on re-appropriation of funds shall invariably be endorsed to the Budget Bureau, Ministry of Finance, and to the Royal Audit Department.				

Source: Planning Commission.

FOODGRAINS PRODUCTION AND CROP AREAS BY DISTRICT, 1982

	Crop Areas					Gross Production				
	Paddy	Maize	Wheat/ Barley	Buckwheat/ Millets	Total	Paddy	Maize	Wheat/ Barley	Buckwheat/ Millets	Total
	acres					m tons				
<u>Western</u>										
Gasa	225	-	250	370	845	145	-	120	135	400
Ha	175	880	1,415	1,300	3,770	125	350	575	400	1,450
Paro	5,000	2,705	4,200	3,200	15,105	4,700	1,100	1,900	975	8,675
Thimphu	4,150	575	2,800	1,450	8,975	4,000	300	1,525	450	6,275
Punakha	3,550	250	1,725	180	5,705	4,050	125	725	60	4,960
Wangdiphodrang	4,425	225	2,575	900	8,125	4,800	135	1,400	275	6,610
Sub-total	17,525	4,635	12,965	7,400	42,525	17,820	2,010	6,245	2,295	28,370
<u>Central</u>										
Tongsa	1,670	3,080	400	525	5,675	1,150	2,300	165	160	3,775
Bumthang	-	-	2,420	3,750	6,170	-	2	900	1,350	2,252
Dagana	1,450	4,750	350	530	7,080	1,100	2,850	195	180	4,325
Shemgang	2,400	4,530	650	1,100	8,680	1,800	2,350	300	400	4,850
Sub-total	5,520	12,360	3,820	5,905	27,605	4,050	7,502	1,560	2,090	15,202
<u>Eastern</u>										
Lhuntsi	2,410	3,860	750	835	7,855	1,725	2,670	305	290	4,990
Mongar	1,200	8,085	1,150	2,050	12,485	850	6,850	450	800	8,950
Tashigang	7,925	22,060	6,425	5,675	42,085	7,150	19,500	2,750	2,300	31,700
Pema Gatsel	110	5,305	505	1,500	7,420	55	3,550	210	460	4,275
Sub-total	11,645	39,310	8,830	10,060	69,845	9,780	32,570	3,715	3,850	49,915
<u>Southern</u>										
Samchi	14,700	25,510	2,750	4,250	47,210	10,550	7,500	875	900	19,825
Chirang	6,400	18,210	400	2,100	27,110	4,775	9,500	350	750	15,375
Gaylegphug	9,100	25,510	550	6,500	41,660	7,225	11,400	220	2,000	20,845
Samdrup Jongkhar	4,225	14,760	600	2,125	21,710	3,150	10,250	325	425	14,150
Sub-total	34,425	83,990	4,300	14,975	137,690	25,700	38,650	1,770	4,075	70,195
<b>Total</b>	<b>69,115</b>	<b>140,295</b>	<b>29,915</b>	<b>38,340</b>	<b>277,665</b>	<b>58,350</b>	<b>80,732</b>	<b>13,290</b>	<b>12,310</b>	<b>163,682</b>

Source: Planning Commission.

POWER GENERATING CAPACITY

<u>Generating Station</u>	<u>Installed Capacity</u>
<u>Hydroelectric Generating</u>	
Thimphu	4 x 90 KW
Gidakom	5 x 250 KW
Wangdiphodrang	3 x 100 KW
Tashigang	3 x 250 KW
Mongar	3 x 130 KW
Paro	4 x 100 KW
Sub-total	<u>3.450 MW</u>
<u>Diesel Generating Stations</u>	
Phuntsholing	2 x 248 KW
Samchi	1 x 135 KW
Paro	1 x 90 KW 1 x 60 KW
Thimphu	2 x 248 KW 1 x 500 KW 2 x 250 KW 2 x 150 KW
Damphu	1 x 70 KW
Tongsa	1 x 60 KW
Chukha Hydro-power Project	12 x 248 KW 7 x 400 KW 4 x 126 KW
Penden Cement	3 x 830 KW
Gedu Wood Products Factory	2 x 250 KW
Sub-total	<u>12.233 MW</u>
Total	15.683 MW

Note: Excludes some other small captive generating sets used mainly for stand-by purposes.

Source: Department of Power, Ministry of Development.

Annex 7-A

POPULATION DISTRIBUTION BY AGE AND SEX, 1982 (OFFICIAL ESTIMATES)

<u>Age Group</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
0-4	79,567	13.4	78,465	13.8	158,032	13.6
5-9	80,754	13.6	78,440	13.8	159,194	13.7
10-14	71,254	12.0	67,024	11.8	138,278	11.9
15-19	58,191	9.8	58,009	10.2	116,200	10.0
20-24	51,659	8.7	50,597	8.9	102,256	8.8
25-29	45,127	7.6	44,347	7.8	89,474	7.7
30-34	36,221	6.1	33,499	5.9	69,720	6.0
35-39	32,658	5.5	30,090	5.3	62,748	5.4
40-44	29,689	5.0	27,249	4.8	56,938	4.9
45-49	27,314	4.6	23,814	4.2	51,128	4.4
50-54	22,564	3.8	20,430	3.6	42,994	3.7
55-59	17,813	3.0	14,723	2.6	32,536	2.8
60-64	14,845	2.5	14,205	2.5	29,050	2.5
65-69	10,094	1.7	9,660	1.7	19,754	1.7
70+	16,032	2.7	17,666	3.1	33,698	2.9
<b>Total</b>	<b>593,782</b>	<b>100.0</b>	<b>568,218</b>	<b>100.0</b>	<b>1,162,000</b>	<b>100.0</b>

Source: Planning Commission.

POPULATION DISTRIBUTION BY DISTRICTS, 1982 (OFFICIAL ESTIMATES)

<u>District</u>	<u>Population</u>	
	<u>Number</u>	<u>Percentage</u>
Bumthang	23,240	2
Chirang	116,200	10
Dagana	34,860	3
Gasa	11,620	1
Gaylegphug	116,200	10
Ha	11,620	1
Lhuntsi	46,480	4
Mongar	81,340	7
Paro	46,480	4
Pema Gatsel	34,860	3
Samchi	185,920	16
Samdrup Jongkhar	69,720	6
Shemgang	46,480	4
Tashigang	185,920	16
Thimphu <u>a/</u>	81,340	7
Tongsa	23,240	2
Wangdiphodrang	46,480	4
Total	1,162,000	100

a/ Including Punakha.

Source: Planning Commission.

Annex 7-C

POPULATION OF URBAN CENTERS, 1982 (OFFICIAL ESTIMATES)

<u>Name</u>	<u>Population</u>
Thimphu	12,000
Phuntsholing	10,000
Chimakothi	5,000
Samdrup Jongkhar	5,000
Gaylegphug	4,000
Sarbhang	3,500
Tashigang	3,100
Paro	3,000
Samchi	3,000
Wangdiphodrang	2,400
Mongar	2,100
Tongsa	1,270
Punakha	1,100
Bumthang	1,000
Chirang	1,000
Ha	1,000
Sibsoo	1,000
Shemgang	<u>500</u>
Total	59,970

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Source: Central Town Planning Committee,  
Ministry of Development.

Annex 8-A

NUMBER OF STUDENTS IN THE EDUCATION SYSTEM  
(as of April 1982)

<u>Class</u>	<u>Primary Schools</u>	<u>Junior High Schools</u>	<u>Central Schools</u>	<u>Total</u>
Lower Kindergarten	7,300	2,242	149	9,691
Upper Kindergarten	5,438	2,029	208	7,675
I	4,486	1,771	189	6,446
II	3,111	1,623	261	4,995
III	2,177	1,349	279	3,805
IV	1,275	1,141	329	2,745
V	773	960	314	2,047
VI	-	617	333	950
VII	-	403	297	700
VIII	-	374	235	609
IX	-	-	239	239
X	-	-	162	162
XI	-	-	123	123
XII	-	-	103	103
Total	24,560	12,509	3,221	40,290

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Source: Department of Education, Ministry of Development.

SCHOOL ENROLLMENT BY LEVEL OF EDUCATION AND GOVERNMENT CEILINGS  
(as of April 1982)

<u>Level of Education</u>	<u>Actual Enrollment</u>	<u>Government Ceilings</u>
<u>Pre-School Education</u>		
Lower Kindergarten	9,691	Unlimited
Upper Kindergarten	7,675	"
<u>Primary Education</u>		
Class I	6,446	"
Class II	4,995	"
Class III	3,805	"
Class IV	2,745	"
Class V	2,047	"
Sub-total	<u>37,404</u>	
<u>Secondary Education</u>		
Class VI	950	1,500
Class VII	700	1,500
Class VIII	609	1,500
Class IX	239	600
Class X	162	600
Sub-total	<u>2,660</u>	<u>5,700</u>
<u>Junior College</u>		
Class XI	123	300
Class XII	103	300
Sub-total	<u>226</u>	<u>600</u>
Total	40,290	6,300 <u>a/</u>

a/ Secondary and Junior College enrollments only.

Source: Department of Education, Ministry of Development.

PLANNED FLOW OF TRAINED MANPOWER THROUGH THE EDUCATIONAL SYSTEM

	<u>1981-86</u> <u>(Total)</u>	<u>1986 Onwards</u> <u>(per annum)</u>
Intake of Central Schools less those who leave to join Class V-Class VIII school leavers <u>a/</u>	2,566   1,130	600   115
Matriculates less those Matriculates who get technical training <u>b/</u>	1,436	485
Intake of Junior College less who join Matriculates for technical training	847	225
Qualify from Junior College less those who go for higher technical training abroad	596  80	170  20
Increment to higher level trained manpower <u>c/</u>	516	150

a/ These mainly obtain on-the-job training and become skilled and semi-skilled workers and craftsmen.

b/ At the Kharbandi Technical School, Royal Bhutan Polytechnic and Teachers' Training Center. They become teachers, engineers, health assistants, customs officials, etc.

c/ Excludes returnees from training outside Bhutan. The 150 increment in 1986 onwards indicatively comprises 35 engineers, 15 doctors and nurses, 20 agriculturalists and veterinarians, 25 general science graduates, 20 commerce graduates, and 35 humanities graduates.

Source: Planning Commission.

OUTLAYS AND FINANCING OF THE FIRST FOUR PLANS (1961/62-1980/81)

	First Plan (1961/62-1965/66)		Second Plan (1966/67-1970/71)		Third Plan (1971/72-1975/76)		Fourth Plan (1976/77-1980/81)	
	Nu million	Percent	Nu million	Percent	Nu million	Percent	Nu million	Percent
Agriculture	1.9	1.8	21.6	10.7	58.3	12.3	259.0	23.5
Animal Husbandry	1.5	1.4	5.8	2.9	24.2	5.1	61.5	5.6
Forestry	3.2	3.0	6.9	3.4	28.4	6.0	110.3	10.0
Power	1.5	1.4	9.1	4.5	30.1	6.4	50.5	4.6
Industry and Mines	1.1	1.0	1.0	0.5	25.2	5.3	175.0	15.8
Public Works Department	62.9	58.7	70.5	34.9	84.6	17.8	128.3	11.6
Road Transport	7.5	7.0	12.0	5.9	9.5	2.0	-	-
Posts and Telegraphs	0.5	0.5	5.9	2.9	11.4	2.4	16.9	1.5
Telecommunications	-	-	-	-	14.8	3.1	37.3	3.3
Tourism	-	-	-	-	14.1	3.0	12.5	1.1
Education	9.4	8.8	35.7	17.7	90.0	19.0	134.6	12.1
Health	3.2	2.9	16.7	8.3	38.1	8.0	54.6	4.9
Information and Publicity	0.1	0.1	1.4	0.7	4.0	0.8	11.0	1.0
Development Headquarters	3.5	3.3	8.8	4.4	16.3	3.4	34.3	3.1
Ancient Monuments Preservation	-	-	0.6	0.3	2.1	0.4	-	-
Other	10.9	10.1	6.2	2.9	24.1	5.0	20.4	1.9
<b>Total Outlays</b>	<b>107.2</b>	<b>100.0</b>	<b>202.2</b>	<b>100.0</b>	<b>475.2</b>	<b>100.0</b>	<b>1,106.2</b>	<b>100.0</b>
financed by:								
Government of India Grants	107.2	100.0	200.0	98.9	426.6	89.8	853.0	77.1
Assistance from UN and other International Agencies	-	-	-	-	15.8	3.3	193.7	17.5
Internal Resource Mobilization	-	-	2.2	1.1	32.8	6.9	59.5	5.4
<b>Total Financing</b>	<b>107.2</b>	<b>100.0</b>	<b>202.2</b>	<b>100.0</b>	<b>475.2</b>	<b>100.0</b>	<b>1,106.2</b>	<b>100.0</b>

Note: Development outlays include only those activities financed from domestic resources, overseas aid, and Government of India development grants. They therefore exclude development-related expenditure financed directly by Government of India departments and agencies. This comprises mainly expenditure by the Border Roads Organization on transport and communications infrastructure. Outlays also exclude expenditure on the Chukha hydro-power project, which is being undertaken and financed outside the Plans. Chukha-related expenditures amounted to Nu 56.8 million during the Third Plan period and Nu 572.8 million during the Fourth Plan period. Development outlays under the Fourth Plan do, however, include expenditure on the Penden cement plant and the Gaylegphug Area Development Project which was also financed separately by the Government of India and undertaken outside the Plan. Expenditures on those two projects amounted to Nu 185.0 million.

Source: Planning Commission.

ANNUAL PHASING OF PROJECTED FIFTH PLAN EXPENDITURES AND REVENUES, 1981/82-1986/87  
(Nu million)

	<u>1981/82</u>	<u>1982/83</u>	<u>1983/84</u>	<u>1984/85</u>	<u>1985/86</u>	<u>1986/87</u>	<u>Total</u>
Revenue	101	121	141	151	196	232	942
Recurrent Expenditure	<u>157</u>	<u>180</u>	<u>192</u>	<u>201</u>	<u>211</u>	<u>221</u>	<u>1,162</u>
Public Savings	-56	-59	-51	-50	-15	11	-220
Capital Expenditure	<u>208</u>	<u>399</u>	<u>760</u>	<u>760</u>	<u>559</u>	<u>490</u>	<u>3,176</u>
<u>Total Financing Needs</u>	264	458	811	810	574	479	3,396
Committed External Finance:							
Government of India Grants	190	250	240	240	220	200	1,340
Committed International Aid	47	119	157	111	62	25	521
Sub-total	<u>237</u>	<u>369</u>	<u>397</u>	<u>351</u>	<u>282</u>	<u>225</u>	<u>1,861</u>
Internal Borrowings	<u>27</u>	<u>20</u>	<u>73</u>	<u>60</u>	<u>20</u>	<u>-</u>	<u>200</u>
<u>Total Financing Available</u>	264	389	470	411	302	225	2,061
Financing Gap	-	69	341	399	272	254	1,335

Note: As these projections were prepared in early 1982, they differ from figures used elsewhere in this report which reflect more recent projections and the estimated actual budgetary outturns.

Source: Planning Commission.

REVENUE PROJECTIONS FOR THE FIFTH PLAN, 1981/82-1986/87  
(Nu million)

	<u>1981/82</u>	<u>1982/83</u>	<u>1983/84</u>	<u>1984/85</u>	<u>1985/86</u>	<u>1986/87</u>	<u>Total</u>
<u>Tax Revenue</u>							
Direct Taxes	<u>23.2</u>	<u>40.7</u>	<u>52.0</u>	<u>57.3</u>	<u>71.0</u>	<u>86.1</u>	<u>330.3</u>
Existing	<u>23.2</u>	<u>23.3</u>	<u>31.1</u>	<u>34.5</u>	<u>42.2</u>	<u>49.7</u>	<u>204.0</u>
New	-	<u>17.4</u>	<u>20.9</u>	<u>22.8</u>	<u>28.8</u>	<u>36.4</u>	<u>126.3</u>
Indirect Taxes	<u>46.3</u>	<u>52.0</u>	<u>54.3</u>	<u>56.7</u>	<u>58.2</u>	<u>59.6</u>	<u>327.1</u>
Existing	<u>46.3</u>	<u>52.0</u>	<u>54.3</u>	<u>56.7</u>	<u>58.2</u>	<u>59.6</u>	<u>327.1</u>
New	-	-	-	-	-	-	-
Sub-total	<u>69.5</u>	<u>92.7</u>	<u>106.3</u>	<u>114.0</u>	<u>129.2</u>	<u>145.7</u>	<u>657.4</u>
 <u>Non-Tax Revenue</u>							
Earnings of Existing Service Departments	12.8	8.4	8.7	9.0	9.3	9.7	57.9
Dividends/Profits from Commercial and Industrial Undertakings							
Existing	18.8	20.2	25.0	25.9	29.9	34.2	154.0
New	-	0.1	0.8	2.0	28.1	42.1	73.1
Sub-total	<u>31.6</u>	<u>28.7</u>	<u>34.5</u>	<u>36.9</u>	<u>67.3</u>	<u>86.0</u>	<u>285.0</u>
Total Revenue	101.1	121.4	140.8	150.9	196.5	231.7	942.4

Note: As these projections were prepared in early 1982, they differ from figures used elsewhere in this report which reflect more recent projections and the estimated actual budgetary outturns.

Source: Planning Commission.

COMPOSITION AND GROWTH OF GDP, 1980/81-1986/87  
(in Nu million, constant 1980/81 market prices)

	<u>1980/81</u>		<u>1986/87</u>		<u>Average Annual Growth Rate</u>
	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	
<u>Agriculture and Related Activities</u>	645.2	63.2	1,007.0	60.2	7.7
Agriculture	409.4	40.1	796.0	47.6	11.7
Animal Husbandry	76.5	7.5	106.0	6.3	5.6
Forests	159.3	15.6	105.0	6.3	-5.0
<u>Industry</u>	63.5	6.3	292.4	17.5	29.0
Manufacturing and Mining	41.9	4.1	146.0	8.8	23.1
Construction	18.9	1.9	25.4	1.5	4.4
Power	2.7	0.3	121.0	7.2	88.5
<u>Services</u>	311.8	30.5	373.8	22.3	3.1
Tourism	11.0	1.1	22.0	1.3	12.3
Communications	5.8	0.6	9.0	0.5	7.6
Transport	27.6	2.7	37.0	2.2	5.0
Financial Institutions	15.4	1.5	27.3	1.6	10.0
Trade	28.6	2.8	59.0	3.6	12.8
Social Services and Public Administration	141.4	13.8	127.0	7.6	-1.6
Rental and Other Services	82.0	8.0	92.5	5.5	2.0
Total GDP	1,070.5	100.0	1,673.2	100.0	8.5

Source: Planning Commission.

OUTLAY AND SOURCES OF FINANCE: AGRICULTURE SECTOR, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
1. Land Development	5.457	-	5.457	-	5.457
2. Multiplication and Supply of Improved Seeds/Seedlings	6.412	-	6.412	-	6.412
3. Plant Protection Services	28.000	-	28.000	27.000	1.000
4. Farm Mechanization	39.000	-	39.000	37.000	2.000
5. Soil Fertility Development	6.500	-	6.500	-	6.500
6. Rural Credit Scheme	10.000	-	10.000	8.208	1.792
7. Strengthening of Extension Network	1.300	-	1.300	-	1.300
8. Food Processing	2.610	-	2.610	-	2.610
9. Agriculture Research Information and Training	6.627	-	6.627	1.800	4.827
10. Potato Development	19.400	-	19.400	18.900	0.500
11. Intensive Area Development Program	51.752	-	51.752	22.500	29.252
12. Establishment	0.900	33.112	34.012	6.025	27.987
<b>Total</b>	<b>177.958</b>	<b>33.112</b>	<b>211.070</b>	<b>121.433</b>	<b>89.637</b>

Source: Planning Commission.

OUTLAY AND SOURCES OF FINANCE: IRRIGATION SECTOR, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
1. Construction of New Irrigation Channels	99.118	-	99.118	27.361	71.575
2. Renovation of Existing Channels	38.535	-	38.535	28.917	9.618
3. Maintenance of Existing Channels	2.302	0.472	2.774	2.302	0.472
4. Bank Protection Works	14.793	-	14.793	4.500	10.293
5. Feeder Roads	15.779	-	15.779	6.357	9.422
6. Training	1.812	-	1.812	1.812	-
7. Gaylegphug-Sarbhag Area Development Project	15.000	-	15.000	-	15.000
8. Establishment	11.980	8.494	20.474	5.612	14.862
Total	199.319	8.966	208.285	76.861	131.424

Source: Planning Commission.

OUTLAY AND SOURCES OF FINANCE: FOOD CORPORATION OF BHUTAN, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
<u>A. Regular Programs</u>					
1. Godowns and Depots	7.000	-	7.000	-	7.000
2. Horticulture Project	26.752	-	26.752	23.172	3.580
3. Cold Storage and Power House	4.767	-	4.767	4.500	0.267
4. Establishment	5.790	31.176	36.966	-	36.966
Sub-total	44.309	31.176	75.485	27.672	47.813
<u>B. Additional Projects</u>					
1. Regulated Market	2.728	-	2.728	-	2.728
2. Buffer Stock and Price Stabilization	32.327	-	32.327	-	32.327
Sub-total	35.055	-	35.055	-	35.055
Total	79.364	31.176	110.540	27.672	82.868

Source: Planning Commission.

Annex 11-B

OUTLAY AND SOURCES OF FINANCE: ANIMAL HUSBANDRY SECTOR, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
1. Cattle Development	9.600	14.060	23.660	0.945	22.715
2. Dairy Development	1.440	2.460	3.900	-	3.900
3. Poultry Development	4.400	8.230	12.630	0.900	11.730
4. Piggery Development	2.050	3.080	5.130	0.900	4.230
5. Sheep and Yak Development	1.620	2.110	3.730	-	3.730
6. Equine Development	0.680	0.640	1.320	0.450	0.870
7. Fishery Development	3.000	2.500	5.500	2.107	3.393
8. Pasture Development	8.460	2.090	10.550	5.625	4.925
9. Animal Health Coverage	16.500	18.190	34.690	9.062	25.628
10. Extension Services	6.330	7.880	14.210	0.765	13.445
11. Direction	1.280	5.530	6.810	-	6.810
Total	55.360	66.770	122.130	20.754	101.376

Source: Planning Commission.

OUTLAY AND SOURCES OF FINANCE: FORESTRY SECTOR, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
<b>A. <u>Regular Programs</u></b>					
1. Survey, Demarcation, and Management Plans	9.330	0.108	9.438	0.675	8.763
2. Afforestation	5.624	2.019	7.643	4.564	3.079
3. Wild Life Management	0.100	2.487	2.587	-	2.587
4. Fire Protection	-	0.631	0.631	-	0.631
5. Logging Roads and Paths	16.000	1.076	17.076	-	17.076
6. Tashila Ropeway	4.258	-	4.258	0.900	3.358
7. Training/Study Tours	5.933	-	5.933	3.285	2.648
8. Establishment Expenses	10.943	38.531	49.474	13.606	35.868
Sub-total	52.188	44.852	97.040	23.030	74.010
<b>B. <u>Investment</u></b>					
1. Gedu Veneer Project (Integrated Wood Industry)	108.093	-	108.093	23.823	84.270
2. Graded Particleboard	56.301	-	56.301	-	56.301
3. Logging	21.134	-	21.134	1.800	19.334
4. Feasibility Studies	0.132	-	0.132	0.132	-
Sub-total	185.660	-	185.660	25.755	159.905
<b>Total</b>	237.848	44.852	282.700	48.785	233.915

Source: Planning Commission.

OUTLAY AND SOURCES OF FINANCE: INDUSTRIES AND MINES SECTOR, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
<b>A. <u>Regular Programs</u></b>					
1. Industrial Estates	1.225	0.195	1.420	-	1.420
2. Training	6.638	-	6.638	4.893	1.745
3. Feasibility Studies and Reports	6.035	-	6.035	-	6.035
4. Geological Survey of Bhutan	10.000	8.482	18.482	-	18.482
5. Establishment Expenses	5.577	7.763	13.340	-	13.340
Sub-total	29.475	16.440	45.915	4.893	41.022
<b>B. <u>Investment</u></b>					
1. Graphite Mining and Benefication	10.000	-	10.000	-	10.000
2. Slate Mining and Processing	3.600	-	3.600	1.637	1.963
3. Calcium Carbide	95.000	-	95.000	-	95.000
4. Polythene (HDPE) Industry	7.160	-	7.160	2.610	4.550
5. Nanglam Cement Plant	516.000	-	516.000	-	516.000
6. Gypsum Mining	5.000	-	5.000	0.618	4.382
7. Cottage and Small Industries	22.181	-	22.181	1.692	20.489
8. Others	3.555	-	3.555	0.405	3.150
Sub-total	662.496	-	662.496	6.962	655.534
<b>Total</b>	<b>691.971</b>	<b>16.440</b>	<b>708.411</b>	<b>11.855</b>	<b>696.556</b>

Source: Planning Commission.

OUTLAY AND SOURCES OF FINANCE: POWER SECTOR, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
<u>A. Regular Programs</u>					
1. Surveys and Feasibility Studies	36.375	-	36.375	2.700	33.675
2. Diesel Generating Sets and Energy Meters	4.200	-	4.200	1.939	2.261
3. Urban Electrification	7.500	-	7.500	-	7.500
4. Rural Electrification	5.000	-	5.000	-	5.000
5. Establishment	18.314	16.036	34.350	2.830	31.520
Sub-total	<u>71.389</u>	<u>16.036</u>	<u>87.425</u>	<u>7.469</u>	<u>79.956</u>
<u>B. Investment</u>					
1. Generation	409.000	-	409.000	-	409.000
2. Transmission and Distribution	218.600	-	218.600	-	218.600
Sub-total	<u>627.600</u>	<u>-</u>	<u>627.600</u>	<u>-</u>	<u>627.600</u>
Total	698.989	16.036	715.025	7.469	707.556

Source: Planning Commission.

Annex 11-F

OUTLAY AND SOURCES OF FINANCE: ROADS AND BRIDGES SECTOR, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
1. Roads	209.260	29.686	238.946	27.542	211.404
2. Machinery	26.000	-	26.000	-	26.000
3. Black-topping of East-West Highway through BRO	105.000	-	105.000	-	105.000
4. Suspension Bridges	26.214	1.178	27.392	8.559	18.833
5. Mule Tracks	0.400	1.405	1.805	-	1.805
6. Training	4.800	-	4.800	-	4.800
7. Establishment	3.100	52.126	55.226	-	55.226
Total	374.774	84.395	459.169	36.101	423.068

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Source: Planning Commission.

OUTLAY AND SOURCES OF FINANCE: COMMUNICATIONS SECTOR, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
1. Postal Services and Expansion	0.801	13.320	14.121	0.926	13.195
2. Construction of New G.P.O. Building in Thimphu	3.600	-	3.600	-	3.600
3. Philatelic Services	1.000	1.416	2.416	-	2.416
4. Telegraph Services	0.120	1.995	2.115	-	2.115
5. New Wireless Stations and Equipment Standardization	3.352	-	3.352	-	3.352
6. Taking Over of Telephone Exchanges	11.613	-	11.613	-	11.613
7. Expansion of Existing Telephone Exchanges	6.757	-	6.757	-	6.757
8. Installation of Telex Exchanges	6.114	-	6.114	-	6.114
9. Training	1.484	-	1.484	0.317	1.167
10. Establishment	3.332	30.096	33.428	-	33.428
11. Information and Publicity	9.500	5.500	15.000	5.644	9.356
12. Broadcasting	3.412	3.198	6.610	1.610	5.000
Total	51.085	55.525	106.610	8.497	98.113

Source: Planning Commission.

OUTLAY AND SOURCES OF FINANCE: EDUCATION SECTOR, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
1. Primary Education	39.720	54.470	94.190	1.080	93.110
2. Secondary Education	28.400	72.770	101.170	-	101.170
3. Higher Education	15.680	11.460	27.140	2.700	24.440
4. Teacher Education	20.950	7.290	28.240	16.970	11.270
5. Technical and Commercial Education	13.250	17.000	30.250	2.030	28.220
6. School of Fine Arts and Sculpture	-	1.580	1.580	-	1.580
7. Buddhist and Monastic Studies and Rigney School	1.290	3.310	4.600	-	4.600
8. Directorate of Education	9.340	41.310	50.650	0.270	50.380
9. National Education Policy	2.180	-	2.180	-	2.180
Total	130.810	209.190	340.000	23.050	316.950

Source: Planning Commission.

OUTLAY AND SOURCES OF FINANCE: HEALTH SECTOR, 1981/82-1986/87  
(Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
1. Hospitals	36.898	62.677	99.575	3.441	96.134
2. Dispensaries and Basic Health Units	7.580	22.045	29.625	1.035	28.590
3. Health School	3.616	2.830	6.446	1.826	4.620
4. Immunization Program	0.375	1.730	2.105	0.675	1.430
5. Pediatric Services	3.625	-	3.625	-	3.625
6. Primary Health Care	5.175	-	5.175	5.175	-
7. Family Welfare Program	14.537	1.765	16.302	14.537	1.765
8. Malaria Eradication Program	-	7.913	7.913	-	7.913
9. Leprosy Control Program	0.973	0.675	1.648	-	1.648
10. T.B. Control Program	-	0.735	0.735	-	0.735
11. General Establishment	1.806	10.360	12.166	0.135	12.031
Total	74.585	110.730	185.315	26.824	158.491

Source: Planning Commission.

OUTLAY AND SOURCES OF FINANCE: URBAN DEVELOPMENT, SANITATION, AND WATER  
SUPPLY SECTOR, 1981/82-1986/87  
 (Nu million)

<u>Program</u>	<u>Fifth Plan Outlay</u>			<u>Sources of Finance</u>	
	<u>Capital</u>	<u>Recurrent</u>	<u>Total</u>	<u>Committed International Assistance</u>	<u>Required Internal/External Support</u>
<b>A. <u>Regular Programs</u></b>					
1. Urban Water Supply Schemes	5.832	-	5.832	-	5.832
2. Rural Water Supply Schemes	51.000	-	51.000	23.895	27.105
3. Urban Development	14.168	-	14.168	-	14.168
4. Low-cost Housing	2.996	-	2.996	2.996	-
5. Establishment	1.165	2.500	3.665	1.165	2.500
Sub-total	75.161	2.500	77.661	28.056	49.605
<b>B. <u>Additional Programs under International Water and Sanitation Decade</u></b>					
1. Augmentation of Water Supply	11.550	-	11.550	-	11.550
2. Solid Waste Disposal	2.330	-	2.300	-	2.300
3. Sewerage Schemes	41.000	-	41.000	-	41.000
4. Village and School Sanitation	12.500	-	12.500	-	12.500
Sub-total	67.350	-	67.350	-	67.350
<b>Total</b>	142.511	2.500	145.011	28.056	116.955

Source: Planning Commission.



STATISTICAL APPENDIX

- Table 1: Assets and Liabilities of the Bank of Bhutan, 1977-82  
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Table 1: ASSETS AND LIABILITIES OF THE BANK OF BHUTAN, 1977-82  
(Nu million, end-December)

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	
Cash in Hand <u>a/</u>	<u>1.2</u>	<u>1.3</u>	<u>0.6</u>	<u>1.9</u>	<u>0.9</u>	<u>1.1</u>	
Foreign Assets	<u>92.1</u>	<u>117.3</u>	<u>150.1</u>	<u>169.1</u>	<u>243.9</u>	<u>307.8</u>	
Indian Currency	<u>0.5</u>	<u>1.2</u>	<u>1.1</u>	<u>1.8</u>	<u>1.5</u>	<u>1.3</u>	
Rupee Deposits	{	76.5	138.0	130.7	193.9	239.5	
Other Foreign Exchange Deposits	{ 87.3	{	26.4	4.1	19.0	38.2	44.2
Loans and Bills Discounted Outside Bhutan	4.3	13.2	6.9	17.6	10.3	22.8	
Advances	<u>29.6</u>	<u>41.2</u>	<u>54.2</u>	<u>85.0</u>	<u>79.9</u>	<u>103.8</u>	
Loans <u>b/</u>	<u>23.2</u>	<u>32.7</u>	<u>47.6</u>	<u>75.5</u>	<u>65.8</u>	<u>85.7</u>	
Bills Discounted in Bhutan	6.4	8.5	6.6	9.5	14.1	18.1	
Other	<u>3.3</u>	<u>4.7</u>	<u>4.2</u>	<u>5.6</u>	<u>7.0</u>	<u>21.5</u>	
Assets = Liabilities	<u>126.2</u>	<u>164.5</u>	<u>209.1</u>	<u>261.6</u>	<u>331.7</u>	<u>434.2</u>	
Capital and Reserves	<u>18.5</u>	<u>27.1</u>	<u>37.0</u>	<u>55.2</u>	<u>82.2</u>	<u>75.9</u>	
Foreign Liabilities <u>c/</u>	<u>0.3</u>	<u>0.4</u>	<u>18.3</u>	<u>43.4</u>	<u>26.9</u>	<u>44.5</u>	
Deposits and Other Accounts	<u>90.2</u>	<u>126.3</u>	<u>147.5</u>	<u>154.6</u>	<u>214.5</u>	<u>298.8</u>	
Current <u>d/</u>	<u>58.7</u>	<u>76.4</u>	<u>92.0</u>	<u>94.8</u>	<u>130.3</u>	<u>169.2</u>	
Savings	10.2	14.6	19.1	23.5	24.0	30.8	
Fixed	21.3	34.2	35.0	34.6	58.4	97.8	
Special <u>e/</u>	-	1.1	1.4	1.7	1.8	1.8	
Other	<u>17.2</u>	<u>10.7</u>	<u>6.3</u>	<u>8.4</u>	<u>8.1</u>	<u>15.0</u>	

a/ Excluding holdings of Indian rupees.

b/ Excluding bad and doubtful debts.

c/ Includes transactions with the State Bank of India pending adjustment and bills payable outside Bhutan.

d/ Includes contingency and other accounts.

e/ Special deposits are Government foreign exchange deposits intended to provide backing for the issue of Ngultrum currency.

Source: Bank of Bhutan.

Table 2: DISTRIBUTION OF BANK OF BHUTAN ADVANCES, 1977-82  
(Nu million, end-December)

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Industry	3.1	4.2	7.5	14.7	13.6	29.7
Trade and Commerce	13.0	20.4	29.9	49.0	37.8	35.9
Transport	4.1	3.4	3.9	4.3	5.1	4.9
Agriculture	1.4	1.4	1.8	1.8	1.6	1.8
Building and Construction	1.1	1.4	1.8	3.0	4.6	4.5
Personal and Other <u>a/</u>	<u>3.3</u>	<u>4.7</u>	<u>5.5</u>	<u>10.6</u>	<u>11.0</u>	<u>15.4</u>
Total	26.0	35.5	50.4	83.4	73.7	92.2

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a/ Including public welfare loans.

Source: Bank of Bhutan.

Table 3: ROYAL INSURANCE CORPORATION OF BHUTAN - SOURCES AND USES OF FUNDS, 1975-82  
(Nu million, end-December)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
<u>Sources of Funds</u>								
Paid-up Capital	1.00	1.00	1.00	1.00	1.00	1.00	12.00	12.00
Reserves	0.31	0.88	1.52	2.39	3.29	4.62	1.77	3.72
Life Insurance Fund	0.04	0.16	0.49	0.79	1.27	2.06	2.66	3.36
Other Insurance Funds	0.12	0.16	0.10	0.28	0.33	0.64	1.21	2.77
Reserves Held on Account of Reinsurance	<u>0.35</u>	<u>0.34</u>	<u>0.42</u>	<u>0.42</u>	<u>0.39</u>	<u>0.43</u>	<u>0.57</u>	<u>0.54</u>
Total Sources	1.82	2.54	3.53	4.88	6.28	8.75	18.21	22.39
<u>Uses of Funds</u>								
Real Estate	0.40	0.40	0.67	0.65	0.64	0.62	0.61	0.59
Mortgage Loans	0.79	1.94	1.81	1.85	1.86	4.21	5.42	6.03
Truck Loans	-	-	-	-	0.37	0.60	0.70	0.52 a/
Investment in Shares	-	-	-	-	-	-	0.35	0.94
Cash and Bank Deposits	<u>0.86</u>	<u>0.56</u>	<u>1.11</u>	<u>2.53</u>	<u>3.87</u>	<u>2.65</u>	<u>11.48</u>	<u>13.85</u>
Total Investments	2.05	2.90	3.59	5.03	6.74	8.08	18.56	21.93

a/ Including Nu 0.07 million in other loans.

Note: Sources and uses of funds differ marginally for most years due to short-term inflows and outflows in transit.

Source: Royal Insurance Corporation of Bhutan.

**Table 4: GOVERNMENT EMPLOYEES PROVIDENT FUND - SOURCES AND USES OF FUNDS, 1976/77-1981/82**  
(Nu million, end-March)

	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
<u>Sources of Funds</u>						
(cumulative)						
Gross Contributions <u>a/</u>	7.40	15.42	25.21	35.54	46.40	58.47
Gross Earnings	0.29	1.50	4.27	8.01	13.08	20.84
Gross Funds Available	7.69	16.92	29.48	43.55	59.48	79.31
less:						
Payments to Members	0.06	0.41	1.38	3.14	5.16	7.83
Management Expenses	0.15	0.40	0.89	1.53	2.27	3.56
Net Funds Available for Investment	<u>7.48</u>	<u>16.11</u>	<u>27.21</u>	<u>38.88</u>	<u>52.05</u>	<u>67.92</u>
<u>Uses of Funds</u>						
Real Estate	0.19	4.57	5.90	6.64	9.62	9.75
Mortgage Loans	0.73	3.26	4.52	4.52	8.71	14.20
Government-guaranteed Loans	1.43	2.20	5.51	24.11	22.74	20.37
Truck Loans	0.98	2.19	2.40	1.83	7.00	8.60
Investment in Shares	-	-	0.10	0.10	2.50	4.27
Cash and Bank Deposits	3.51	3.57	8.13	2.36	3.21	10.67
Total Uses	<u>6.84</u>	<u>15.79</u>	<u>26.56</u>	<u>39.56</u>	<u>53.78</u>	<u>67.86</u>

a/ 50% by employees and 50% by employers.

Note: Sources and uses of funds differ marginally for most years due to short-term inflows and outflows in transit.

Source: Royal Insurance Corporation of Bhutan.

Table 5: UNIT TRUST OF BHUTAN - SOURCES AND USES OF FUNDS, 1980-82  
(Nu million, end-year)

	<u>1980</u> <u>a/</u>	<u>1981</u>	<u>1982</u>
<u>Sources of Funds</u>			
Initial Capital	2.50	2.50	2.50
Unit Shares	0.06	2.64	4.96
Reinvestment Plan	-	neg.	0.14
Fixed-term Units	1.54	4.76	7.20
Recurring Deposit Scheme	<u>neg.</u>	<u>0.23</u>	<u>0.49</u>
Total Sources	<u>4.10</u>	<u>10.13</u>	<u>15.29</u>
<u>Uses of Funds</u>			
Investment in Shares	-	-	0.57
Mortgage Loans	0.61	3.10	4.81
Truck Loans	0.38	1.05	0.50
Government-guaranteed Loans	-	1.91	-
Hypothecation Loans	-	-	0.39
Cash Loans	-	-	0.20
Personal Loans	-	-	0.34
Loans against Units	-	0.42	0.13
Cash and Bank Deposits	<u>3.00</u>	<u>4.04</u>	<u>9.32</u>
Total Uses	<u>3.99</u>	<u>10.52</u>	<u>16.26</u>

a/ UTB began operations on July 27, 1980.

Note: Sources of funds exclude net profits which were reinvested in 1981 and 1982. Sources and uses of funds are also not equal because of short-term funds in transit.

Source: Royal Insurance Corporation of Bhutan.

Table 6: CONSUMER PRICE INDEX, 1977/78-1981/82

<u>Items</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>	<u>Average Annual Rate of Increase</u>
Cereals	100	109.25	115.99	128.66	144.93	11.23
Pulses	100	106.48	114.98	123.04	139.41	9.85
Vegetables	100	118.77	135.44	133.27	168.68	17.17
Fruits	100	105.30	112.60	122.65	131.59	7.90
Spices	100	107.28	114.55	125.34	132.53	8.13
Edible Oils and Fats	100	110.15	126.92	137.76	149.36	12.34
Milk and Milk Products	100	119.53	128.11	144.96	155.31	13.83
Other Food and Intoxicants	100	108.89	127.64	148.79	156.90	14.23
Fuel and Light	100	123.32	179.68	196.11	196.26	24.57
Clothing and Footwear	100	107.07	114.43	122.44	129.56	7.39
Stationery	100	111.97	125.72	133.71	147.20	11.80
Furniture and Utensils	100	120.50	125.46	140.63	174.73	18.68
Miscellaneous Goods and Services	100	108.58	132.07	154.23	170.20	17.55
Average	100	112.09	127.19	139.35	153.74	13.44

Source: Central Statistical Organization, Planning Commission.

Table 7: FOREIGN EXCHANGE RESERVES, 1977/78-1981/82 a/  
(end-March)

	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
	(Rupees million)				
<u>Indian Rupee Reserves</u> <u>b/</u>					
Deposits with State Bank of India	86.7	131.2	129.2	169.7	199.5
Working Overdraft from State Bank of India	<u>-8.0</u>	<u>-18.4</u>	<u>-27.6</u>	<u>-37.6</u>	<u>-31.7</u>
Net Rupee Holdings	78.7	112.8	101.6	132.1	167.8
	(US\$ million equivalent)				
Net Rupee Holdings	9.54	13.84	12.40	16.13	17.95
<u>Other Reserves</u> <u>c/</u>					
Government	1.02	1.82	2.53	3.15	3.34 <u>d/</u>
Bank of Bhutan	0.17	0.24	0.66	2.31	4.12
Other <u>e/</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>0.29</u>
Total	1.19	2.06	3.19	5.46	7.75
Total Foreign Exchange Reserves	10.73	15.90	15.59	21.59	25.70

a/ Excluding holdings of gold. Throughout the period, gold holdings amounted to 3,104 ounces.

b/ Held by Bank of Bhutan.

c/ Comprises hard currencies. Excludes holdings of Indian currency and bills payable outside Bhutan.

d/ Includes reserve position in the IMF of SDR 0.37 million.

e/ Comprises foreign exchange held by the Royal Insurance Corporation of Bhutan and the Unit Trust of Bhutan.

Source: Government of Bhutan.

Table 8: BANK OF BHUTAN INTEREST RATES  
(as of October 1982)

<u>Deposit Rates</u>	<u>Percent per Annum</u>
Savings Accounts	5.0
Fixed Deposits	
91 days to less than 6 months	5.5
6 months to less than 9 months	6.0
9 months to less than 1 year	7.0
1 year	8.0
For more than 1 year up to 2 years	8.5
For more than 2 years up to 3 years	9.0
For more than 3 years up to 5 years	9.5
For more than 5 years	10.0
<u>Lending Rates</u>	
General loans for trade, business, transportation, construction, purchase of gold and for fixed-term loans	15.0
Purchase of trucks for commercial purposes	14.5
Projects approved by National Commission for the Development of Trade and Industry	13.0
Loans against Government guarantee	12.5
Public welfare loans, Government employee loans (Classes I and II), loans to Dairy and Agricultural Development Corporation	10.0
Loans for purchase of motor vehicles by Government employees	7.0 up to Nu 25,000; 10.0% above
Loans to Government employees (Classes III and IV)	4.0
Loans to Bank of Bhutan employees for house construction	2.5
Loans to Bank of Bhutan employees to purchase motor vehicle	Free of interest up to Nu 25,000; 10% above
Loans against fixed-term deposits	2 percentage points above applicable fixed- term deposit rate.

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Source: Bank of Bhutan.

Table 9: MONETARY SURVEY, 1977/78-1981/82 a/  
(Nu million, end-March)

	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
Net Foreign Assets	<u>88.5</u>	<u>129.2</u>	<u>126.5</u>	<u>179.5</u>	<u>240.2</u>
Rupee <u>b/</u>	<u>78.7</u>	<u>112.8</u>	<u>101.6</u>	<u>132.1</u>	<u>167.8</u>
Other	9.8	16.4	24.9	47.4	72.4
Domestic Credit	<u>-44.0</u>	<u>-38.3</u>	<u>-26.2</u>	<u>-25.3</u>	<u>-32.8</u>
Claims on Private Sector <u>c/</u>	15.4	23.7	32.9	28.3	45.9
Claims on Public Enterprises <u>c/</u>	12.0	18.4	25.5	46.0	39.1
Claims on Government (net) <u>d/</u>	-71.4	-80.4	-84.6	-99.6	-117.8
Other Items (net) <u>e/</u>	<u>-1.3</u>	<u>-33.2</u>	<u>-20.3</u>	<u>-48.5</u>	<u>-61.9</u>
Total Liquidity	<u>43.2</u>	<u>57.7</u>	<u>80.0</u>	<u>105.7</u>	<u>145.5</u>
Money Supply <u>f/</u>	<u>22.2</u>	<u>18.5</u>	<u>39.7</u>	<u>46.8</u>	<u>50.2</u>
Quasi-money	21.0	39.2	40.3	58.9	95.3

a/ The monetary survey consolidates the Government's monetary operations of currency issue and foreign exchange holdings with the Bank of Bhutan's balance sheet.

b/ Excluding rupees in circulation.

c/ Data before 1982 are IMF staff estimates.

d/ Including contra-entry to Government's holdings of foreign assets.

e/ Movements largely reflect accumulation of net bank earnings.

f/ Excluding rupees in circulation, but including Nu 6.2 million currency issue.

Source: IMF.

Table 10: GOVERNMENT RECEIPTS, 1976/77-1981/82  
(Nu million)

<u>Source of Revenue</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>Revised Estimates 1981/82</u>
<b>A. Tax Revenue</b>	<u>39.5</u>	<u>45.3</u>	<u>48.8</u>	<u>51.5</u>	<u>52.8</u>	<u>59.7</u>
1. <u>Direct Taxes</u>	<u>5.8</u>	<u>7.6</u>	<u>9.7</u>	<u>9.5</u>	<u>10.1</u>	<u>13.9</u>
Income Tax	1.1	1.2	1.8	1.7	2.1	3.9
Land Tax	1.1	1.2	1.0	1.4	1.2	1.3
Others	3.6	5.2	6.9	6.4	6.8	8.7
2. <u>Indirect Taxes</u>	<u>33.7</u>	<u>37.7</u>	<u>39.1</u>	<u>42.0</u>	<u>42.7</u>	<u>45.8</u>
Excise Duty	6.0	9.0	9.7	11.5	13.4	14.0
Sales Tax	2.7	3.7	4.4	5.5	4.3	6.8
Excise Refund from the Government of India	25.0	25.0	25.0	25.0	25.0	25.0
<b>B. Non-Tax Revenue</b>	<u>5.8</u>	<u>10.0</u>	<u>11.5</u>	<u>12.1</u>	<u>14.1</u>	<u>9.7</u>
1. Royalty from Forests	3.6	7.8	8.0	9.0	9.5	2.6
2. Royalty from Mines and Minerals	0.4	0.6	0.5	0.7	1.0	2.3
3. Registration and License Fees	1.8	1.6	3.0	2.4	3.6	4.8
Total Revenue	45.3	55.3	60.3	63.6	66.9	69.4
<b>C. Receipts from Government Departments</b>	<u>30.8</u>	<u>31.5</u>	<u>32.8</u>	<u>30.6</u>	<u>34.8</u>	<u>31.7</u>
Total Receipts	76.1	86.8	93.1	94.2	101.7	101.1

Source: Ministry of Finance.

Table 11: GOVERNMENT CURRENT EXPENDITURES, 1976/77-1981/82  
(Nu million)

	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>Revised Estimates 1981/82</u>
<u>General Public Services</u>	57.2	50.4	71.2	83.3	89.4	61.2
Development Headquarters <u>a/</u>	3.6	3.3	4.3	4.9	4.5	5.1
Information <u>b/</u>	1.4	1.0	0.8	0.9	1.1	0.9
Other Non-development Sectors <u>c/</u>	52.2	46.1	66.1	77.5	83.8	55.2
<u>Economic Services</u>	24.7	28.2	33.6	39.7	41.3	64.7
Agriculture	4.4	5.4	7.4	9.1	9.2	6.4
Irrigation	0.7	0.7	1.5	1.5	1.8	2.1
Food Corporation of Bhutan	0.7	0.9	1.1	1.5	1.5	1.6
Animal Husbandry	3.7	3.7	4.2	5.0	5.6	7.2
Forests	3.9	4.2	4.3	4.9	4.8	5.5
Industries, Mines, Trade and Commerce	1.5	1.6	2.6	3.7	3.7	4.7
Tourism	-	-	-	-	-	7.4
Public Works Department	4.4	5.4	6.1	6.9	6.6	8.4
Civil Wireless Telephones, Posts and Telegraphs	4.4	4.9	5.1	5.4	5.8	20.0
Power	1.0	1.4	1.3	1.7	2.3	1.4
<u>Social Services</u>	20.2	23.3	28.6	32.2	38.8	43.8
Education	13.1	14.6	19.2	21.6	26.0	28.6
Health	6.7	8.3	9.0	10.2	12.4	14.9
Urban Development	0.4	0.4	0.4	0.4	0.4	0.3
<b>Total Current Expenditures</b>	<b>102.1</b>	<b>101.9</b>	<b>133.4</b>	<b>155.2</b>	<b>169.5</b>	<b>169.7</b>

a/ Under Ministry of Development.

b/ Includes Information and Publicity, and Government Presses.

c/ Includes Royal Secretariat, Ministry of Finance, Ministry of Foreign Affairs, and Ministry of Home Affairs.

Source: Ministry of Finance.

Table 12: GOVERNMENT CAPITAL EXPENDITURES, 1976/77-1981/82  
(Nu million)

	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>Revised Estimates 1981/82</u>
<u>General Public Services</u>	<u>16.9</u>	<u>14.8</u>	<u>19.5</u>	<u>24.2</u>	<u>25.6</u>	<u>42.3</u>
Development Headquarters <u>a/</u>	3.0	2.6	2.4	3.9	3.4	2.3
Information <u>b/</u>	0.6	0.2	0.6	0.9	1.3	3.5
Other Non-development Sectors <u>c/</u>	13.3	12.0	16.5	19.4	20.9	36.5
<u>Economic Services</u>	<u>64.8</u>	<u>63.7</u>	<u>62.4</u>	<u>64.1</u>	<u>58.3</u>	<u>191.6</u>
<u>Agriculture</u>	<u>17.7</u>	<u>12.3</u>	<u>10.7</u>	<u>10.5</u>	<u>9.9</u>	<u>17.6</u>
Irrigation	3.8	5.4	6.5	6.5	3.8	31.3
Food Corporation of Bhutan	1.0	1.1	1.5	1.0	1.5	5.0
Animal Husbandry	2.8	4.3	2.8	2.7	3.4	10.6
Forests	7.4	7.1	5.3	4.9	4.6	29.4
Industries, Mines, Trade and Commerce	4.5	3.7	3.6	3.6	3.4	8.6
Tourism	2.0	-	-	-	-	8.9
Public Works Department	16.9	24.9	22.6	25.9	24.2	56.1
Civil Wireless Telephones, Posts and Telegraphs	3.4	2.3	4.5	2.5	2.1	11.0
Power	5.3	2.6	4.9	6.5	5.4	13.1
<u>Social Services</u>	<u>7.2</u>	<u>3.7</u>	<u>13.1</u>	<u>20.0</u>	<u>13.6</u>	<u>33.2</u>
<u>Education</u>	<u>5.3</u>	<u>3.3</u>	<u>10.2</u>	<u>15.5</u>	<u>10.4</u>	<u>22.0</u>
Health	1.9	0.4	2.9	4.5	3.2	8.3
Urban Development	-	-	-	-	-	2.9
<u>Unallocable</u>	<u>18.0</u>	<u>26.3</u>	<u>24.5</u>	<u>62.1</u>	<u>62.8</u>	<u>-</u>
UN/Other International Agencies Assistance	18.0	26.3	24.5	62.1	62.8	-
<b>Total Capital Expenditures</b>	<b>106.9</b>	<b>108.5</b>	<b>119.5</b>	<b>170.4</b>	<b>160.3</b>	<b>267.1</b>

a/ Under Ministry of Development.

b/ Includes Information and Publicity, and Government Presses.

c/ Includes Royal Secretariat, Ministry of Finance, Ministry of Foreign Affairs, and Ministry of Home Affairs.

Source: Ministry of Finance.

Table 13: EXTERNAL ASSISTANCE RECEIPTS FROM THE GOVERNMENT OF INDIA,  
1976/77-1981/82 a/  
(Rs million)

	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
<u>Budgetary Assistance</u>						
Annual Development Grant	115.00	120.00	140.00	145.00	150.00	190.00
Police Subsidy	3.93	5.00	5.20	5.00	5.00	5.50
Hydro-meteorological Stations Funding	0.41	0.35	0.35	0.32	0.18	0.52
1949 Treaty Payment	0.50	0.50	0.50	0.50	0.50	0.50
Sub-total	119.84	125.85	146.05	150.82	155.68	196.52
<u>Extra-Budgetary Assistance b/</u>						
Chukha Project <u>c/</u>	43.03	72.46	174.49	118.56	164.31	231.84
Total	162.87	198.31	320.54	269.38	319.99	428.36

a/ Excluding Rs 25.0 million annual Indian excise tax refunds.

b/ Excludes assistance by Government of India departments operating directly in Bhutan. Also excludes assistance on the Penden cement plant and the Gaylegphug Area Development Project. Assistance on these two projects amounted to an estimated Rs 185.0 million during 1976/77-1980/81.

c/ Assistance during 1973/74-1975/76 amounted to Rs 2.33 m, Rs 24.31 m, and Rs 30.17 m by respective year.

Source: Ministry of Finance.

Table 14: EXTERNAL ASSISTANCE RECEIPTS FROM OTHER SOURCES, 1976/77-1981/82 a/  
(US\$ '000)

	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
<u>UN System</u>						
UNDP	1,177.4	1,232.0	1,325.7	4,154.1	1,849.4	3,028.9
UN CDF <u>b/</u>	-	-	-	500.0	282.0	203.5
UN LDC <u>c/</u>	273.2	383.5	226.5	94.3	-	52.5
UN LLC <u>d/</u>	-	-	-	9.1	-	-
UN ICP <u>e/</u>	-	-	-	-	500.0	285.0
UNFPA	-	-	-	577.9	728.7	566.3
UNICEF	592.4	1,150.4	656.0	1,405.0	1,108.3	388.0
WFP	155.0	400.0	600.0	700.0	2,124.9	1,207.0
Sub-total	<u>2,198.0</u>	<u>3,165.9</u>	<u>2,808.2</u>	<u>7,440.4</u>	<u>6,593.3</u>	<u>5,731.2</u>
<u>Other</u>						
DANIDA	-	-	138.0	166.2	109.8	-
Colombo Plan	50.0	127.1	117.3	31.0	290.0	120.0
Sub-total	<u>50.0</u>	<u>127.1</u>	<u>255.3</u>	<u>197.2</u>	<u>399.8</u>	<u>120.0</u>
Total	2,248.0	3,293.0	3,063.5	7,637.6	6,993.1	5,851.2

a/ Official assistance only.

b/ UN Capital Development Fund.

c/ UN Least Development Country Fund.

d/ UN Landlocked Country Fund.

e/ UN Inter-country Program.

Note: Flows are based on donor fiscal years. For this reason, they may not correspond to estimated aid flows in the budget.

Source: Planning Commission.

Table 15: GROSS ELECTRICITY GENERATION, 1977/78-1981/82  
(in GWh)

<u>Power Station</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>
<u>Hydro</u>					
Thimphu	0.882	1.004	1.142	1.047	0.773
Gidakom	3.628	4.070	3.992	4.057	5.083
Wangdiphodrang	0.434	0.501	0.441	0.510	0.518
Paro	-	1.070	1.320	0.972	0.466
Tashigang	0.424	0.411	0.457	0.525	0.532
Mongar	0.120	0.094	0.141	0.203	0.205
Sub-total	5.488	7.150	7.493	7.314	7.577
<u>Diesel a/</u>					
Thimphu	..	..	0.106	0.900	0.960
Phuntsholing	..	..	0.502	0.629	0.613
Sub-total	..	..	0.608	1.529	1.573
Total	..	..	8.101	8.843	9.150

a/ Excludes a small amount (about 0.1 GWh) of diesel generation at Damphu and Tongsa and captive generation.

.. Not available.

Source: Department of Power, Ministry of Development.

Table 16: TOURISM ARRIVALS AND GROSS RECEIPTS, 1974/75-1981/82

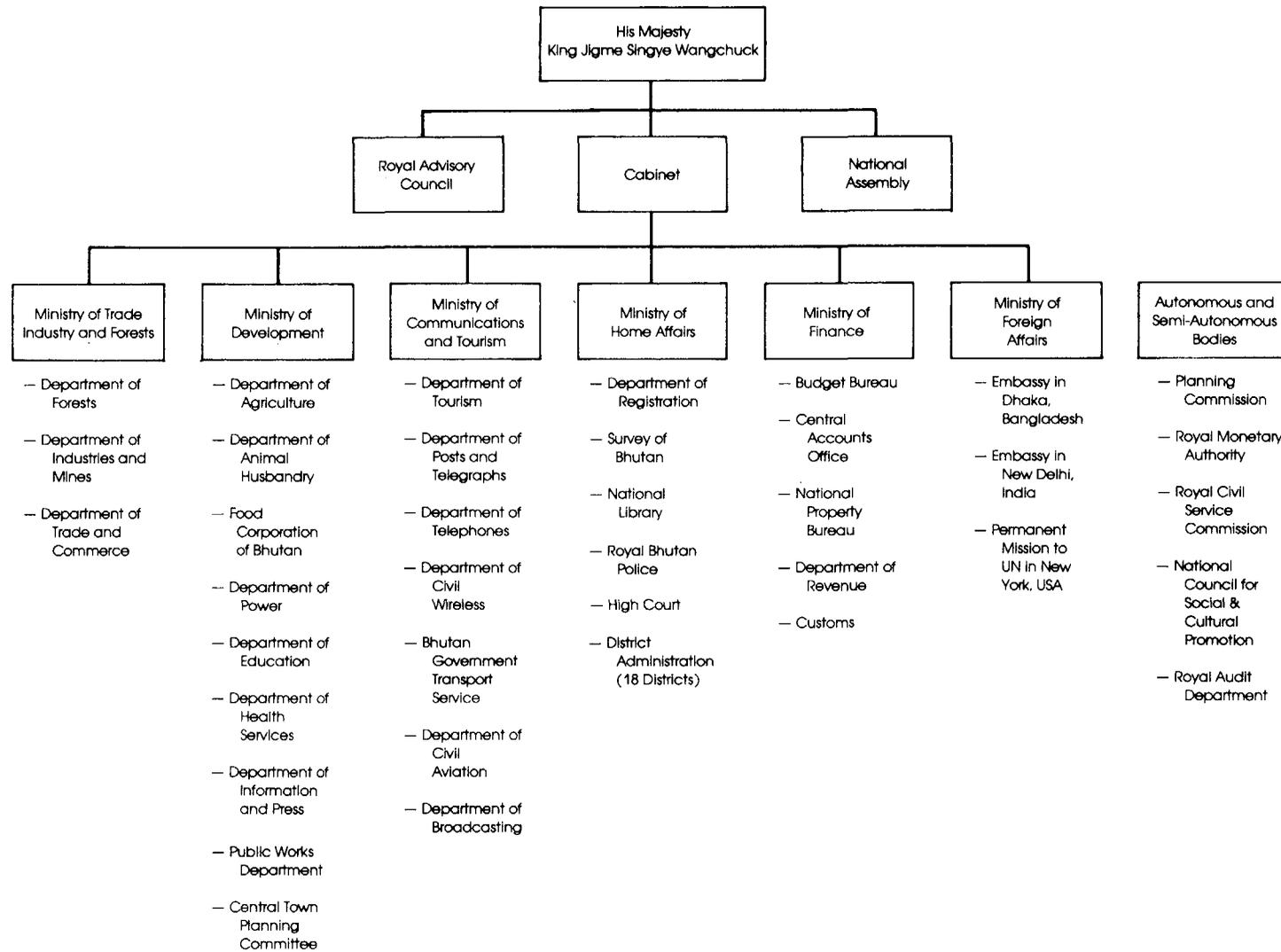
	<u>Arrivals (No.)</u>	<u>Gross Receipts (\$ '000)</u>
1974/75	287	..
1975/76	390	325.0
1976/77	544	244.3
1977/78	934	513.2
1978/79	1,300	971.5
1979/80	1,621	1,494.2
1980/81	1,406	1,176.7
1981/82	1,325	1,411.4

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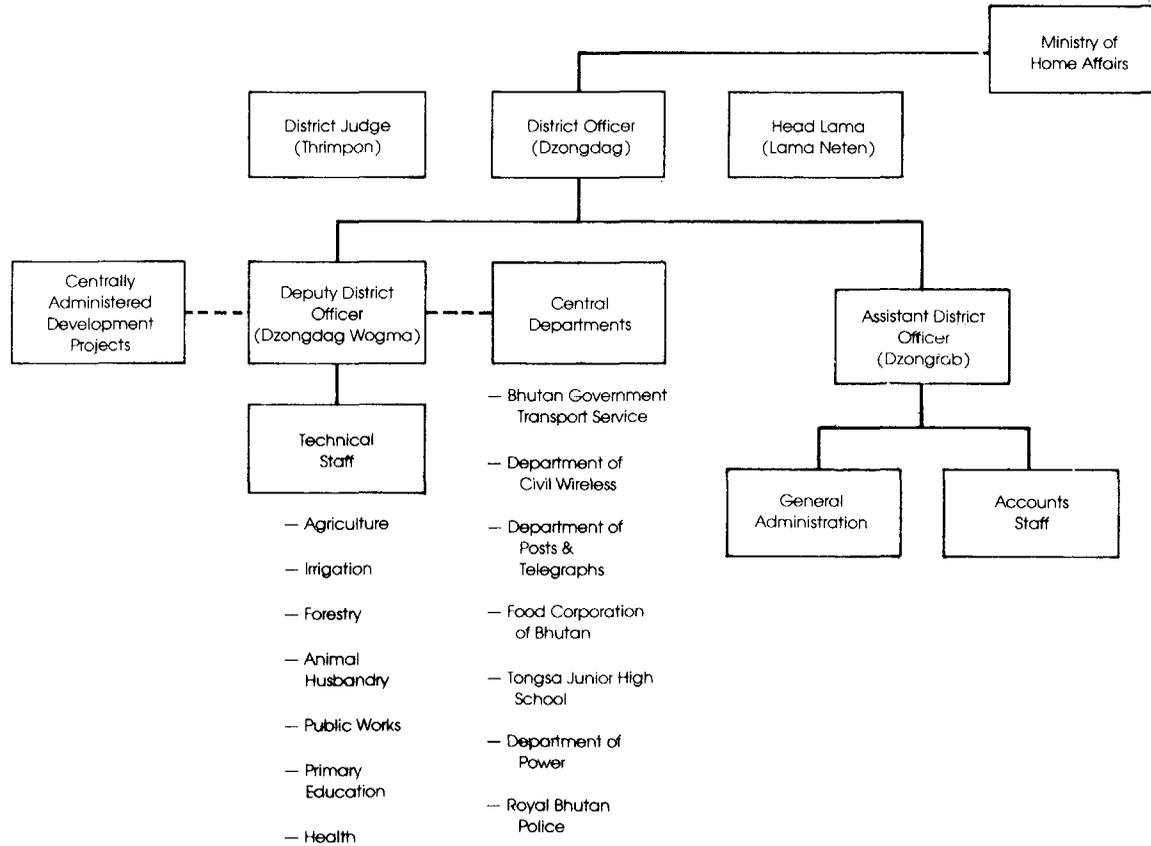
.. Not available.

Source: Department of Tourism, Ministry of Communications and Tourism.

**CHART 1**  
**BHUTAN**  
**STRUCTURE OF GOVERNMENT**



**CHART 2**  
**BHUTAN**  
**ORGANIZATIONAL STRUCTURE OF A TYPICAL DISTRICT (DZONGKHAG) <sup>a/</sup>**



Note: 1) District officer reports to Ministry of Home Affairs; Head Lama to Central Monk Body Thimphu/Punakha; and District Judge to the Judiciary.

2) Dotted lines indicate coordination.

<sup>a/</sup> Based on structure of Tongsa District.

Source: Royal Government of Bhutan









