

Chapter I THE LAND AND THE PEOPLE

1.01. The Kingdom of Bhutan has an area of 46,500 sq. kms situated in the eastern Himalayas between 26.5 and 29 degrees north, latitude; and 88.5 and 92 degrees east, longitude. The country is relatively compact, with a maximum north-south distance of 170 kms as the crow flies, and a maximum east-west distance of 300 kms. It is landlocked, bordered east-west by the Indian state of Sikkim, West Bengal and Assam in the south, and Arunachal Pradesh in the east; and by the Tibetan Autonomous Region of China in the north and north-west. The nearest seaport is Calcutta 700 kms away by road from Phuntsholing, the main gateway town. Thimphu, the capital, is in Western Bhutan, about 180 kms by road to the north of Phuntsholing.

1.02. Bhutan's borders are by and large natural ones. The border with Tibet is traditional, following the watershed of the Chumbi Valley in the north-west and the crest of the Himalayas in the north. The southern border with India was established by treaty with the British in the nineteenth century and by and large, follows the line made by the Himalayan foothills with the plains.

1.03. As can be seen from the above description, Bhutan is almost entirely mountainous with flat land limited to the broader river valleys where population is more concentrated and in small sections of the Duars in the south. The mountainous terrain formed formidable barriers between Bhutan and its neighbours and also between the people living in the different river valleys. As a result, Bhutan remained till recently, in a state of almost complete isolation from the outside world.

1.04. Geologically, Bhutan as part of the Himalayan range is relatively young as the Himalayas form the fold mountains resulting from the collision of the northward moving land mass of India with that of Eurasia about 30 million years ago. As a result, the terrain is among the most rugged in the world with altitudes rising from 160 m to over 7,000 m within distances of less than 100 kms and with the intervening land rising and falling by as much as 1,000 m at a time. The country can be divided into three distinct geographical zones--the southern foothills, the 'inner' Himalayas and the higher Himalayas. The southern foothills rise from the plains to heights of about 1,500 m extending to the north by about 20 kms inside Bhutan; the middle part of the Kingdom consisting of the inner Himalayas rise somewhat more gradually to about 3,000 m. This region contains the broader river valleys: Paro, Thimphu, Punakha, Bumthang and Tashigang which comprise the economic and cultural heartland of the Kingdom. The northern region of the Kingdom comprises the main Himalayan range which although less higher than the western Himalayas, nevertheless, rise to heights of over 7,000 m. This area is very sparsely populated.

1.05. Almost all valleys have a swiftly flowing river or stream fed either by perennial snows or the summer monsoons or both. These merge ultimately into four major river systems as they flow south the Ammochu, the Wong Chu, the Sankosh and the Manas with only the Ammochu having its primary source outside Bhutan. The two largest systems are the Manas which drains eastern Bhutan and the Sankosh which drains the area between Bhutan's highest peaks--the Chomo Lhari (7,314 m) in the north-west and the Kula Kangri (7,554 m) in the north. The flows in the rivers are the highest in the monsoon months (June to September) and lowest in winter (December to March).

1.06. The country can be divided into three distinct climatic zones corresponding broadly to the

three main geographical divisions. The southern belt has a hot, humid climate with temperatures remaining fairly even throughout the year between 15°C and 30°C with rainfall ranging between 2,500 mm to 5,000 mm in some areas. The middle inner Himalayas has a cool, temperate climate with annual precipitation averaging about 1,000 mm with the western region receiving comparatively higher rainfall. The higher and more northern region has a severe alpine climate with annual precipitation around 400 mm. Much of the precipitation is concentrated in the summer months with the south-west monsoon accounting for 60-90% of the total precipitation. There is, however, substantial variations within these broad ranges and the climate and rainfall characteristics change dramatically from one valley to an adjacent one with consequent sharp changes in the composition of agricultural production.

NATURAL RESOURCES

1.07. No comprehensive land use survey has so far been conducted in Bhutan. However, 63% of the country was covered by aerial surveys between 1974 and 1979 with assistance from the Pre-investment Survey of the Government of India primarily to obtain a low density forest profile of the country. Although 37% of the area was omitted from the survey, these were largely unhabited areas in the north and north-west. This survey, yielded valuable data on the land use pattern prevailing in Bhutan.

1.08. As can be seen from Table 2, almost half of the area is under natural forest and about 5% is cultivated or inhabited, pasture or shrub account for a little over 4%. Forests constitute the major natural resource of the country with about two thirds of the forest cover comprising quick growing broad leaved varieties mainly in the southern tropical deciduous forests. The inner valleys consist of oak and other deciduous trees giving way to conifers with increasing altitude. Broad leaved tropical hard woods, dominate up to an altitude of 1,000 m and beyond these, up to 3,000 m, are found temperate forests of pine and oak; the latter is concentrated mainly on the southern slopes which receive most of the monsoon rains. Beyond 3,000 m and up to about 4,000 m which is the tree line, valuable reserves of pine, spruce and fir are found. The survey also indicated that the forest cover is relatively evenly spread with 63% of the surveyed area in the north-west under forests and 81% in the south. An examination of the dispersal of the two main categories of forests indicate that 54% of broad leaved species and 8% of conifers are found in the south while in the north, 50% of the forests constitute conifers and only 11% of broad leaved Varieties.

Table 2 SURVEY OF LAND USE

Square Kilometres	Percent of Area Surveyed	Percent of Total Land Area*
Natural Forest	21,593	74.0 46.4
Cultivated or Inhabited	2,492	8.5 5.4
to 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	117	0.4 0.2
Total	29,176	100.0

*Assuming total land area of 46,500 sq. kms.

1.09. The exploitation of forests at present, however, is low mainly due to lack of accessibility. of the net allowable cut, only about 20% is currently being harvested, a large portion of it to meet household fuel needs. Exploitation is uneven: the relatively accessible forests of the south and those near roads, have been heavily worked while the rest of the cover is more or less intact and overage trees in these areas decay. The Government, however, realises the importance of scientific exploitation to preserve the fragile Himalayan environment which is vital to Bhutan.

1.10. Bhutan also has rich and varied wildlife and is the main home of many rare species. In the south are found elephants, buffalo, tiger, deer and golden langur--a rare species of monkey. Above altitudes of 3,500 m is the home of the snow leopard, musk deer and the blue sheep.

1.11. Although agricultural land comprises about 5% of the total land area, the per capita availability of land is about two hectares. However, given the climate in most parts of the country and the terrain, agricultural productivity is low, but there is considerable potential for the development of horticulture in the inner valleys as well as increasing the productivity of cereals by increasing cropping intensity, specially in the southern regions with increased tapping of the large irrigation potential, coupled with modern inputs. The temperate climate and clear mountain air of the inner valleys is particularly conducive to the development of a significant foundation seed industry.

1.12. Another major resource endowment in Bhutan is the enormous hydro power potential arising out of the steep southern watershed of the Himalayan range. Although no systematic survey has been carried out, the actual potential at the present stage of exploitation is largely academic. If appropriately exploited, power could become the predominant cheap energy source in and could over time, replace the present high dependance on firewood.

1.13. The exploitation of Bhutan's mineral resources which are considerable, is still in its infancy and exploration is both expensive and time consuming due to the terrain and the tectonically disturbed geology of the area. Preliminary investigations carried out, with the assistance of the Geological Survey of India, indicate deposits of limestone, dolomite, coal, gypsum, graphite, copper, lead-zinc, marble, slate and talc. Limestone and dolomite are currently the main minerals being exploited and some quantities are being exported in various forms to India. Limestone is already being processed into cement in a 300 t.p.d. plant near Samchi in southern Bhutan. Bhutan's coal reserves are fairly limited and only of moderate quality. Small quantities are being exported to India.

POPULATION

1.14. The estimated population of Bhutan is 1.165 million (official 1981 estimates). Of this, about 152,000, i.e., a little over 13% live in the urban areas with Thimphu and Phuntsholing accounting for about 40% of the urban population with over 30,000 persons each.

Table 3 POPULATION DISTRIBUTION BY AGE AND SEX

Age group	Total	Percentage	Male	Percentage	Female	Percentage
0- 4	1,58,553	13.61	79,467	13.36	79,086	13.87
5- 9	1,59,635	13.70	80,834	13.59	78,801	13.82
10-14	1,38,778	11.91	71,496	12.02	67,282	11.80

15-19	1,15,989	9.96	58,172	9.78	57,817	10.14
20-24	1,02,961	8.84	51,986	8.74	50,975	8.94
25-29	90,087	7.73	45,384	7.63	44,703	7.84
30-34	70,219	6.03	36,521	6.14	33,698	5.91
35-39	63,344	5.44	32,953	5.54	30,391	5.33
40-44	56,481	4.85	29,682	4.99	26,799	4.70
45-49	51,701	4.44	27,183	4.57	24,518	4.30
50-54	43,301	3.72	22,603	3.80	20,698	3.63
55-59	33,058	2.84	17,606	2.96	15,452	2.71
60-64	29,242	2.51	14,930	2.51	14,312	2.51
65-69	20,150	1.73	10,171	1.71	9,979	1.75
70-74	14,032	1.20	7,019	1.18	7,013	1.23
75-79	7,565	0.65	3,688	0.62	3,877	0.68
80-84	4,535	0.39	2,141	0.36	2,399	0.42
85-89	1,571	0.13	773	0.13	798	0.14
90-	640	0.05	298	0.05	342	0.06
ANS	3,158	0.27	1,903	0.32	1,255	0.22
Total	1,165,000	100%	594,810	100%	570,190	100%

Includes urban and rural population.

Table 4 DZONGKHAG WISE POPULATION 1981

District	Number	%
Bumthang	21,594	2.13
Chring	98,548	9.73
Dagana	25,679	2.53
Gasa	15,313	1.51
Gaylegphug	100,791	9.95
Haa	15,139	1.49
Lhuntshi	35,898	3.54
Mongar	66,334	6.55
Paro	42,220	4.17
Pema Gaytshel	33,639	3.32
Samchi	155,882	15.39
Samdrup Jongkhar	66,157	6.53
Shemagang	40,319	3.98
Tashigang	160,962	15.89
Thimphu	68,255	6.74
Tongsa	23,564	2.33
Wangdi Phodrang	42,706	4.22
	1,013,000	100.00
Urban Population	152,000	
	1,165,000	

Table 5 ESTIMATED POPULATION OF TOWNSHIP AREAS

Sl.No.	Name of Town	Population
1.	Bumthang	2,000
2.	Chirang/Dagapela/Lamidara	6,000
3.	Dagana	2,000
4.	Gasa	500
5.	Gaylegphug/Sarbhang/Kalikhola	12,000
6.	Haa	2,000
7.	Lhuntshi	1,000
8.	Mongar	5,000
9.	Paro	5,000
10.	Pema Gaytshel	5,000
11.	Punakha	3,000
12.	Samchi/Sibsoo/Chengmari	12,000
13.	Phuntsholing	30,000
14.	Samdrupjongkhar	6,000
15.	Shemgang	3,000
16.	Tashigang	9,000
17.	Thimphu	30,000
18.	Chimakoti	12,000
19.	Tongsa	5,000
20.	Wangdiphodrang	5,000
	Total	152,000

There are eight other urban centres with populations below 5,000. Of the urban centres, the fastest growing are Thimphu, the capital, Phuntsholing, a major commercial centre and Gaylegphug, a burgeoning industrial and commercial centre. The population distribution by Dzongkhag indicates that Tashigang along with Samchi have the largest populations, accounting for about 16% of the population each followed by Chirang and Gaylegphug with about 10% each. Lhuntshi, Mongar, Samdrup Jongkhar, Paro, Shemgang, Thimphu and Wangdi Phodrang have populations ranging from 3.5% to 7% each. This population distribution is also indicative of the fact that the distribution broadly follows the river valleys with the southern and central portions of the main valleys having the largest populations.

This is not surprising as the predominant occupation of the populace is agriculture which is generally confined to the river valleys.

1.15. In term of basic demographic parameters, an adult literacy rate of 12% had been achieved by 1980-81 which although low even in terms of prevailing rates of others Least Development Countries is indicative of the expansion of the modern educational system in recent years. Primary enrolment levels have reached 25% among school going age group of boys and 17% among girls. The crude birth rate stood in 1980-81 at 43 per 1,000 live-births in 1980-81.

1.16. The official language is Dzongkha, which is the language of the dominant Drukpa community but this has not been made the national language as here are a number on vernacular schools where it is the medium of instruction.

SYSTEM OF GOVERNMENT

1.17. His Majesty the King is the Head of State and also the Head of Government. He is assisted by the Cabinet which consists of His Majesty's Representatives in various Ministers, Ministers and some senior Civil Servants. The composition of the National Assembly has undergone some changes since its initial constitution and at present consists of 100 members representing the people, 10 representatives of the Monk Body and 40 senior officials of the Government. The Assembly meets twice a year and is the main legislative body. During its sessions, vigorous debates on policy issues and people's problems are carried out.

1.18. The royal Advisory Council presently consists of 10 members. There are two members elected by the National Assembly from the Monk Body; six regional representatives also elected by the Assembly and two members appointed by His Majesty. The Chairman is nominated by His Majesty from among the members. The Council works as a watchdog body advising His Majesty on key issues of policy and oversees the functioning of Government.

1.19. The Monk Body which currently has a strength of about 5,000 is financed by an annual subsidy from Government and is the sole arbiter on religious matters. The Jekhamp is the Head of the Body chosen from among high ranking Lamas. He is assisted by four high ranking Lamas of the Central Monk Body which consists of 1,000 Lamas. Each Dzongkhag except those in southern Bhutan has a Monk Body headed by a Head Lama (Lama Neten) who presides over all religious matters in the Dzongkhag.

1.20. The administrative structure has evolved considerably over the past twenty years. Starting from only the Royal Secretariat, the Development Secretariat was later constituted to initiate the process of development in the country. With the expanding responsibilities of Government and increasing size of development programmes, a number of departments were created. These departments are now grouped into five Ministries, each Ministry is under the charge of a Representative of His Majesty or a Minister. The Ministries as presently constituted are: the Ministry of Development, the Ministry of Trade, Industries and Forests; the Ministry of Communications; the Foreign, Home and Finance Ministries. The Planning Commission is headed by His Majesty the King as Chairman with His Majesty's Representative in the Ministry of Development as Vice Chairman and the Deputy Minister for Planning as its full time head.

1.21. Local administration has been strengthened recently to meet the requirements of decentralised administration and development. There are 18 dzongkhags or districts each under the charge of a Dzongda responsible for civil administration and development activities. Each Dzongda is assisted by a Dzongda Wangma responsible for planning and development and the Dzongrab responsible for civil administration. The larger dzongkhags are sub-divided into sub divisions headed by a Dungpa. Groups of villages have a headman: the Gup or Mandal. There is in each dzongkhag a Dzongkhag Yargay Tshogchung or the District Development Committee consisting of people's representatives which assists the Dzongda in his development functions.

1.22. The High Court consists of six judges. Four of the judges are appointed by His Majesty, two public representatives elected by the National Assembly subject to ratification by His Majesty the King. There are district courts in each dzongkhag with a district judge (Thrimpon) but minor

disputes are settled by village headmen. The law of the land is derived from that laid down by the first Shabdung. However, it is recognized that the complexities of increasing development activity, call for expanding the legal framework. There is for example, at present no Companies Act although a need for one is felt and is presently being drafted. Companies or Corporations are set up by a Royal Charter.

Chapter II ECONOMIC CONDITIONS

INTRODUCTION

2.01. In view of its natural and self-imposed isolation that existed till recently, patterns of economic activity in Bhutan have been simple. These have been dictated substantially by physiographic features: with communities settled in the river valleys and in the southern foothills, inter action with each other as well as the outside world had been limited; economic activity had, therefore, long been confined to subsistence agriculture supplemented by livestock rearing and cottage industries based on traditional handicrafts. In the northern region, livestock rearing had been virtually the sole activity with migrating flocks of yak and sheep. Marketable surpluses in each community had been extremely limited and whatever little trade that was conducted between the communities and the outside world was by barter. Each community for most purposes, was traditionally self-sufficient. In such a situation, the needs of an administration were also minimal and the overall economy was more or less self-sufficient at a low level of economic activity with little capital formation confined to replacement or purchase of traditional tools and livestock.

2.02. This economic structure was inherently stable for a long period as the ratio of land to labour was favourable. With the advent of planned development in 1961, certain structural changes in the economy were inevitable. Although capital formation was almost entirely the result of external assistance in the form of grants, the necessity to concentrate on infrastructure building at the initial stages resulted in little revenue generation and the necessary tasks of main training and operating the infrastructure had inevitably also to depend on external assistance leading to the loss of the traditional self-sufficiency of the overall economy. A second aspect of the process of development has been the self-generating need for expanding development activities due to rising expectations among the people. It is now widely recognized that a minimum acceptable level of growth and distributional equity has emerged which will call in future for significant increases in investment levels and re-orientation of development strategies.

2.03. Both increasing investment levels and making major changes in the development strategy call for a larger body of socio economic data and its analysis over time. Much of this data both base line and time series, are still not adequately available. However, for the preparation of the Fifth Plan, an unprecedented volume of basic socio economic data collection has been undertaken. These include a population survey; livestock census; a nationwide agriculture survey; nutrition; consumption expenditure, education and health surveys as well as estimates of national income and balance of payments.

GROSS DOMESTIC PRODUCT

2.04. The first efforts at estimating the Gross Domestic Product of Bhutan with sectoral break down was undertaken by the Planning Commission in 1981 for the year 1980/81. These estimate are presented in table 6. The estimated GDP amounts to Nu. 1020.5 millions and with a mid year population of 1.165 million, the per capita GDP comes to Nu. 876. This would indicate that Bhutan has one of the lowest per capita incomes in the world. With the estimated distribution of t population between rural and urban sectors it would seem that about 15% of the population account for roughly one third of the GDP generated in the modern sector and the balance of 85' of the population account for two thirds of the GDP, a distribution pattern better than in man least developed countries. This, however, is a rough estimate. Despite the low per capita income nutritional levels in Bhutan are comparatively high, indicative of the self sufficiency of the rural household.

2.05. While agriculture and allied activities contribute over 63% of the GDP, about 48% i accounted for by agriculture and animal husbandry alone. It can be assumed that the share c agriculture and animal husbandry have declined to some extent over time with the emergence c a small modern sector. Nevertheless, the still high contribution of these activities to the GDP i indicative of the high dependence of the majority of the population on traditional activities. Much of the contribution of these sectors to the GDP still comes from traditional subsistence agriculture. Forestry accounts for an estimated 15% of GDP reflecting its importance as the main source of domestic energy, construction materials and of exports.

2.06. A large portion of the contribution of forestry is in the modern sector. Besides this, manufacturing contributed 2.3% to the GDP with small and cottage industries and mining contribution at 0.9% and 0.8% respectively reflecting the nascent situation of industrial development and the lack of development of mineral resources. Tourism contributed a little over 1% although it is major hard currency earner.

2.07. As may be expected, Government administration accounts for over 10% of GDP, health and education 3.4% and transport 2.7%. Government administration encompasses all development activities and has been increasing at a rapid rate in the past. The contribution of education an health indicate the large network of these services that has been built up and the cost of operating them. Trade, commerce, banking and communications are all small contributors reflecting the subsistence nature of the economy.

2.08. Other national accounts data are not yet available. In the absence of production data, assessment of economic growth rates cannot be made accurately. Although this situation being rectified, some exercises have already been carried out to estimate GDP in past years by Planning Commission which indicate that the real GDP annual growth rate averaged about 6% between 1978/79 and 1981 /82. Although some trade data has been collected recently, it is still not adequate to determine trade and nonfactor service flows to arrive at proper estimates of overall investment and consumption levels. Public investments in 1980/81 was equivalent to 16% GDP (excluding that of the Chukha Hydel Project). Public investment so far has been financed entirely by external

assistance, private investment being confined generally to traditional investment like livestock, land and housing and much of the private investment in manufacturing has been with the assistance of public financial institutions.

**Table 6 GROSS DOMESTIC PRODUCT AT MARKET PRICES 1980/81
(ESTIMATES)**

		Million Nu.	
Sl.No.	Sector	Contribution to GDP	%
1.	Agriculture related activities	645.2	63.2
	a. Agriculture	409.4	40.1
	b. Animal Husbandry	76.5	7.5
	c. Forestry	159.3	15.6
2.	Manufacturing and Mining	52.9	5.2
	a. Manufacturing	23.7	2.3
	b. Small Cottage Industry	9.6	0.9
	c. Mining	8.6	0.8
	d. Tourism	11.0	1.2
3.	Services	133.8	13.1
	a. Power	2.7	0.3
	b. Communications	5.8	0.6
	c. Transport	27.6	2.7
	d. Construction	18.9	1.8
	e. Social Services e.g. health, education, etc.	34.8	3.4
	f. Financial Institutions	15.4	1.4
	g. Trade	28.6	2.9
4.	Government Administration	106.6	10.4
5.	Net Rental Income	82.0	8.1
	Total	1020.5	100.00%

TRADE, TRANSIT AND BALANCE OF PAYMENTS

2.09. Bhutan's trade, limited by low marketable surpluses of self-sufficient communities, was mainly with Tibet and based on barter. Bhutan exchanged rice for salt, wool, tea and precious metals. Free trade between India and Bhutan has been traditional, but it was mainly the southern region which traded with India. With the closure of the border with Tibet in the early 60s, a complete re-orientation of trade ties towards India took place. In addition, with the inception of development activities imports from India, both of wage goods and capital equipment, expanded rapidly. Surplus production generated in Bhutan mainly agricultural and forest based, were exported to India.

2.10. Bhutan's present dependence on trade is high as a result of the expansion that has taken place in the past 20 years of planned development. Estimated imports (table 7) amounted to about 40% of GDP while estimated exports formed 17% of GDP resulting in a large 23% trade deficit.

Table 7 ESTIMATED DIRECTION OF TRADE, 1981/82 (Nu. in million)

	With India Value	%	With Other Countries Value	%	Total Value
Exports	178.0	96.5	6.4	3.5	184.4
Imports	404.5	93.1	29.8	6.9	434.3
Trade Balance	(-)226.5		(-)23.4		(-) 249.9

2.11. Bhutan's major trading partner is its southern neighbour India with which it forms a free trade area: 94% of Bhutan's trade is with India but due to an open frontier and inadequate customs administration there is no accurate account for flow of goods and services between the two countries. Bhutan exports potatoes, apple, orange, big brown cardamom, ginger, and vegetables from its agricultural surpluses. In addition, other exportable items are timber, tea chest plywood and battens, resins, minerals and wide range of handicrafts of its agricultural surpluses. In addition, other exportable items are timber, tea chest plywood and battens, resins, minerals and a wide range of handicrafts. Of manufactured products till recently, only some processed fruit products were being exported but of late cement is emerging no as a major exportable item. Agricultural products accounted for 27% of all exports followed by forestry products at 15%. In 1981/82 with a full year of functioning of the Pended Cement Plant, 71,000 MT of cement was exported to India accounting for 27% of total exports.

2.12. Imports from India cover a wide range of consumer, intermediate and capital goods. The largest imports are of metal and metal products (18.6%), petroleum products (14.2%), food grains (5.5%), transport equipment (5.4%), and textiles and clothing (5.3%). Except for a few minor items which are not imported to protect domestic industries, there are no restriction on imports from India. Private individuals are permitted to imports from India but a considerable trade takes place on a Government to Government basis especially of imports of products under quota in India of which Bhutan is allocated a share such as steel, coal, fertilizers, industrial spirits, edible oils, rice, wheat, sugar and salt. Many of the imports especially of capital equipment and machinery, are financed by the development grants from the Government of India and, therefore, do not amount to a deficit balance of payments situation despite the adverse balance of trade.

2.13 Trade with Countries other than India accounted for less than 6% of total trade flows in 1981/82 but has been growing of late .Almost 85% of exports were accounted for by cardamom and almost the entire balance osins. Tourism is a major foreign exchange earner followed by sale of stamps abroad.

2.14. Imports from overseas essentially comprises machinery and equipment financed by aid from international agencies and bilateral donors which have been substantially in the form of grants so far. The other major import is of automobiles much of which are financed from Bhutan's own hard currency accruals. A small quantity of imports of consumer items are also financed from Bhutan's own reserves. Imports which are entirely on official account, are duty free. Release of foreign exchange for imports is controlled by Government and all official overseas trade is handled by the State Trading Corporation of Bhutan.

2.15. Owing to Bhutan's free access to the large nearby Indian market, India is likely to remain Bhutan's main trading partner. However, a growing need to expand exports to third country markets in order to earn foreign exchange, is emerging as Bhutan in future would have to spend more foreign exchange for import of spares etc. and to service external hard currency debts incurred as a result of increased international borrowings.

2.16. Trade and transit arrangements with India play a critical role in developing foreign trade. A trade and transit agreement between India and Bhutan was signed in 1972 valid for a period of 10 years. With the changing trade scene, a number of the arrangements in the treaty were revised to simplify procedures in order to assist Bhutan to develop its third country trade. Negotiations were conducted in 1981/82 and a revised agreement with considerably more favourable terms has been worked out between the two countries.

2.17. Bhutan and Bangladesh also signed a trade and transit agreement following the 1979 modification of the agreement between the Governments of Bhutan and India in which India agree in principle to the use of land and river transit routes to Bangladesh.

2.18. Bhutan is a land locked country and its main access to the sea is through the port of Calcutta in India. However, transit and transportation for Bhutan's overseas trade have presented no major problems so far due to good relations with India. Procedures are highly simplified and have been modified from time to time as required.

2.19. It would appear from table 8 that Bhutan's overall balance of payment has been sound. The country's hard currency balances represent a very healthy trend. Reserves at the beginning of 1981 were US \$4 millions which increased to US \$ 10 millions by end 1982. Besides, overall balance of payment surpluses with India have been run during three of the past four years. Both these situations result from the conservative currency management practices and the large sustained aid inflows. The balance of payments position indicated in table 8, has been worked out for the first time despite difficulties. A more reliable picture would become possible in due course with increasing data on the flow of invisible (especially remittances from Bhutan by expatriates which may be quite large); and better data on changes in rupee circulation.

PUBLIC FINANCE

2.20. Modern public finance practices in Bhutan can be said to have begun in the early '70s. Prior to this, most taxes were being collected in kind in the form of agricultural produce or as labour and the burden in either case was quite heavy. The levy on produce was on an average one fourth of production of each farming family and labour contribution amounted to about two months labour for every adult. With the introduction of cash taxes based on type of land holding and on live-stock, the burden on the population decreased sharply. However, labour contribution continued and formed a significant input in construction in the first two Five Year Plans. It is difficult to estimate quantitatively the labour contribution made to Government and its role in capital formation in the first two Plans. Thus, resources in cash generated internally in this period do not fully reflect the resource mobilization made by Government.

2.21. While in the First Plan no estimates are available for internal resources mobilization (as almost all of it would in any case have been in kind), about Nu. 2.2 millions or 1% of the total outlay of the Second Plan came in cash from internal resources. The in kind contribution of labour, however, was also significant.

2.22 A modern taxation system began to emerge at the beginning of the Third Five Year Plan period. Although the tax base was low, a total of Nu.41 millions was collected by Government in 1971/72 And by 1975/76 this rose to Nu.45.1 millions direct taxes in 1971/72 contributed the least at 7.8% of the total revenue, indirect taxes contributed 9.5% and the major contribution was from non - tax revenue at 82.7%. The share of direct and indirect taxes increased some what by the end of the Third Plan period in 1975/76 with direct taxes accounting for over 10% and indirect taxes 19% of the overall mobilization. The share of non - tax revenue declined both in absolute (Nu.33.9 millions to Nu. 31.8 millions) and relative terms (82.7% to 68.8%). Nevertheless, for the Third Plan as a whole, the relative contribution of the three sources remained more or less the same as in 1971/72. The small structural changes in the relative proportions of the various sources of revenue was due to the widening of the tax base owing to increased monetization of the economy accounted for increase in sizes of Government and non - traditional employment and a larger commercial turnover. While most of the resources generated internally went to finance normal Government activity, 14% of the total mobilization, i.e.Nu. 32.8 millions was contributed to the Plan accounting for 7% of the overall plan outlay.

2.23. The mobilization of domestic resources in the period 1976 to 1981 more than doubled that of the previous corresponding period. However, the relative proportions of the various sources changed only marginally. The total internal contribution to the Plan declined marginally to 12.75% at Nu 59.5 millions which amounted to 5% of the overall Fourth Plan outlay.

2.24. In 1980/81, the overall receipts stood at Nu. 101.7 million which was 21.7% of the total resources mobilized during the entire Fourth Plan and the highest in any year so far. This amounted to 10% of the Gross Domestic Product. Over the third of these receipts were accounted for by the gross receipts of Government departments: Tourism, Bhutan Government transport Services, Government Workshops, and Store, Lotteries, Telephones, Wireless and Post &Telegraphs. Only a few of such receipts, however, actually signified the net contribution to the budget and in most cases the operating expenses which formed part of the budget were higher than receipts and there was a net out go from resources. Once such cases are excluded, public revenues amounted to Nu.66.millions or 6.6% of the Gross Domestic Product in 1980/81.

2.25. The contribution of direct taxes continue to be low although over time, it has risen in its relative contribution standing at 13% of total resources mobilization in 1980/81 as against half of that decade earlier.

Table 8 BHUTAN'S OVERALL BALANCE OF PAYMENTS (ESTIMATES) 1981/82 In Million Nu.

Receipts		Payments	
I. Current Account			
1. Exports(f.o.b.):	180.0	1. Imports (c.i.f.):	440.0
2. Invisible:	46.1	2. Invisible:	49.2
a) Transport	17.5	a) Diplomatic expenses	6.5
b) Tourism	11.7	b) UN and other agencies	27.0
c) Stamps	0.8	c) Other Government expenses (medical,travel,etc.)	6.7

d) Expenses of foreign Missions	6.5	d)Remittances of expenses to India	9.0
3. Total current account	226.1	3. Total current account	489.2
II. Capital Account			
4. Interest earnings:	23.0		
a) On foreign currency	1.5		
b) On Rupees	21.5		
5. Official transfers	247.6	5. Official transfers	Nil
a) Government of India	190		
b) UN and Bilateral	57.6		
III. Overall Balance			
6. Change in reserves (+increase-decrease)	7.5		

Table 9 BALANCE OF PAYMENTS WITH COUNTRIES OTHER THAN INDIA 1981-82 ESTIMATES (Nu. in million)

Receipts		Payments	
I. Current Account			
1. Exports	6.426	1. Imports	29.763
		a)Exchange records.	10.755
		b) As part of aid (2)	19.008
2. Services and Private transfers	27.045	2. Services and private transfers	35.298
a) Tourism and Stamps	12.492	a) UN & other agencies (3)	27.018
b) Private transfers	9.630	b) On Government	3.357
c) Diplomatic expenses of UNDP & foreignaccount embassies (1)	4.923	c)Diplomatic expenses	4.923
3. Total Current Account	33.471	3. Total Current Account	6.501
II. Capital Account			
4. Official transfers	57.6	4. Official transfers	
III. Overall Balance			
5. Change in reserves (+increase, -decrease)	26.01		

Note: (1) Receipts from the expenditure of foreign missions is assumed to be equal to the Royal Government's expenditure on its missions abroad.

(2) 33% of aid receipts are assumed to come in the form of equipment and other imports.

(3) 67% of aid receipts are assumed to be payments for foreign services, but 30% of this is further assumed to be spent within the country.

Table 10 FOREIGN EXCHANGE RESERVES, 1977/78-1981/82 (a) (end-March)

1977/78 1978/79 1979/80 1980/81 1981/82

(Rupees million)

Indian Rupee Reserves(b)					
Deposits with State Bank of India	86.7	131.2	129.2	169.7	199.5
Working Overdraft from State Bank of India	8.0	18.4	-27.6	-31.6	-31.7
Net Rupee Holdings	78.7	112.8	101.6	132.1	167.8
	(US 5 million equivalent)				
Net Rupee Holdings	9.54	13.84	12.40	16.13	17.95
Other Reserves (c)					
Government	1.02	1.82	2.53	3.15	3.34 (d)
Bank of Bhutan	0.17	0.24	0.66	2.31	4.12
Other (e)	--	--	--	--	0.29
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 to 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.

Table 11 TAX AND NON-TAX REVENUES, 1971-81 (Nu. in million)

	1971/72	1972/73	1973/74	1974/75	1975/76	Total Third Plan Value	Percentage
Direct Taxes	3.2	3.5	3.4	4.3	4.7	19.18	8
Indirect Taxes	3.9	4.3	3.9	4.4	8.6	25.1	11
Non-Tax Revenue	33.9	36.9	35.2	45.1	31.8	182.9	81
Total	41.0	44.7	42.5	53.8	45.1	227.1	100
	1976/77	1977/78	1978/79	1979/80	1980/81	Total Fourth Plan Value	Percentage
Direct Taxes	7.6	9.2	12.8	11.8	13.6	55.0	12
Indirect Taxes	33.7	37.7	39.1	42.0	42.7	195.2	42
Non-Tax Revenue	34.7	39.8	41.3	40.3	45.3	201.4	43
Total	76.0	86.7	93.2	94.1	101.6	451.6	--
					Borrowings	15.03	3
					Grand Total	466.6	100

Although there are income tax as levied on Government employees upto a maximum rate of 5% of basic salary and a flat rate of 5% on all private rental income, the tax bases of both of these are low. The major contribution so far came in the form of turnover tax with exemptions at the lower end

and a maximum rate of 7/8% of business with annual sales value exceeding Nu. 1.2 millions. Other forms of direct taxes at present are licencing and registration fees on motor vehicles and commercial enterprises, land tax, rural house tax and miscellaneous municipal tax along with royalties, levied on timber and minerals. In 1982 a 30% corporate tax was levied on the profits of selected corporate bodies. This, along with royalties from forests and minerals and the tax on business turnover, have the maximum potential for the future.

2.26. Indirect taxes constitute the major source of Government revenues at present with excise duties along with an Indian excise refund accounting for 57% of total tax revenues. Domestic excise duties are almost entirely from duties on locally manufactured liquor. Sales tax varying between 4% to 8% is after excise, the most important source of revenue and one with the maximum potential. However, the present mechanics of sales tax collection on goods imported from India requires streamlining, depending as it is on sales tax exemptions obtained by traders from India. Although sales tax levels are lower than their Indian counterparts, this does not seem to have been sufficient incentive for obtaining sales tax exemptions on imports.

2.27. Difficulties in domestic resources mobilization are reflective in the constantly growing deficit on current account in the budget. During the Fourth Plan, the gap between current receipts and revenues increased from Nu. 26 millions to Nu.--67.8 millions reaching almost 7% of GDP in 1980/81. The overall budgetary deficit including capital expenditure has been well in excess of 20% of GDP. The gap has been closed by external assistance both project tied international assistance as well as the budgetary support from the Government of India which imparts a high degree of flexibility in public finance management. Such assistance has been of considerable help in maintaining a conservative overall budgetary policy and there has been hardly any need for deficit financing or to go in borrowings from internal financial institutions.

Table 11a CONSOLIDATED GOVERNMENT BUDGET, 1978/79-1982/83 (Nu. in million)

	1978/79	1979/80 Actual	1980/81	1981/82 Revised Estimate	1982/83 Budget
Total Receipts	93.1	94.2	101.7	101.7	120.3
Revenue	60.3	63.6	66.9	69.4	
Receipts from Government Deptts	32.8	30.6	34.8	31.7	
Recurrent Expenditures	133.4	155.2	169.5	169.7	197.5
Balance on Current Account	-40.3	-61.0	-67.8	-68.6	-68.2
Capital Expenditures	119.7	170.4	160.7	267.1	437.6
Overall Deficit	160.0	231.4	228.5	335.7	505.8
Financed by:					
Government of India Development Grants	140.0	145.0	150.0	190.0	250.0
International Assistance	24.5	62.1	62.8	109.4	82.2
Other Domestic Financing (net)	-4.5	24.3	15.7	36.3	173.6

Note: For purposes of this table, Government finances have been consolidated even though actual consolidation did not occur until 1982/83. Other domestic financing includes currency issue, use of

cash balances, domestic borrowings from financial institutions. and other small grant receipts from India.

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

	1976/77	1977/78	1978/79	1979/80	Revised Estimates	
					1980/81	1981/82
General Public Services	57.2	50.4	71.2	83.3	89.46	61.2
Development Headquarters (a)	3.6	3.3	4.3	4.9	4.5	5.1
Information (b)	1.4	1.0	0.8	0.9	1.1	0.9
Other Non-dev.Sectors (c)	52.2	46.1	66.1	77.5	83.8	55.2
Economic Service	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, Mine, Trade and Commerce	1.5	1.6	2.6	3.7	3.7	4.7
Tourism	-	-	-	-	-	-
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
Social Services	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
Total Current Expenditures	102.1	101.9	133.4	155.2	169.5	169.7

(a) Under Ministry of Development.

(b) Includes information and publicity, and Government presses.

(c) Includes His Majesty's Secretariat, Ministry of Finance, Ministry of Foreign Affairs, Ministry of Home Affairs.

2.28. The institutionalization of public finance has also been of recent origin although a position of Finance Secretary was created within the Royal Secretariat in 1963. It was only in 1968 that the Ministry of Finance was formed and in 1971 that the first budget was prepared. This budget was the "Civil Budget" as it catered only to the needs of non-developmental organisations-- the Royal Secretariat and Ministries of Finance, Home and Foreign Affairs. The development departments were served by a separate " Development Budget" which was outside the purview of the Finance Ministry and administered by the Development Secretariat. The primary function of this budget was to allocate the annual Government of India grants. This situation continued for a long time as there were practically no financial links between the two budgets. However, in 1980/81 the two budgets were integrated into streamline budgetary procedures and also in anticipation of the larger contribution internal resources were expected to make in the Fifth Plan.

MONEY AND BANKING

2.29. Till the advent of planned development, the barter economy of Bhutan did not require a monetary system. A series of coins, however, were issued by the Government in the '50s but transactions more or less continued to be by barter and taxes continued to be collected in kind. With planned development and the inflow of external funds for capital formation, the process of monetization began as imports of equipment and machinery had to be paid for in cash and the payment of cash wages led to a demand for wage goods supplied mostly from imports. Nevertheless, barter continued to play an important role and remains to some extent even today. The large inflow of development assistance from India much of it in cash, and the absence of controls on trade and payments inevitably led to the Indian rupee becoming a commonly accepted medium of exchange in the absence of a formal Bhutanese currency. It was only in 1974 that the first issue of ngultrums was carried out and although all accounts and prices are now expressed in ngultrums, there is free convertibility on a one for one basis between the rupee and the ngultrum and both currencies continue to circulate freely.

2.30. The issue of ngultrums has been sporadic. Over the last 8 years since the ngultrum was first issued, a net of Nu. 6.2 millions worth of ngultrums has been introduced in the economy. This is about 8 to 10% of the total estimated currency circulation (M1) of Rs./Nu. 60 to 80 m (although in view of the free flow of rupees between the two countries, it is virtually impossible to arrive at an accurate estimate of currency in circulation at the present time).

2.31. The financial sector in Bhutan at the end of the Fourth Plan comprised the only commercial bank--the Bank of Bhutan, the Unit Trust of Bhutan and the Royal Insurance Corporation of Bhutan which also administers the Government employees' provident fund. The Bank of Bhutan established in 1968 is jointly owned by the Government and the State Bank of India with an equity participation ratio between the two parties of 75:25. There are 14 branches across the country i.e. one branch for 83000 persons indicative of the under banked nature of the economy. Deposits at the end of 1981 amounted to Nu. 206.2 millions of which 60% were current deposits, 11.6% savings deposits, and balance of 28.3%, fixed deposits. The Bank is highly profitable and has an extremely high liquidity position. Although in absolute terms, advances grew by almost ' 200% between 1977 and 1980, the credit deposit ratio remained low: between 1977 and 1979, advances increased only from 32%-37% of deposits but there was a sudden jump to 55% in 1980, falling to 33% in 1981. The Bank has followed a relatively cautious lending policy. This along with the lack of demand and the paucity of investment opportunity accounted for almost 60% of the Bank's assets being liquid as of ending 1981.

Table 12 MONETARY SURVEY,1977/80-1981/82 (a) (Nu. million, end-March)

	1977/78	1978/79	1979/80	1980/81	1981/82
Net Foreign Assets	88.5	129.2	126.5	179.5	240.2
Rupee (b)	78.7	112.8	101.6	132.1	167.8
Other	9.8	16.4	24.9	47.4	72.4
Domestic Credit	44.0	-38.3	-26.2	-25.3	-32.8
Claims on PrivateSector (c)	15.4	23.7	32.9	28.3	45.9
Claims on Public Enterprises (c)12.0	18.4	25.5	46.0	39.1	

Claims on Government (net)(d)	-71.4	-80.4	-84.6	-99.6	-117.8
Other Items (net)(e)	-1.3	-33.2	-20.3	-48.5	-61.9
Total Liquidity	43.2	57.7	80.0	105.7	145.5
Money Supply (f)	22.2	18.5	39.7	46.8	50.2
Quasi-money	21.0	39.2	40.3	58.9	95.3

Table 13 ASSETS AND LIABILITIES OF THE BANK OF BHUTAN, 1977-81 (Nu. million, end-December)

	1977	1978	1979	1980	1981
Cash in Hand (a)	1.2	1.3	0.6	1.9	0.9
Foreign Assets	92.1	117.3	150.1	169.1	243.9
Indian Currency	0.5	1.2	1.1	1.8	1.5
Rupee Deposits	87.3	102.9	138.0	130.7	193.9
Other Foreign Exchange Deposits	-	-	4.1	19.0	38.2
Loans and Bills Discounted Outside Bhutan	4.3	13.2	6.9	17.6	10.3
Advances	29.6	41.2	54.2	85.0	79.9
Loans (b)	23.2	32.7	47.6	75.5	65.8
Bills Discounted in Bhutan	6.4	8.5	6.6	9.5	14.1
Other	3.3	4.7	4.2	5.6	7.0
Assets-Liabilities	126.2	164.5	209.1	261.6	351.7
Capital and Reserves	18.5	27.1	37.0	55.2	82.2
Foreign Liabilities(c)	0.3	0.4	18.3	43.4	26.9
Deposits and Other Accounts	90.2	126.3	147.5	154.6	214.5
Current (d)	58.7	76.4	92.0	94.8	130.3
Savings	10.2	14.6	19.1	23.5	24.0
Fixed	21.3	34.2	35.0	34.6	58.4
Special (e)	1.1	1.4	1.7	1.8	
Other	17.2	10.7	6.3	8.4	8.1

(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 deposits intended to provide backing for the issue of Ngultrum currency.

Table 14 DISTRIBUTION OF BANK OF BHUTAN ADVANCES, 1977-82 (Nu. million, end-December)

	1977	1978	1979	1980	1981	1982 (a)
Industry	3.1	4.2	7.5	14.7	13.6	21.2
Trade and Commerce	3.0	20.4	29.9	49.0	37.8	42.1
Transport	4.1	3.4	3.9	4.3	5.1	4.7

Agriculture	1.4	1.4	1.8	1.8	1.6	1.7
Building and Construction	1.1	1.4	1.8	3.0	4.6	4.4
Personal and Other (b)	3.3	4.7	5.5	10.6	11.0	10.9
Total	26.0	35.5	50.4	83.4	73.7	85.0

(a) End-March.

(b) Including public welfare loans.

2.32. The combined assets of the three non-bank financial institutions amount to about 30% 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 80% of the share capital and private parties the remaining 20%, but in 1981, the Government sold the equivalent of 19% of the total share capital from its holdings to private individuals. RICB has also proved to be a highly profitable institution and in only one of its seven years of operation have gross claims exceeded premiums. As of end 1980, total funds available to RICB amounted to Nu. 9.4 millions; following an increase in the capital base in 1981, accumulated funds stood at Nu. 18.6 millions by year end. The RICB has also had difficulty investing its funds profitably within Bhutan; at end 1981, cash and bank deposits accounted for 62% of total assets. The main areas of investment were mortgages, buildings, and trucks, although in 1981, the RICB also invested 10% of the initial share capital of the United Trust of Bhutan.

2.33. The largest of the non-banking financial institutions is the Govt. Employees Provident Fund. As the civil service has been steadily growing and is still mostly young, contributions have far exceeded withdrawals, resulting in rapid growth of the GEPF. As of end 1981, the resource base amounted to Nu. 62.8 millions. The RICB, which manages the GEPF on behalf of the Government, undertakes to earn about a 12% return on contributions. The full 12% return accrues to the Government on its contributions, along with the members' contributions. As of end 1981, the net amount owed to Government from interest earnings was Nu. 8.6 millions. Although the GPF portfolio contains investments similar to the RICB: buildings, mortgage and trucks, it is also perceived as a development finance institution by the Government. As such, it has invested about 26% of its portfolio in development projects, mostly commercial undertakings. Again, however, a relatively high 20% of the portfolio is held in cash and bank deposits.

2.34. The UTB was established by the RICB, which owned 10% of the initial capital, and the GEPF which owned the remaining 9%. It was established to encourage industrial development by purchasing shares in promising new industries. By end June 1982, its resources had grown to Nu. 10.9 millions, spread among 450 holders. Two types of units are offered: fixed time 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 time units account for Nu. 7.0 millions of its available resources. Due to the lack of adequate industrial investment channels so far, most UTB funds are invested in loans and bank deposits.

2.35. Towards the end of the Fourth Plan, the Government began to feel the need to institutionalise and regulate the monetary system. The economy had become more complex and dynamic, the demand for credit was increasing and a monetary policy was necessary to ensure that the financial sector made the maximum contribution to economic development. One of the first decisions in this, therefore, was to set up a monetary authority to carry out the functions of a central bank. As a result of this, the Royal Monetary Authority was established in mid 1982.

2.36. The Central Statistical Organisation of the Planning Commission initiated the building up of a consumer price index in Bhutan from 1977/78 by collecting at periodic intervals retail prices prevailing in a number of towns all over Bhutan. Many difficulties were faced particularly, a lack of accurate reporting and the absence of information on consumption patterns which have led to a number of methodological problems especially in the weighing of various components. Nevertheless, a review of prices between 1977/78 to 1981/82 (Table 15) is now available. The annual average rate of increase of prices works out to 13.44%. Although prices in Bhutan could reasonably be expected to conform to the movements in India in view of the large proportion of imports from India of consumption goods, the average growth of consumer prices in India is somewhat less at 9%. Even accounting for transportation and other overheads, the gap is still large and is indicative of a strong increase in demand and changing consumption patterns arising out of increasing development. The highest average increase, 24.57%, is in fuel and light which is not surprising as it is mainly because of increase in prices of petroleum products. Other sharp increases has been in furniture and utensils, miscellaneous goods and services and food--vegetables, edible oils and cereals etc. indicative of increase in demand and changing in recent years of consumption patterns.

Table 15 CONSUMER PRICE INDEX, 1977/78-1981/82

Items	1977/78	1978/79	1979/80	1980/81	1981/82	Average Annual Rate of Increase
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 Oil and Fats	100	110.15	126.92	137.76	149.36	12.34
Milk and Milk Prod.	100	119.53	128.11	144.96	155.31	13.83
Other Food and Index	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 ftwear	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 Utensil	100	120.50	125.46	140.63	174.73	18.68
Misc.Goods and Serv.	100	108.58	132.07	154.23	170.20	17.55
Average	100	112.09	127.19	139.35	153.74	13.44

Chapter III REVIEW OF DEVELOPMENT (1961-1981)

3.01. The economic conditions prevailing in Bhutan at the end of the Fourth Five Year Plan have been described in the previous Chapter. This has been the result of a consciously planned development process initiated under the dynamic leadership of His Late Majesty, King Jigme Dorji Wangchuck starting with the First Five Year in 1961. In the past 20 years of planned development, major structural changes in the economic situation in Bhutan has taken place and the predominantly rural barter economy has been progressively transformed into modern one.

3.02. This Chapter attempts an appraisal of the various development programmes in each sector in the past 20 years and explores strengths and weaknesses of past development experience. It is to be noted at the outset that each new Plan has not only been built upon the experience of the past has as

meant the introduction new elements and activities in which previous experience has been lacking. The approach of Government, however, has been generally cautious and the trend has been to explore new elements and activities on a small scale before replicating and expanding them in the light of experience gained.

OBJECTIVES OF NATIONAL DEVELOPMENT

3.03. Although the specific priorities of each Five Year Plan have varied, the two fundamental postulates of national economic policy have been to improve living standards of the people and ultimately achieve overall economic self-reliance. These postulates have required the removal of some major constraints in the development process which are:--

- a. lack of financial resources, particularly domestic resources;
- b. lack of skilled and technically qualified national manpower; and
- c. limited physical infrastructure and transportation difficulties.

The past Plans have, therefore, concentrated on major efforts to transform these structural characteristics. Accordingly, the specific objectives of the past Five Year Plans have been as follows:--

- a. the creation of social, physical and administrative infrastructure;
- b. undertaking investments to raise economic productivity especially in agriculture and animal husbandry--the occupation of the majority of the people so that productivity increases in these areas directly improve standards of living;
- c. increasing domestic resource mobilization by exploiting the natural resources of the country and creating and expanding a fiscal system;
- d. developing skills and fully utilizing national manpower resources;
- e. improving the quality of life of the people by providing basic social amenities such as education, health services, drinking water and a public distribution system;
- f. following a path of growth and social justice in order to prevent socio economic disparities;
- g. preserving the traditions and rich cultural heritage of the country and ensuring that the development process does not disrupt these traditions or adversely affect the environment.

3.04. In view of the constraints to economic development, it was inevitable that Bhutan would depend heavily on external assistance both financial and technical, including manpower. The First Plan was therefore, entirely financed from grants from the Government of India. In the Second Plan an amount of Nu. 2.2 millions or about 1% of the total outlay, was met from domestic resources and the balance from the Government of India. With the Third Plan, although Government of India assistance remained at a high 90%, almost 7% was financed from domestic resources and assistance from the UN system was received for the first time at 3% of the total outlay. In the Fourth Plan, Government of India remained the major contributor although its share declined to 77%. The UN system provided 17.5% of the total outlay while domestic resources contribution declined marginally to about 5.5% as resources were diverted to meet non-plan commitments.

3.05. Technical inputs and qualified manpower were initially drawn almost entirely from India and a number of Government of India organisations such as the Border Roads Organisation, the Geological Survey of India etc. were involved in the building of infrastructure. Although the number of expatriates continue to be high, their proportion to total skilled manpower has been declining and at the present time, almost all policy related positions in the Government are held by nationals.

EVOLUTION OF PLANNING

3.06. Although the planning process was officially begun with the First Plan in 1961, both this and the Second Plan were mainly financial budgeting exercises rather than an attempt to work out a framework of priorities. To implement these Plans, a self-contained Development Secretariat was established and directorates of agriculture, animal husbandry, health, education, power and information were created while the existing directorate of forests and the Bhutan Engineering Services (which later became the Public Works Department), were strengthened. The Planning Commission was established in 1971 and was entrusted with the preparation of the Third Plan. However, the Third Plan formulation was also relatively simple as there was only a small staff with limited experience and almost a total absence of basic economic information.

3.07. Major developments to consolidate the planning process took place in the Fourth Plan period by involving local bodies. The Dzongkhag Yargay Tshogchungs (District Planning Committees) in each dzongkhag were asked to submit proposals in areas of their direct interest: agriculture, animal husbandry, social services etc., which were taken into account by operational departments concerned and the Planning Commission while formulating the Plan.

3.08. In the first two Plans, evaluation was basically an ex-post audit of expenditures. In the Third Plan for the first time, physical and financial targets were specified and performance measured from time to time against them. This was further elaborated in the Fourth Plan period with physical inspection of the projects in the field and the Planning Commission was involved for the first time in this process.

3.09. The Planning Commission as it now stands consists of a Planning Division dealing with development policies co-ordination and overseeing Plan implementation. The Resources Division co-ordinates with the Ministry of Finance and Foreign Affairs on resources mobilization while the Central Statistical Organisation is responsible for developing the data base and undertaking special services.

3.10. Although the planning process has evolved in complexity and sophistication over time, there are several areas in which further improvements are essential:

- i. the statistical data base requires substantial improvements in order to produce reliable data both base line and time series, of the main macro economic variables, socio economic conditions, manpower and other resources;
- ii. there is need to induct and train specialized technical manpower in areas such as project and programme formulation, appraisal and cost benefit studies;
- iii. there is need to develop expertise for policy making in the monetary, fiscal, commercial and

industrial fields;

iv. a more comprehensive monitoring and evaluation system requires to be established so that timely corrective action can be taken in project implementation.

OUTLAYS AND PRIORITIES IN THE FIRST FOUR PLANS

3.11. In the absence of adequate experience in the past and the lack of a data base, development priorities were subject to continual review and change. Thus, the overall volume as well as composition of actual expenditures varied substantially from the original plans that were prepared. A review of the actual expenditures and performance is perhaps the best way of evaluating the changes in development strategies over time. As can be seen from Table 16, in terms of total expenditure the Second Plan represents a 90% increase over the First; the Third Plan, a 139% increase over the Second; and the Fourth Plan, a 130% increase over the Third. Development expenditure has, therefore, shown a rapid rate of increase, more than doubling every five years.

3.12. The highest priority in the First Plan was inevitably in ending Bhutan's state of isolation and building transportation links. Accordingly, 66% of the outlay went to the roads sector, and the main project was in the road link from Phuntsholing to Paro and Thimphu. A second major

Table 16 OUTLAYS AND FINANCING OF THE FIRST FOUR PLANS

	First Plan		Second Plan		Third Plan		Fourth Plan	
	(1961/62-1965/66)		(1966/67-1970/71)		(1971/72-1975/76)		(1976/77-1980/81)	
	Nu.Million	%	Nu.Million	%	Nu.Million	%	Nu.Million	%
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	--	--
Post 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 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
Total outlays	107.2	100.0	202.2	100.0	475.2	100.0	1,106.2	100.0

Financed by:								
Government of India Grants	107.2	100.0	200.0	98.9	426.6	89.9	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
Total Financing	107.2	100.0	202.2	100.0	475.2	100.0	1,016.2	100.0

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-electric project, which is being undertaken and financed outside the Plans. Chukha-related expenditures amounted to Nu. 26.6 million during the Third Plan period and Nu. 603.0 million during the Fourth Plan period. Development outlays under the Fourth Plan do, however, include expenditure on the Penden Cement Plant and the Gaylegphug Agricultural Project which was also financed separately by the Government of India and undertaken outside the Plan. Expenditures on these two projects amounted to Nu. 185.0 million. road in eastern Bhutan from Samdrup Jongkhar to Tashigang was also undertaken and work was initiated on the lateral road from Thimphu to Tashigang. With 9% of the total outlay being devoted to education, this emerged as a second important area in order to provide modern education to build up national manpower.

3.13. The Second Plan represented a widening of priorities arising from a significant drop in the share of the road sector to 40% of the overall outlay. Nevertheless, roads continued to receive the highest priority and for the first time, agriculture became a priority area receiving 10% of the overall outlay.

3.14. The Third Plan (1971/72-1975/76), was the first implemented under the Planning Commission although its preparation preceded it. The share of the roads sector further declined to 20%, however, most investments in roads took place outside purview of the Plan. Outlays for social services increased further in priority, with education at 19%, and health at 8%. Agriculture, especially extension activities, became more important with an allocation of 17% of overall outlay. Other sectors emerged for the first time in some significance with 5% to 8% of the overall outlay being allocated to forestry, power, mining and tourism. This was possible because the expansion of infrastructure for the first time, enabled the growth of economically viable activities.

3.15. The Fourth Plan (1976/77-1980/81), reflected the first major shift from the earlier pattern of development expenditure. This was also the first Plan in which the distribution of outlay was more balanced. Several large scale investments, some outside the Plan, emerged such as the Chukha Hydel Project, the Penden Cement Plant and a major irrigation scheme in the Gaylegphug area. Agriculture and related activities were for the first time, the highest priority amounting for 29% of total outlay. Industries also for the first time and forests as well, became significant priority areas.

The share of roads, education and health declined somewhat indicating that a basic infrastructure was built up permitting investment in revenue generating activities although on a small scale. This forms the genesis of the Fifth Plan approach to increasing investments in revenue generating activities to a high level.

3.16. Time series data relating to basic macro economic variables production levels etc., are not generally available till 1980. It is, therefore, not easy to estimate the quantitative effects of the programmes either on the growth of output in the various sectors or in accelerating the overall growth rate in national income. No data also exists whereby changes in the sectoral composition of output or investment/output ratios can be estimated. Therefore, an assessment of the changes achieved for the past 20 years has to be qualitative and can only be made by looking at the major developments in each sector of the economy.

AGRICULTURE

3.17. About 90% of the population is primarily dependent on agriculture. The contribution of this sector (including animal husbandry), to GDP in 1980/81 was estimated at 47%. Most cultivated land is owner operated, although there is some absentee landlordism in the west and land holdings are fairly equitably distributed with a legal limit of ownership of about 10 hectares, (25 acres) and an average holding of 1.6 hectares.

3.18. Bhutan has been traditionally self-sufficient in food grains exporting small surpluses but with population growth, the emergence of non-farming communities and some increase in per capital consumption, a deficit of 25,000 MT which is imported from India, supplements indigenous production of 125,000 MT of cereals. The main cereal crops are paddy, maize, wheat, barley and buck wheat. Paddy is the preferred crop and is grown mainly under irrigated conditions at altitudes upto 2500 meters; maize is the dominant crop in the dry areas and wheat and barley are taken as a second crop at higher elevations. Buck wheat and millet are subsistence crops in the northern region. Cultivation practices have changed little and remain largely labour intensive with labour being shared during periods of peak demand. Labour shortages have influenced farming practices. Cropping intensities range from 160% in the west to 135% in the east, reflecting population pressures.

Table 17 CROPPING INTENSITIES BY LAND TYPE (1981)

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

Table 18 CROPPING PATTERNS BY LANDTYPE (1982) (000 ha)

	Wet Land	Dry Land	Tsheri Land	Total
--	-------------	-------------	----------------	-------

Land Area	27.0	65.3	40.0	132.9
Cropped Areas				
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
Bk/wheat and Millet	1.4	11.5	2.6	15.5
Soybean	--	1.0	0.1	4.0
Mustard	0.4	2.5	0.1	4.0
Potato	0.5	2.8	0.1	5.0
Other	0.2	1.4	0.1	5.0
Total	36.4	75.9	9.6	121.9

3.19. In the past, increases in production came mainly from increases in the area under cultivation and that brought under assured irrigation. The gross cropped area under cereal production increased from 81,000 hectares in 1973 to 113,000 hectares in 1982. However, the possibility of future production increases as a result of further extension in cultivated area is limited and increases in production will have to come from more intensive cultivation practices including the use of modern inputs, the consumption of which is still considerably low.

Table 19 AGRICULTURAL AREAS AND PRODUCTION (1982)

	Area '000 hectares	Production Gross	'000MT Net
CEREAL CROPS			
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 Millet	15.5	12.3	8.9
Total	112.6	163.7	125.1
OTHER ANNUAL CROPS			
Pulses	4.0	2.4	2.4
Mustard	2.9	1.9	1.9
Potato	3.7	24.9	24.9
Chillies and Vegetables	3.1	12.2	12.2
Total	13.7	n.a.	n.a.
HORTICULTURAL CROPS			
Orange	6.2	25.6	25.6
Apples	1.5	3.3	3.3
Cardamom	5.9	2.8	2.8
Other	--	0.8	0.8
Total	13.6	n.a.	n.a.

n.a.--Not available

3.20. Programmes in the first four Plans can be divided into two categories--the first relating to the establishment of agricultural support services and institutions and the second covering land development and irrigation schemes. By the end of the Fourth Plan, extension centres had been established in all 18 districts along with a net work of agriculture farms engaged in seed production

and varietal trials which is about the limit of the capability of agricultural research at present. Although a number of new varieties have been introduced and have gained wide acceptance, the impact of the extension system on agricultural productivity cannot be accurately quantified. Nevertheless, there is no doubt that there has been a profound impact on the traditional system of agriculture and one of the most important achievements of agriculture development programmes has been to bring about a distinct and favourable change in farmers' attitudes towards modern scientific practices.

3.21. An area in which there has been a massive impact has been in the production of cash crops such as potatoes, apples, oranges, cardamom etc., which speaks for the farmers' instinctive appreciation of comparative advantages. The varied agro-climatic conditions in Bhutan are particularly suitable for cash crop cultivation aimed at export to India as harvesting coincides with Indian lean periods.

3.22. The widespread prevalence of Tsheri (shifting) cultivation which accounts for roughly 1/3rd of the cultivated area, has been a cause of concern. However, limited experiments in the permanent settlement of these communities have been highly successful and this is one area which will need to be actively pursued in future.

3.23. Irrigation and land development programmes have accounted for a major share in budgetary allocations in the agriculture sector. The thrust has been in improving and remodelling existing small scale systems and constructing new systems based on traditional experience. Labour has been traditionally contributed by local farmers and Government has provided technical support, construction materials, and some direct subsidies, particularly in the area of terracing and contour Bunding. The experience with larger scale projects has been limited and mixed; these include a lift irrigation scheme covering 800 hectares in Gaylephug (Phase II of this project and two new gravity schemes would irrigate about 4000 hectares in this area, the largest contiguous area suitable for irrigation in the country).

ANIMAL HUSBANDRY

3.24. Animal Husbandry is an important component of the rural economy in Bhutan playing a vital subsistence role and in the northern alpine region is virtually the sole form of economic activity. The consumption of animal products is an important element of the Bhutanese diet. In settled area, cattle are kept for draught power and milking purposes with most milk being processed and consumed as cheese, curd or butter and keeping of chickens and pigs is fairly widespread.

3.25. As in the case of agriculture, it is difficult to quantify in terms of productivity and overall production the impact of livestock development programmes. The thrust so far has been four fold-- the improvement of existing stock by introduction of exotic blood; expanding health coverage and execution activities; building up a net work of livestock farms and other support services and pasture development. A notable achievement of the veterinary programmes in the past has been the control of tapeworm cyst infection in yaks, leading to a remarkable fall in the mortality rates in this animal on which a large segment of the alpine population are solely dependent.

Table 20 LIVESTOCK OWNERSHIP ('000)

	West	Centre	East	South	Total
Cattle	66.1	41.8	108.6	100.5	317.0
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
oats	--	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

3.26. Pasture in terms of area is considerable but of poor quality and traditional areas tend to be over grazed. A significant increase in livestock population and quality would be dependent on improvement of pasture but success in this area has been somewhat limited especially due to lack of communications. There has been a gradual increase in the populations of cross breed cattle, pigs, poultry and sheep and especially, notable successes have been registered in the introduction of exotic pigs and sheep. As in agriculture, extension activities so far have led to a distinct change in farmers' attitudes towards scientific rearing practices. It is, in this context that the development of pastures assumes importance as this is likely to emerge as a limiting factor for future livestock development.

AGRICULTURE MARKETING

3.27. In view of the difficult terrain and the rural sector in Bhutan is still transition from barter to a monetized economy, the role of the market is still limited. Prices are, however, generally determined by open market forces although the Food Corporation of Bhutan operates a support price system both for food grains and cash crops while at the same time operating a public distribution system. The FCB's domestic procurement of food grains has mounted of late to about 300 MT annually--10% of its normal imports from India. Procurement activities are localized in the absence of an adequate network of downs and procurement centres. The principal of market intervention in the limited areas in which the FCB has operated, has helped farmers to secure reasonable prices. The FCB's role in the procurement of cash crops has also been of help in keeping prices at remunerative levels, although this has at times led to the FCB having to undertake considerable losses.

FORESTRY

3.28. Forests represent one of the most important potential sources of wealth in Bhutan and in the past, revenue from this source has been the largest single contributor to the national exchequer. Forestry directly contributed about 16% of GAP in 1980/81; in addition, about half of the industrial units are wood-based. Royalties and taxes have also accounted for 14% of (adjusted) Government revenues. However, both these contributions fell significantly between 1979 and 1981 because of restrictions on commercial logging.

**Table 21 COMMERCIAL LOGGING
VOLUMES AND FORESTRY REVENUE,
1976/77-1980/91**

Commercial Logging (cubic meters)	Forestry Revenues (Nu. million)
---	---------------------------------------

1976/77	143,247	2,987
1977/78	114,995	7,112
1978/79	13,102	11,025
1979/80	102,518	2,891
1980/81	28,299	749

3.29. The Government recognized quite early that forests represents a valuable resource which had to be scientifically managed and one of the first directorates to be set up was that of forest established in 1959 which has since then expanded substantially. As indicated in Chapter 1, a pre investment survey of forest resources was carried out between 1974 and 1979 as the first step towards scientific management. Regulation of private activities in the forestry sector in order to prevent over exploitation and damage has been of major concern and a considerable body of legislation has been passed to regulate entry, exploitation, royalties and movement of forestry products. The 1969 Bhutan Forest Act defined a Government Reserve Forests and circumscribed individual rights on them. In 1974, a National Forest Policy Act was passed which further spelt out various aspects of forest utilization, development and conservation. Further changes were made in 1979 to control exploitation and all forest felling was nationalized which led to a temporary decline in commercial harvesting owing to the department's lack of adequate capabilities in this area.

3.30. Apart from legislation and control, the first four Plans concentrated on the establishment of a physical, administrative and technical infrastructure to undertake forest management. Following the pre-investment survey, the preparation of management plans and demarcation and survey of forests has been undertaken. In the absence of the management plans, scientific forest exploitation was limited in 1980/81 accounting for only 0.2 million cubic meters as against the estimated net annual yield of 13.3 million cubic meters.

3.31. Forest harvesting has also been severely constrained by lack of roads and logging equipment. To remedy the situation, 100 kms of forest roads have been constructed and three mechanized logging centres have been established. However, the constraints have resulted in the over exploitation (especially by private individuals) of the more accessible forest areas. In order to reverse this process, programmes of afforestation and social forestry have begun to emerge as important areas of forestry development.

TRANSPORT INFRASTRUCTURE

3.32. The development of a motorable road network was taken up for the first time with the advent of planned development in 1961 when the Bhutan Engineering Services (now the Public Works Department, started construction of Bhutan's first motorable road from Phuntsholing to Paro and Thimphu. The absence of any kind of motorable road before this has led to the roads sector getting the highest priority in the first four Plans. In addition to the Public Works Department, the Indian Border Roads Organisation came to be involved in the construction of major roads and the plan allocations do not fully reflect the total investment in roads in the past as the Border Roads Organisation funded a large portion of construction of some of the main highways from its own budget and also the component of free voluntary labour in Public Works Department constructed roads have been high.

3.33. Due to the difficult hilly terrain, the dispersed structure of habitation and severe and varied

climate, road construction costs are high, estimated at between Nu.500,000 to Nu. 750,000 per kilometer. Roads have been generally well designed following the Indian Roads Congress standards. Highway gradients seldom exceed 5% and districts roads have gradients upto 8%. Drainage and surface are good.

3.34. By late 1982, there were 2,050 kilometres of roads in Bhutan of which about 1200 kilo meters are black topped and the rest, earthen. This gives a road density of .044 kilometer per sq. km of land area which is low. By 1982, all but two dzongkhag headquarters have been connected by roads along with most other important towns and industrial areas. At present there are three major north-south black topped highways in western, central and eastern Bhutan and one fair weather lateral road running from Thimphu in the west to Tashigang in the east.

3.35. There are apart from the terrain, other major constraints in road construction which include a paucity of graduate national engineers and labour. Labour has traditionally been provided by levies but owing to its interference with agriculture, gradually, contracted expatriate labour has been brought in. Mechanized road construction was introduced on a small scale for the first time in the Fourth Plan and presents a possible means of overcoming the labour constraints. This programme is proposed to be expanded substantially in the Fifth Plan.

3.36. Foot and mule tracks have long provided the principal means of transportation for most of the population and can be expected to continue to play an important role for many years to come. The main problem in foot travel has been the swiftly flowing rivers which necessitate long detours. Recognizing this as a serious constraint, Government has undertaken the improvement of foot tracks and the construction of foot suspension bridges at strategic points. 80 such bridges have been constructed till the end of the Fourth Plan and as a programme, has been particularly successful in improving communications. The use of ropeways for carrying specific cargoes has so far been limited. Ropeways installed so far include a 6 KM ropeway at the Penden factory and a 500 meter ropeway at a slate mining site. A detailed feasibility study of a 60 KM ropeway from Chuzom to Phuntsholing in western Bhutan is being carried out for a capacity of 50,000 MT per annum.

3.37. Table 22 indicates the number of registered vehicles in Bhutan as of 1982. The number of vehicle is still relatively low and except in the urban areas, traffic is generally light. A Bhutan Government Transport Service was formed in 1962 and currently has a monopoly only in passenger services. A syndicate for freight transportation was set up in 1976 had till quite recently, virtual monopoly on freight movement but has been dissolved leading to a free market situation. Although the growth of registration stands at 3 to 4% annually, total motor vehicle taxes in 1981 /82 cover only about one fourth of the total road maintenance cost.

COMMUNICATIONS

3.38. Communications facilities, were virtually non-existent before 1962 but have been expanding very rapidly inspite of the difficult terrain and lack of trained personnel. The postal services which is the most common communications means, have become quite comprehensive. By the end of the Fourth Plan, there were 83 Post Offices, of which 30 were part time branch Post Offices and 25 Telegraph Offices. With the innovative use of 140 permanent runner lines, most of the population is within reasonable and timely reach of mail services. International mail is routed to | India. Philatelic

Stamps have now gained an international reputation for high quality.

Table 22 REGISTERED VEHICLES (as of October 1982)

	Government	Private	Public	Taxi	Total	
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	45	410	-	-	-	455
TOTAL	1,285	1,115	221	69	69	2,690

3.39. The telephone system comprises three sub systems which are not inter-connected: Thimphu--Phuntsholing, Tongsa--Gaylegphug and Tongsa Samdrup Jongkhar. There are 14 telephone exchanges, 13 of them automatic with a total of 1900 connections. International calls presents considerable difficulties and are routed through the Indian telephone system. However, a micro-wave communications link between Thimphu and Hasimara in North Bengal, with a 30 channel capacity is scheduled to be commissioned by ending 1983. A civil wireless network more comprehensive than the telephone system now exists with 28 transmitting and receiving stations throughout the country and services are available to the public.

Table 23 PER CAPITA ENERGY CONSUMPTION, 1981/82

	Gross Consumption		Useful Energy (a)	
	TOE	Percent	TOE	Percent
NON-COMMERCIAL ENERGY				
Fuelwood	0.722	94.8	0.108	83.7
COMMERCIAL ENERGY				
Coal	0.026	3.5	0.015	11.2
Petroleum Products	0.011	1.4	0.005	3.8
Electricity	0.002	0.3	0.002	1.3
Sub-total	0.039	5.2	0.022	16.3
TOTAL	0.761	100.0	0.130	100.0

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

ENERGY

3.40. Bhutan's immense forest resources provide an abundant source of firewood and per capita energy consumption amounts to a high 0.76 tonnes of oil equivalent (TOE). Since most of it is firewood, discounting for the low and use efficiency of most firewood burning technology, per capita consumption amounts to 0.13 (TOE). Firewood alone accounts for almost 84% of the useful energy consumed at an average national consumption of 3 cubic meters per capita. However, although at present there are no restrictions on the use of firewood for household energy, the Government is concerned at the rapid rate of forest depletions and proposes to adopt a long term strategy of replacing firewood consumption by electricity.

3.41. Commercial energy consumption accounts for only 15% of the useful energy consumed--low by most standards--and is accounted for by coal (66%), petroleum (289/o) and electricity (5%). Coal is used exclusively in industry and petroleum products for road transport and lighting (Kerosene)

3.42. In spite of the enormous hydro-electric potential of Bhutan' rivers, electricity consumption is among the lowest in the world. The first hydro-electric plant went on stream in 1967 and there are at present six small units all over the country which are supplemented by diesel generating sets. The total installed capacity is 12.07 MW of which only 3.45 MW is hydro power. Power generation is supplemented by imports from India which feeds southern, Bhutan. The transmission network at present consists of small capacity 11 KV and 33 KV lines. So far 21 townships and 97 villages have been electrified resulting in a change in the consumption pattern which from a level of 80% domestic consumption at the end of the Third Plan had reached by 1981/82 to 45% industrial and commercial, 45% domestic and 10% agriculture.

3.43. The situation in western Bhutan will undergo a sea change by 1984 when power from the Chukha hydel project becomes available. This project by far the largest single investment ever taken up in Bhutan, is a run of the river scheme on the Wanghcu river with a total capacity of 336 MW consisting of four 84 MW turbines. Annual energy is expected to be about 1970 GWH with about 900 GWH in firm power. A Project Authority, an autonomous body with representatives of the Royal Government and the Government of India executes the project. The entire cost which is at present estimated to be close to Nu. 2,000 million, is being mt by India of which 60% would be a grant and 40% an 18 year loan carrying an interest of 5%. With the commissioning of the project, Bhutan will emerge as a net exporter of power.

Table 24 DOMESTIC ELECTRICITY GENERATION AND PURCHASES FROM INDIA,1977/78 -1981/82 (in GWh)

	1977/78	1978/79	1979/80	1980/81	1981/82
DOMESTIC GENERATION					
Hydro	5.488	6.080	6.173	7.314	7.577
Thermal	-	-	0.502	0.845	0.678
Sub-total	5.488	6.080	6.675	8.159	8.255
PURCHASES FROM INDIA	n.a.	n.a.	1.946	2.464	n.a.
	n.a.	n.a.	8.621	10.623	n.a.

n.a.--Not available.

Table 25 ELECTRICITY CONSUMPTION PATTERNS IN SELECTED SUB-SYSTEMS (in percent)

	Domestic	Commercial	Industry	Public Lighting	Total
Wangdiphodrang	98.1	0.6	1.1	0.2	100.0
Tashigang	93.8	1.8	2.1	2.3	100.0
Mongar	76.1	7.7	6.4	9.8	100.0
Phuntsholing	46.2	26.9	17.6	9.3	100.0
Samdrup Jongkhar	75.5	15.6	1.6	7.3	100.0
Thimphu	n.a.	n.a.	n.a.	n.a.	n.a.

n.a.--Not available

Table 26 POWER GENERATING CAPACITY

Generating Station	Installed Capacity
HYDRO STATIONS	
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	4x 100 KW
Sub-total	3.450 MW
DIESEL GENERATING STATIONS	
	2 x 128 KW
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 Hydel Project	10 x 248 KW
	4 x 128 KW
	6 x 44 KW
Penden Cement	3x 830 KW
Sub-total	8.621 KW
TOTAL	12.071 MW

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

3.44. Manufacturing industry accounts for a little over 3% of GDP, below the average for least developed countries. Cottage industries account for 25% of this contribution. The total employment

in the organized sector is only about 2,000 with 75% being expatriate. One food processing unit, three distilleries and a 300 tonnes per day cement plant which has recently gone on stream at Penden, accounts for two thirds of current industrial production and also two thirds of industrial employment of which the Penden Cement Plant alone accounts for one half of employment. Apart from the food processing unit which is in the joint sector, the other are in the public sector.

3.45. Apart from these, over 60 units have come up over the past 10 years most of them in the small scale sector located in the main industrial estates at Phuntsholing, Samdrup Jongkhar and Gayleghug. These produce basic consumer goods including soap, candies, wooden and steel furniture, and simple processed food stuffs. Almost half of them are wood based producing gum resin, matches, tea chests, packing cases and sawn timber. Apart from traditional handicrafts, there are some 300 rural agro industries comprising rice, wheat, maize and oil mills.

Table 27 INDUSTRIAL PRODUCTION BY SECTOR, 1980/81

	Nu.million	Percent
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	8	5.5
TOTAL	145	100.0

3.46. Industrialization is severely constrained due to lack of power and other basic infrastructure, trained manpower and entrepreneurial skills. With the commissioning of the Chukha hydel project, power would become abundantly available and the development of a entrepreneurial class and provision of trained manpower would become the critical factors in promotion of private sector industrial investment. Past experience in this area has been mixed and costly but with a number of lumpy investments being made in the Fifth Plan, viable investment opportunities in ancillaries would become available for the induction of an entrepreneurial class.

3.47. Excluding the limestone mining operations of the Penden Cement Plant, other mining activities accounted for only 8% of GDP despite the country's good mineral endowment. Mining is constrained by lack of accessibility, high operational costs and lack of power. Mining activities consists of slate, marble, coal, dolomite and limestone. At present, mines are auctioned to private operators for fixed periods of time.

TOURISM

3.48. In the potential to earn foreign exchange, Bhutan's tourism industry ranks very high. The country, located in the Himalayan ranges, with its unique cultural heritage and exotic flora and fauna, has considerable tourism potential. While recognizing these facts, Government has followed a strategy of regulating the number of tourists coming into Bhutan and have allowed foreign tourists to come only in package tours. Consequently, although the country has been open to tourists since 1974, only 7800 tourists visited Bhutan by 1981 /82 and peak tourist arrivals were recorded at 1621

in 1979/80. Receipts from tourism amounted to US \$ 1.4 millions in 1981 /82.

3.49. Almost the entire tourism infrastructure is owned by Government which has invested Nu. 15.2 millions in tourism facilities including Nu. 12.2 millions in hotels. Although good quality hotels in the private sector are now coming up, especially in Phuntsholing and Thimphu, most bed capacity is still in the public sector: the daily bed capacity in the four hotels owned by the Government is about 200 in three locations, but the overall occupancy rate has been around 17% in view of the low level at which tourist arrivals are regulated.

3.50. A review of the financial performance of the tourism sector was conducted as part from the 1982 operations for streamlining Government owned commercial activities. The main findings are given in the following table :

Table 28 TOURISM INCOME AND EXPENDITURE, 1975/76-1981/82 (Nu. million)

	Income	Expenses Before Depreciation	Surplus Before Depreciation	Depreciation	Net Surplus
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	12.60	7.84	4.76	1.40	3.66
TOTAL	51.31	33.06	18.25	6.96	11.29

3.51. The survey indicated that tourism earned an average rate of return of 15% on the fixed investment. As part of the steps taken to remove commercial operations from the budget, the Tourism Commercial Corporation consisting of hotels, transportation services, and tour operations was established in 1982 and it is proposed to restructure the capital base on a 1: 1 debt equity ratio.

3.52. The strategy followed so far has proved to be sound although returns have been modest. Tourism has not created in Bhutan the cultural and environmental problems of many other tourism oriented economies. On the other hand, tourism infrastructure at present has an excess capacity and it is therefore targeted to increase the number of tourists visiting Bhutan from 1406 in 1980/81 to 4700 by 1986/87 increasing gross foreign exchange receipts from US \$ 1.4 millions to about US \$ 4 millions over the same period. Although numbers and earnings will increase, the basic strategy will continue to remain the same.

HUMAN RESOURCES

3.53. One of the main constraints to planned development and expanding the size of the economy has been the lack of manpower, especially trained manpower. This arises from the small population as well as the absence of training and educational facilities till recently. In one important sense, population is not an issue in Bhutan unlike most other countries in Asia nor does it have the related

problem of urbanisation. In fact, Government has been conscious of the need to seek a movement of labour from the rural to the modern sector while improving the productivity of rural labour. Table 29 gives labour force and employment estimates which indicates that 94% of the labour is still engaged in agriculture. It is also estimated that there are 46000 persons engaged in wage employment and as given in Table 30, three quarters were expatriates. As of end 1980, the supply of trained national manpower was only about 2500 of which 230 were graduates (including only 35 engineers and doctors) less than half the teachers and 20% doctors were nationals. In this light, the importance of education in producing trained manpower has been one of the highest priorities in planned development. Since 1961 starting from scratch, not only has a modern general education system been established but a number of specialized institutions in agriculture, animal husbandry, forest, engineering, health and education to trained skilled manpower, especially at the technician/operational levels, has been established. The present enrolment in such institutions is about 500 and these institutions have helped in substantially increasing the nationals at these levels.

3.54. There were by the end of the Fourth Plan, 143 primary and secondary schools and 6 central high (integrated) schools with a total of about 36000 students. There is also a junior college with an enrolment of about 200 students and there are 500 students studying at various levels outside the country.

3.55. The policy followed in general education so far is to have a five year primary education succeeding a two year pre-school education, ultimately to extend to all children in the concerned age group in order to promote universal literacy as early as possible. Apart from basic literacy skills, the purpose of primary education is to orient students in activities of direct vocational impact, especially in farming techniques, which will benefit the majority of the school going population which are expected to return to the farms.

Table 29 LABOUR FORCE AND EMPLOYMENT ESTIMATES

	Number ('000)	Percent of Total
Agriculture	613.0	94.3
Industry	6.0	0.9
Trade	9.0	1.4
Public Services	22.0	3.4
Total Labour Force	650.0	100.0

Table 30 STRUCTURE OF MODERN SECTOR LABOUR FORCE (As of March 1982)

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

Table 31 SCHOOL ENROLMENT BY LEVEL OF EDUCATION AND GOVERNMENT CEILINGS (1982)

Level of Education	Actual Enrolment	Government Ceiling
Pre-School Education		
Lower Kindergarten	9,691	Unlimited
Upper Kindergarten	7,675	
Primary Education		
Class I	16,446	
Class II	4,995	
Class III	3,805	
Class IV	2,745	
Class V	2,047	
Sub-total Pre-School and Primary Education	37,404	
Secondary Education		
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 Secondary Education	2,660	5,700
Junior College		
Class XI	123	300
Class XII	103	300
Sub-total Junior College	226	600
Total Education System	40,290	

3.56. Beyond the primary stage, entry into the educational system is to be selective, based on merit and ceilings have been prescribed for enrolment in higher institutions and only a selected few would be eligible for graduate level education for which Government undertakes to bear all expenses. This has been conceived both to ensure that scarce manpower is effectively utilised in accordance with manpower requirements, as well as to avoid the building up of a pool of unemployed educated. The following Table 31 indicates ceilings prescribed in actual enrolment levels at various stages; as can be seen, as of April 1982 actual enrolment has been less than half of the ceilings prescribed at various stages. Consequently, no meaningful conclusions regarding the strategy can be drawn at this stage.

HEALTH AND NUTRITION

3.57. The average health expectancy in Bhutan is about 46 years with an infant mortality rate estimated to be 117 for every 1000 births. Morbidity statistics are not generally available but most common diseases are gastro intestinal infections from water borne parasites. In addition, the incidence of respiratory ailments, tuberculosis, malaria and goitre are high. The expansion of basic health facilities has been impressive since the advent of planned development in 1961 but as can be seen from the following Table, the situation is still not satisfactory. The major constraints have been the available of trained medical personnel and a health school has been established with a capacity of training 12 persons in each category of para medical discipline. There were at the end of the

Fourth Plan, 92 nurses, 39 basic assistants, 6 auxiliary nurse midwives, and 36 basic health workers. Of 64 doctors only 14 were nationals.

3.58. The basic health structure consists of primary health coverage through 42 Basic Health Units, 40 dispensaries, 13 district hospitals and 3 referral hospitals at Thimphu, Gaylegphug, and Tashigang. There is one hospital bed for every 2000 population. Referral hospitals which are generally well equipped, treat cases referred to by district hospitals and district hospitals having about 20 beds each. The BHU's constitute the core of the public health system and headed by a Health Assistant, these provide simple curative services and from these emanate basic preventive and disease control programmes. These also record vital statistics. Dispensaries staffed by a compounder provide only rudimentary facilities.

3.59. A number of special preventive and curative measures have been developed catering to mother and child care, an extended immunization programme, control of tuberculosis, malaria, goitre and leprosy.

3.60. Environmental health conditions are unsatisfactory and only about 8% have access to safe drinking water. Urban water supply programmes were initiated in the early sixties and although piped water is available in all but four urban centres, only half of the urban population is effectively covered. Rural piped water supply schemes were started in the Third Plan and till the end of the Fourth Plan 250 schemes were completed which have had a significant effect in controlling water borne disease in these areas. This programme is to be substantially expanded in the Fifth Plan.

Table 32 HEALTH INDICATORS (a)

	Bhutan	Average for low income Countries
MEASURES OF HEALTH STATUS		
Crude Birth Rate per 1,000 Population	41	31
Crude Death Rate per 1,000 Population	21	12
Life Expectancy at Birth	43	57
Infant Mortality Rate per 1,000	117	94
FACTORS INFLUENCING HEALTH		
Population per Physician	19,000	5,810
Population per Nursing Personnel	13,000	4,840
Percentage of Population with Access of Safe Water	8	31
Calorie Supply as Percentage of Requirement	90	97
Adult Literacy Rate (%)	10	50

(a) Selected years, 1977-80.

Chapter IV APPROACH TO THE FIFTH PLAN

4.01. The Fifth Plan represents a watershed in Bhutan's socio-economic development. The first four Plans had similar priorities in the sense that starting from scratch, a substantial infrastructure had to

be built up. Investment had to be fairly widespread as the simultaneous development of a large number of interdependent sectors was necessary. Development priorities were largely circumscribed by the lack of trained personnel and the absence of communications and cheap energy. However, initial capital formation resulted in shifting the delicate balance of the self sufficient economy by increasing Government commitments to maintain the assets created without a matching expansion of the taxation base and internal resources fell progressively short of Government commitments. Resources for development were, however, not a constraint as absorptive capacity was low and both budgetary support as well as project tied assistance was available from external sources.

4.02. With the infrastructure created as a result of the past development effort although still not adequate, it has become possible to step up substantially the investment required to exploit the country's natural resources particularly, hydro power, forests and minerals. On the other hand, past development effort has given rise to rising expectations and a situation has arisen in which a minimum acceptable rate of growth has now emerged, in addition to the issue of greater distributional equity. The increased absorptive capacity and the desired scale of development requires an investment level unprecedented in the past. The availability of resources both internal and external, and the desired scale of capital formation places on the Government difficult choices of priority for the first time in as much a real financial constraint has now emerged.

OBJECTIVES & STRATEGIES

4.03. Although the basic objectives of past planned development in Bhutan continue to be valid, the experience of economic development over the past 20 years has brought about the need to further elaborate these objectives in the Fifth Plan. The rising expectations of the people as mentioned above, has had to be taken into account. A second major concern has been that Bhutan's traditional self-reliance society has been in some ways disturbed over time by the development process itself and has led to progressively increasing dependence on external aid. This concern was voiced by His Majesty the King in his coronation address of 2nd June, 1974.

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".

In addition, His Majesty also felt that the development process of which Government has been the prime mover, has made the people more heavily dependent on Government and that the people themselves were not directly involved adequately in the development process.

4.04. Stemming from these concerns, the specific objectives for the Fifth Plan arrived at after considerable debate initiated by His Majesty, are as follows:

- a) to achieve an acceptable and sustainable rate of growth of the economy.
- b) to attain over time, economic self-reliance and specifically in the Fifth Plan, to attain a level of internal resources generation adequate to cover the normal maintenance expenditure of Government.
- c) to achieve greater distributional equity among various sections and regions.

d) to involve the people directly in the planning and execution of development programmes.

4.05. In the light of these objectives, His Majesty has enunciated five major strategies that need to be followed in the formulation and implementation of the Fifth Plan. These strategies are:--

1. dzongkhag self-reliance
2. decentralization of development administration
3. people's participation
4. control of maintenance expenditure
5. mobilization of internal resources

POLICIES

(A)DECENTRALIZATION

4.06. Major policy changes have been necessitated both because of the size of the Fifth Plan as well as the framework of objectives and strategies. The first major policy change is in respect of decentralization of the formulation and implementation of the Plan. It is expected that as a result of the decentralization process, people's participation in the development effort would be substantially expanded and plans formulated at the dzongkhag level would reflect the specific priorities of the individual dzongkhag and would ultimately cause an orientation of the entire development effort towards making each dzongkhag self-reliant. It has been long felt by His Majesty that the development process so far has progressively given the feeling to the people that it would be the Government alone which would bring about major improvements in their living conditions. As a result, rising expectations has been increasingly translated into demands on Government. It is recognized that no development effort can succeed without the people's co-operation and commitment and effective development cannot be only a top down process. While Government would give the lead in the overall direction of development and provide for resources and technical inputs which are beyond the capacity of the people, plans would have to be formulated in consultation with the people in order that these plans reflect felt needs and execution is within the capabilities of the people. It is the Government's conviction that only when these conditions are satisfied and effectively pursued that the benefits of development would actually reach all sections of the population leading to increased distributional equity.

4.07. The mobilization and participation of the people in development activities also implies that they have a primary responsibility for their own progress. Accordingly, the Dzongkhag Yargye Tshokchungs (District Planning Committee) which were set up in the Fourth Plan in each dzongkhag have been given a more effective role. The DYT is headed by the Dzongda and the members are the representatives of the people members of the National Assembly, village gups and mandals and elders. The primary responsibility of the DYT is to form a bridge between Government and the people and the DYT's have actually carried out the formulation of each dzongkhag Plan within the overall framework provided by Government. In addition, the DYT has been made responsible for supervising the implementation and on the basis of regular reviews, to formulate each annual Plan. It is also the responsibility of the DYT to ensure that the Plans prepared are in keeping with the capability of the people to provide voluntary labour which will form a major input both for execution of Plan projects and maintaining them on completion.

4.08. Accordingly, all activities which have a bearing on rural development and which are self-

contained within a dzongkhag have been decentralised to the dzongkhag level. Those activities which cannot be effectively decentralised viz. those activities requiring sophisticated technical inputs and efforts; activities which have an impact in more than one dzongkhag or the country as a whole and activities in which economies of scale operate beyond the dzongkhag level, have been kept out of the decentralised system. All other activities form part of the dzongkhag Plan. The individual dzongkhag's Fifth Plans have been prepared accordingly, and each plan reflects the needs and specific priorities of the dzongkhag concerned within the overall national framework of priorities. Plan formulation has been left largely to the DYT's. The central departments have only given technical guidance and final approval of the dzongkhag Plans have been given for each dzongkhag by His Majesty himself.

4.09. In order that the dzongkhag level capability for planning and implementation is enhanced, the administration at the dzongkhag level has been considerably strengthened. A Dzongda Wongma has been posted for each dzongkhag to function directly under the Dzongda and made responsible for the entire development effort. In addition, technical staff of all operational departments--agriculture, animal husbandry etc. have been placed directly under the Dzongda. Accounting staff has also been posted and new administrative and financial powers have been delegated to the dzongkhag level. The role of the central departments, the Dzongdas and the DYT's have been more clearly defined resulting in more co-ordinated and closer relationships between the three.

(B) COMMERCIAL ACTIVITIES

4.10. The promotion of self-reliance, the other major important aim of the Fifth Plan involves a three pronged policy framework consisting of increasing investments in revenue generating activities which is one of the two fundamental elements of the Fifth Plan structure; the streamlining of commercial operations and the reduction of maintenance expenditure by a reorganisation of the Government machinery and streamlining the budgetary system. This will be supplemented by a thorough review of the tax structure and the public finance system in order to increase the revenue yields from the current and expanded tax base in future.

4.11. The investment in revenue generating activities would be in the areas of industries, forests, tourism and power the total investment in these projects in the Fifth Plan is about Nu.159.6 million constituting 37% of the total Fifth Plan outlay. This involves the shift referred to earlier from basic infrastructure towards directly productive investments. The Government recognises that many of these investments would be considerably large and with little experience of undertaking such large investments in the past, the costs and benefits of such investments must be evaluated completely before taking an investment decision. Such evaluation exercises as may be required in the form of pre-feasibility and feasibility studies have already been initiated. In some cases this may mean that the time frame of investment would be longer and many of these projects may only be taken up in the last years of the Plan and may also spill over into the next Plan period.

4.12. The streamlining of existing commercial operations in order to make them viable and contribute to revenues of Government is a major policy area in the Fifth Plan. Over time, in the absence of a private entrepreneurial class, Government has undertaken a number of activities of a commercial nature in addition to development of public utilities. Prior to 1981 all these activities were supported by the budget. Gross receipts were incorporated in the budget and taken as part of revenue while operating expenses were budgeted on the expenditure side. As a result, the actual

performance of many of these undertakings lay hidden under a maze of budgetary figures and in many cases there was a net outflow from the exchequer representing operational losses. In all other cases barring the rare exception, although net operating cash surpluses were recorded, these did not reflect the true profitability as no cost of capital nor depreciation was provided for. In order to streamline the operations of these undertakings Government has undertaken a detailed review of the systems and procedures as well as the structure of these undertakings. With the help of management consultants, corporate structure, valuation of assets, accounting and management information systems are being installed. It is Government's intention that, to the extent possible, the undertakings should function autonomously and in pursuance of that aim, from the 1981/82 budget onwards, gross receipts and operating expenses are no longer reflected in the budget and has been substituted by targeted magnitudes of operating surpluses and losses. Once the functioning of the undertakings is streamlined, most would be expected to show commercial profits and contribute to Government revenues. It is, however, recognized that some of these undertakings, especially of the public utility type, cannot be expected to generate profits without pursuing unrealistic pricing policies which could be detrimental to the public interest. Nevertheless, in order to promote operational efficiency, real costs must be reflected. Government in such cases would guide pricing policies and subvent losses on a pre-determined basis and such undertakings would be expected to function within the norms of efficiency determined by Government subvention. Closely connected with the streamlining of commercial operations and the undertakings of new investment is the question of efficient management. It is the Government's intention that a management ethic should be nurtured in such undertakings and the selection training and placement of suitable managerial personnel and the building up of sound management cadres would be of the highest importance. There is also the delicate matter of the degree of autonomy which, such undertakings should enjoy and the kind of control that the various elements of Government should exercise as these are critical to efficient operations. Government has initiated studies to build up detailed guidelines and procedures relating to autonomy, Government control, the building up of a sound management ethic. As the public sector is expected to grow substantially at least in the medium term, the building up of sound conventions at this point of Bhutan's development is considered crucial.

Table 33 LIST OF COMMERCIAL UNITS/DEPARTMENTS

1. Travel Agency and Hotels under Tourism
2. Workshops and Central Stores
3. Bhutan Government Transport Services
4. Government Presses
5. Agriculture Production Farms
6. Agriculture Machinery Hiring Services
7. Livestock Production Farms
8. Pork Processing Plant
9. Dairy Marketing
10. Generation and Sale of Electricity
11. Handicrafts Emporium and Production Centres
12. Industrial Estates
13. Saw Mills and Logging Operations
14. All Public Sector Undertakings.

(C) FISCAL AND BUDGETARY REFORMS

4.13. One of the important aims of the principle of self-reliance enunciated by His Majesty the King is to attempt to meet the recurring cost of Government, at least of all essential services, by domestic resources mobilization. This calls for not only raising internal resources, but also curtailing

excessive growth of recurring expenditure through effective budgetary practices and optimization of organisation strength.

Although major contributions to domestic resources in the Fifth Plan are expected to come from the revenue generating investments and the streamlining of existing commercial activities, there is no doubt that fiscal policies, especially taxation measures, could yield significant revenues from the expanding tax base that will emerge out of the growth of economic activity in the Fifth Plan and the streamlining of tax administration. It is recognized that the taxation system would have to be carefully expanded in order to protect fledgling activities and the more vulnerable sections of the population and it is necessary to devise taxation measures that are simple and effective. The Government has, therefore, initiated a comprehensive study with the help of the Indian Institute of Public Finance and Policy and the International Monetary Fund to devise comprehensive taxation proposals, legislation and suitable administrative measures. A Revenue Cell in the Ministry of Finance is already functioning and a decision has already been taken to constitute a regular Revenue Service for tax administration. While the studies referred to above would be of great help in devising taxation policy and measures, a number of new measures have already been put into effect by 1982/83. These, along with projections of domestic resource mobilization in the Fifth Plan are discussed in detail in the following Chapter.

4.14. Budgetary procedures are expected to play a significant role in cutting costs and in making more efficient use of available resources. Especially with the re-organization of Government and decentralization, modifications of control procedures have become necessary. It is Government's feeling that many elements of the budgetary control mechanism devised earlier have become obsolete: procedures originally formulated when the size of Government was small and compact are no longer effective with the increasing size and dispersed nature of Government. Reforms have been initiated in the Fifth Plan in three major areas--in the consolidation of the dual budgetary system, in the definition of financial powers and in disbursement and revenue collection procedures. Beginning with 1981/82, the civil and development budgets were consolidated into a single entity and the Budget Bureau to formulate and administer the overall budget, was created under the Ministry of Finance. The Bureau now formulates and oversees the budget of the entire Government. Supplementing this, the roles of the Ministries of Finance and Foreign Affairs and the Planning Commission have been rationalized. The Ministry of Finance, apart from responsibility for the entire budget, also has overall responsibility for domestic resource mobilization. In assessing resource requirements and expenditure, the Ministry of Finance closely co-ordinates with the Planning Commission, the latter ensuring that expenditure proposals are consistent with plan priorities. The mobilization of foreign aid is conducted through the Ministry of Foreign Affairs.

4.15. The other major reform initiated in 1982/83 is in disbursement and revenue collection. Prior to this, each department had its own accounts into which Government transferred funds against the budgetary requirement on a quarterly basis. Besides, each department also had a separate account into which revenues earned were deposited for subsequent remittance to the Ministry of Finance. It was realized that this system had a major drawback arising out of the time lag between collection of revenues and subsequent remittance to the Ministry of Finance and the existence of a large number of disparate accounts. Funds accumulated in some accounts whereas in other accounts, there was not enough funds to meet expenditure requirements. The Ministry of Finance as a result, could never have a true picture of the state of finances and progress of expenditure. In order to streamline the cash flow of Government, from the 1982/83 budget, all Government revenue accounts were consolidated into a single account and similarly all expenditure were routed through a separate single budget account. rapping and disbursing officers were set drawing limits for every quarter under a letter of credit system. Matching this, a Central Accounts Cell and an Accounts Service were created to streamline accounting.

4.16. The third major area of budgetary reform has been in a complete overhaul in the powers of officers to re-allocate funds between different heads of expenditure. This became a necessity with the initiation of the processes of decentralization which called for a redefinition of the powers of central departments and the dzongkhags. The revised structure of powers delegated is given in Table 34. The intention is that in the early stages of decentralization the powers should reflect the objectives of decentralization by providing adequate flexibility to meet local needs while maintaining a reasonably tight control on expenditure to keep these in line with plan priorities.

Table 34 DELEGATION OF POWERS ON RE-APPROPRIATION OF FUNDS

Sl.No. Re-appropriation	Dzongdag	Head of Department	Ministry	Finance Ministry
1. One head to another in the same scheme	Nu. 0.005 m	Nu. 0.010 m	Upto Nu. 0.030 m	Full powers
2. One scheme to another in the same sector	Upto Nu. 0.010 m	Upto Nu. 0.020 m	Upto Nu. 0.050 m	Full powers
3. From one sector to	No powers	No powers	Dzongkhag shall forward another sector 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. The Ministry after consulting the head of the department, can approve upto Nu. 0.050 m.	Full powers
4. Dzongdags/Departments/Ministries shall not re-appropriate funds from maintenance to development and vice versa without the prior approval of the Ministry of Finance				
5. Dzongdags/Departments/Ministries shall not re-appropriate funds from budgeted heads/ schemes to unbudgeted 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 wher-re-appropriation involves the following:				
a) Surrendering of full annual provision of a scheme.				
b) Inter-sectoral diversion of funds.				
c) Takin up of a new scheme during the course of the financial year not included in the annual budget.				
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.				

4.17. While the above measures have already been put into effect, it is felt that a complete overhaul of budgetary procedures is required. This will have to be proceeded with caution, as a completely new budgetary system will encounter operational difficulties at the initial stages. Nevertheless, in keeping with emerging needs, a substantially new Budget Manual is to be prepared. This will also contain for the first time, commercial accounting procedures.

(D) MONETARY POLICY IN THE FIFTH PLAN

4.18. The large size of the Fifth Plan, the need for large investment in industrial ventures and the need to mobilise resources and expand credit calls for major institutional efforts. It is recognized that it will not be easy to further raise public savings as the planned funding projections already/ assumes a significant improvement in this area; in fact revenue projections depend to a considerable extent on putting on stream revenue generating projects. The investment in such projects would also call for a degree of domestic resources mobilization and three alternatives presents themselves. The first is to engage in expansionary finance through the issue of currency, the second to utilize the resources of the financial institutions and the third to raise a public debt. In addition, demands on foreign exchange both for imports and debt servicing calls for effective foreign exchange management and the growing demand for rural and commercial credit would need the formulation and implementation of sound credit policies.

4.19. It has, therefore, become inevitable that a central banking institution is set up as all these operational and developmental measures cannot be effectively guided by existing institutions. The Royal Monetary Authority was set up accordingly, in late 1982 with the help of the International Monetary Fund. The development of the role and functions of the Royal Monetary Authority will take place in several phases. In the first phase, the RMA will concern itself with traditional operational functions of a central bank, some of the developmental functions consonant with the needs of growth of the economy, and functions relating to monetary and statistical research. It will provide the operational framework and also equip the officers with expertise and experience to take over RMA's role in the second phase. In this phase, the RMA will be involved with the control and regulation of money supply to meet the twin objectives of growth and reasonable stability of prices. This would resolve itself into control over expansion of currency and credit, regulation of credit to priority sectors and eventually to credit planning. This phase will also witness the RMA's more active role in maintaining the external value of the currency, careful husbanding of the country's external reserves which may lead to implementation of a regime of exchange control. In the third or final phase, the RMA will come into its own as a true central bank of the country when it will supervise and regulate the functioning of the other financial institutions of the country.

4.20. One of the main functions of the RMA would be the issue of currency. Some degree of expansionary finance is possible as the level of ngultrums in circulation is low and monetization is increasing. Although it is Government's intention that ultimately the ngultrum should become the sole medium of exchange in Bhutan, it recognises the great importance for the exercise of caution in this process. The volume of trade between Bhutan and India which is likely to increase in future and the open border between the two countries makes it imperative that a free one for one convertibility of the ngultrum and rupee is maintained as long as is necessary. It is, however, recognized that a judicious release of ngultrums within the above constraint and that of price stability could contribute to closing the resources gap.

4.21. A simple regime of exchange control mainly with currencies other than the rupees, is proposed to be implemented in the Fifth Plan. This will serve the twin purpose of regulation of the use of foreign exchange and imparting strength to the internal and external value of the ngultrum. Exchange control will also cover capital inflows and would imply import control over capital and consumption goods, movement of ngultrum, foreign currency, security and bullion.

4.22. The third aspect of the function of the RMA would involve the management of public debts. In course of time this would involve the provisions of a safe investment outlet for the financial institutions which enjoy highly liquidity at present and also the creation of a securities market. The RMA will have an advisory role on the amount of loan to be floated from time to time, the timing of the floatation and the terms of the loans. The RMA will be the agent of Government with regard to the management of the public debts involving floating servicing and repayment.

4.23. Finally, the RMA would be responsible for credit control and planning and co-ordination of the financial institutions. Apart from the existing financial institutions, it is proposed to set up a Industrial Development Bank which will be both a promotional organisation for industrial development as well as a development banking institution. The rural credit system is also to expand substantially in the Fifth Plan and the RMA would, therefore, have to play an active role in credit planning and control in order to channelise the resources of these institutions into priority area and make the most effective use of such resources. The RMA will also monitor and maintain the health of the financial institutions through standard measures as control and specification of the Statutory Liquidity Ratios and Credit Reserve Ratios of the financial institutions.

(E) INVESTMENT POLICY

4.24. The industrial development policies for the Fifth Plan have been formulated in the context of the potentials and comparative advantage that the country possesses while at the same time keeping in mind the constraints to industrialisation that exist. Government, however, recognises that in view of its lack of experiences in promoting and regulating major industrial ventures in the past, industrial policy would have to be flexible and subject to modification as experience developed. The present policy, therefore, reflects both Government's apprehensive in regard to outside control and concern to speed up industrial development.

4.25. Bhutan's rich natural resource potential has been described earlier. The nearness and free access to the vast Indian market has also been discussed. The development of industry in the past however, has been constrained by the lack of power and infrastructural facilities, the lack of financial resources, the limited availability of trained manpower and entrepreneurial ability and the relative lack of support and service organizations. While major improvements have been made in the area of infrastructural facilities over the past four Plans and power will be plentifully available from 1984/85 onwards, the other constraints mentioned are still operative.

4.26. Apart from the above factors, two major objectives of the Government relating to the industrial sector, namely the need to strengthen the resource base of the economy and generate new revenues, and the importance of increasing the value-added component of exports, have influenced the content of the industrial policy so far developed. There is, therefore, a specific strategy relating to the establishment and development of public sector industries and the same time parallel promotional policies relating to the private sector. The public sector would be basically large scale natural resource based investments which would be beyond the capability of private entrepreneurs and a whole measure of control of the exploitation of natural resources is desirable. While in all cases it is intended to ensure the use of the most appropriate technology, nevertheless, in view of the overall labour shortage, more capital intensive methods of production will be encouraged.

4.27. It is recognised that given the fledgling status of industrial development in the country and the major constraints specified above, in order to meet the national objectives for this sector, the Government will have to play an important role through direct public sector investments, atleast in the medium term. This role is again promotional and pragmatic in nature and is designed to fill a gap. The internal conditions for large-scale private investments are presently, relatively unfavourable and entrepreneurial abilities limited. Private investment is therefore, not forthcoming.

4.28. The two pronged thrust in industrialisation calls for different promotional strategies. In the case of the Public Sector, the entire preparatory and implementation stage will be looked after by the concerned Government agency. Forest based industries will be the responsibility of the Forest Department; mineral and other natural resource based industries by the Department of Industries and Mines and agro based industries by the Food Corporation of Bhutan. The agency concerned will be responsible for preparation of feasibility reports and project documents collaboration arrangements (where industries will be set up in the joint sector) and financing arrangements. For the promotion of private investment, a number of industrial estates will be set up, some of them close to the location of the major public sector investments to facilitate the growth of ancillaries.

4.29. To regulate and promote industrial development, the National Commission for Development of Trade and Industries was established in 1980. This Commission meets under the Chairmanship of His Majesty. It is served by a working committee which comprises representatives of the various institutions. The National Commission, not only reviews industrial proposals for economic and technical feasibility but also ensure that the projects are in line with national priorities. Before the submission of projects for discussion in the National Commission for Development of Trade and Industries, they are appraised for development by the Department of Industries and the Planning Commission.

4.30. In view of the fact that different supportive policies have to be adopted depending on the size, technology and marketing needs of industries, these have been classified into three categories-small, medium and large. All medium and large industries come under the purview of the National Commission for Industries and have to be scrutinised and approved by this body before being taken up. Small industries are further divided into two categories--cottage industries which have a total capital of less than Nu. 0.1 million, and other small industries with investment ranging between Nu. 0.1 million to Nu. 1.5 million. This category is primarily reserved for the private sector. The industries are expected to be based on local raw materials and skills, and cater for localised internal markets, although it is understood that at the larger end of the scale more modern techniques of production will be used. The objective is to encourage the practice of traditional craft skills with improved technology, and promote the processing of agricultural and livestock products thereby increasing value added and rural incomes. Local entrepreneurs and groups of craftsmen will be encouraged to set up such industries. Confessional loans will be provided on a case-by-case basis. In the case of larger units, the Department of Industries will also provide the required technical and marketing support.

4.31. Industries with total capital ranging from Nu. 1.5 million to Nu. 10 million are in the category of medium scale industries. These industries can also be wholly owned by private individuals and groups. However, as they will require greater technological and entrepreneurial skills, they will be directly supported and supervised by the Department of Industries. Support would be in the form of the training of entrepreneurs and skilled manpower, marketing assistance, etc. It is expected that most medium scale industries will be natural resource based and export oriented.

4.32. Large scale industries are those involving an investment of over Nu. 10 million. Such industries are expected to be natural resource based and highly capital intensive. Due to the constraints mentioned earlier and the need for the Government to maintain a commanding role in the exploitation of non-renewable resources such as minerals, forests etc. to ensure their efficient utilisation, it is envisaged that all such industries, atleast initially, are likely to be in the public sector. Through the establishment of such industries the early exploitation of the natural resource potential can be begun and also, a major contribution to internal budgetary resources can be made quickly.

4.33. The Government is committed to the development of the private sector. Its involvement in large industries is at present a matter of necessity as the private sector is still very weak. Where the capability exists, the private sector may own fully or partly an industry of any size for which it can mobilize its own resources without Government assistance. While no sector is reserved exclusively for the public sector, the Government reserves the right to fully or partly own any new industry for various socio-economic reasons. In large industries for which the private sector does not have adequate resources, the Government stands ready to enter into joint-sector agreements with interested private parties and provide not only technical and marketing assistance but also financial investment upto the extent of 80% of the project costs. Where private entrepreneurs possess adequate management skills, they will also be allowed to manage such joint-sector industries. In such cases, while Government would not be involved in the day to day management through the control of company boards it would ensure that such units operated in accordance with the declared policies and fulfil the specified objectives. In general, the Government's policy in the area of ownership is that it is filling a temporary gap. The intention is that as the entrepreneurial and management abilities in the country increase, the private sector will be given a more expanded role. Furthermore, as public awareness increases and there is a willingness to hold industrial shares, the Government in the course of time may disinvest its holdings through public issues.

4.34. Government control of large scale enterprises is also necessary at this early stage of industrial development as such investments invariably involve foreign collaborations in the area of management, technology and marketing. Therefore, to ensure that such industries use a technology appropriate to the economic realities of the country; and one which will not put unnecessary burdens or distort future industrial development; that their employment and training programmes result in the maximum manpower and skills development of nationals and that they do not waste resources but make the desired contribution to internal budgetary resources, it is necessary for the Government to closely monitor and regulate their operations.

4.35. In the area of foreign collaborations, no major role is at present visualised for direct foreign investment and equity participation. This is primarily because there are no statutes, rules or regulations for the effective control and regulation of such investment. However, any proposals that may be forthcoming will be dealt with on a case by case basis. At the same time foreign collaborations will be welcome by Government in the area of management, technology and marketing. In fact there are already a number of units with such participation.

4.36. In order to promote private sector industrial development, the Government has undertaken a number of programmes. To foster entrepreneurial development, several training programmes have been instituted whereby potential entrepreneurs can get training in basic management and accounting practices. So far such training has been given through a fellowship programme in institutions outside the country. However, during the Fifth Plan it is proposed to establish a

Management Institute in the country which will hold courses in relevant areas. In the area of marketing support since most medium and large industries will be export-oriented, for the Fifth Plan period the Department of Trade and Commerce has instituted a programme of marketing assistance. This will consist of setting up a trade information system and establishing a trade promotion cell to assist exporters both in Indian and third country markets. In addition, support will be given for participation in trade fairs. The Department has drawn up a programme to obtain expert assistance for marketing studies, product adaptation, export marketing techniques, etc. Where required, the State Trading Corporation of Bhutan (Export Division) will also provide major support.

4.37. While major progress has been made in developing the overall infrastructure of the country the absence of adequate local infrastructure has been an important factor in inhibiting the growth of private industry. To remedy this situation and support the establishment of small and medium scale industries, a programme of developing industrial estates in different parts of the country has been taken up. The programme involves the development of land, construction of roads, and provision of electricity and water supply.

4.38. Until recently there was no corporate taxation in Bhutan. However, as a result of some industrial growth and in view of the new policy to commercialise all Government industrial and commercial undertakings, a 6% corporate tax on gross profits has been introduced. At present this is only applicable to large units, however, it is likely to be extended to medium and small units as well, with appropriate exemptions where required. In spite of this tax, Bhutan's corporate tax level remains one of the lowest in the world. In the past a number of fiscal incentives in the form of concessional loans and bank guarantees were given to small scale units by the Department of Industries and Mines. These incentives have been recently discontinued in view of the new proposal to establish an Industrial Development Bank. It is now proposed to draw up a comprehensive scheme of financial incentives and support measures as soon as finance become available for the establishment of the Industrial Development Bank. The financial package is expected to include assistance in project identification and preparation, concessional lending for industrial investment, equity participation, underwriting, providing guarantees, negotiating and channelising external loans, etc.

4.39. For the regulation and control of industrial and commercial undertakings a Companies Act has been prepared and is under consideration by the Government at the moment. The Act, which has a simplified structure appropriate to the needs of the country, will provide the legal framework for dealing with project approval and licensing, capital structure, maintenance and audit of accounts and the preparation of balance sheets, etc. On the basis of this new legal instrument, the Government will be in a position to monitor investment and direct the use of scarce resources, monitor and control the operations of industrial and commercial enterprises and levy appropriate taxes. Currently, the Department of Industries and Mines fulfils both a promotional as well as a regulatory role, although there is no proper organisation or comprehensive status for industrial regulation. Once the new Companies Act is adopted, it is also proposed to establish a small body which would perform all the functions of industrial regulation such as the registration and licensing of units companies, control of capital issues, and the interpretation of company law.

(F) ADMINISTRATION AND MANPOWER POLICY

4.40. The growth of the administrative structure over the past four plan periods has been outlined

earlier. Although the basic framework for the formulation and implementation of the overall developmental activities now exists, the expanded programme envisaged under the Fifth Plan will require a substantially greater input of manpower resources, both skilled and un-skilled. In order to meet these requirements the Government has adopted two basic strategies. The first relates to the decentralisation of administrative responsibility, particularly relating to the implementation of local schemes which has already been described in this Chapter. Through the strengthening of the district administrations and through popular participation, the implementation of the dzongkhag element of the Plan is to be facilitated and the pressure on overall manpower resources to be eased. The second basic strategy is the conception of a manpower development policy and related programmes.

4.41. The main objective of the manpower development policy is to institute a programme whereby the needs of the country can be met at the earliest. The quantitative expansion of higher education is, therefore, to be linked to the manpower requirements during the Plan period. However, at the same time it is intended to control any unrealistic manpower demands and to select, recruit and allocate personnel to the different sectors in a rational manner. As a first step, a detailed examination of the strength of various Government organisations was carried out in 1982 simultaneous to the strengthening of the dzongkhag administration. As a result, a saving of 5% in the strength of the administration was effected. During the interim period when adequate numbers of nationals will not be available, interim arrangements through the recruitment of non-nationals particularly in the highly skilled and professional categories will be undertaken. In order to translate all these objectives into concrete realities the Government has undertaken a number of steps, the primary of which is the establishment of the Royal Civil Service Commission, to oversee this sphere of activity.

4.42. In view of the long gestation periods required for the acquisition of education, skills and experience, manpower projections covering the period of 1981--1990 have been made indicating the yearly requirement of personnel at various levels in each overall category. The educational planning and programmes for the Fifth Plan have been based on these projections.

4.43. In overall terms, the Fifth Plan envisages a moderate degree of expansion in the educational system. The emphasis is on an improvement and consolidation of the existing facilities. However, in the area of higher education the required degree of expansion is being planned. The National Institute of Education is to be expanded and upgraded so that both primary and secondary school teachers can be trained. The existing Junior College is to be expanded and specific vocational courses depending on the manpower requirements at this level will be introduced. A new Degree College which will provide three year degree courses in humanities, sciences and commerce is to be established. The existing technical training institutions are also to be strengthened and new courses added. While some international assistance is already committed towards the programmes mentioned above, further assistance will be required to support and expand the various technical and vocational training establishments in the country to enable them to turn out the trained manpower which will be required for the various projects and programmes during the Fifth and Sixth Plan period.

4.44. Table 35 shows the manpower development programme for the Fifth Plan period and the target levels for 1986/87. By the final year of the Plan it is expected that the turnout of matriculates will be about 500 per annum. While this may be adequate to meet the need during the Fifth Plan period, the annual requirement of highly educated manpower including post-matriculate, technically trained personnel from 1986 onwards past 1990 is estimated to be around 700 per annum. The

necessary further expansion of the educational and training system during the Sixth Plan, particularly at the higher levels, to meet the manpower gap and the requirements of the country, is evident from this.

4.45. As adequate facilities for higher level and specialised training are not available within the country, in order to develop the necessary skills, training institutions abroad, will continue to be used. During the Plan period about 600 students will have to be sent outside for higher education, the annual numbers gradually increasing to reach about 180-200 during the last year of the Plan. Given the limited financial resources, particularly foreign exchange, a large measure of bilateral and multi-lateral and internal assistance is called for to support the scholarship programme of the Government.

4.46. In the area of specialised technical expertise, Bhutan will be dependent on external assistance for some time to come. With the emphasis on a large number of directly productive and commercial projects and programmes in the different sectors during the Plan, the overall requirements of such expertise are going to increase substantially as compared to the past. The assistance required will be much more effective if it is forthcoming as a package of financial assistance and know-how for the commercial and industrial projects being envisaged. This is true both for public sector projects and the private sector proposals (of which there is likely to be major expansion for the first time) which are being considered during the Fifth Plan. In the past, most of the assistance in the area of training has been either multi-lateral in nature or from India. With the expected increase in the number of donor agencies and countries over this period, efforts to establish new bilateral programmes are to be made.

PLANNING, MONITORING AND EVALUATION

4.47. With the introduction of the decentralised system and the large size of the Fifth Plan, it has been necessary to have a fresh look at the planning process and to devise new procedures for monitoring and evaluation. The manner in which the Fifth Plan was prepared has been described in the next section. However, the planning process does not end with the formulation of the Fifth Plan and it is a continuous process of review and modification. To take into account the availability of resources at various points of time, cost overruns, performance excesses and shortfalls etc. it is necessary to breakup the Fifth Plan into a series of Annual Plans. Each Annual Plan is to be formulated on the basis of a review of past performance, special problems encountered and the availability of resources for the year. Wherever necessary, annual targets and allocations are modified in the above light and keeping in mind the overall Fifth Plan framework.

4.48. The Annual Plan exercise starts with an assessment of resources available by the Ministry of Finance in consultation with the Planning Commission and the Ministry of Foreign Affairs. The apportionment of these resources on a tentative basis is made for the various sectors and dzongkhags and the individual units prepare their draft plan proposals. The DYT's are responsible for the preparation of the individual dzongkhag Plans and the departments, the individual sectoral Plans. The dzongkhag Plans are then vetted by the various departments and the Annual Plans are finalised in an annual conference usually under the Chairmanship of His Majesty, in which past performance is also reviewed and decisions are taken regarding changes in procedures etc.

4.49. The responsibility for central monitoring is that of the Royal Secretariat which is done on the basis of returns at regular intervals from the dzongkhags and departments. The various Ministries are also expected to monitor the performance of the various departments under them. The Planning Commission has been given the responsibility of monitoring and evaluation of pro-grammes from time to time. Areas for evaluation are usually identified on the basis of annual reviews

FORMULATION OF THE FIFTH PLAN

4.50. The formulation of the Fifth Plan has been the longest and most elaborate planning exercise undertaken in bhutan so far in view of the major changes of development strategy and policies that were required and this had much to do with the six year time span unlike the five year time spans of the earlier plans. The process could be said to have begun with a full scale review of existing policies taken up in 1979 on His Majesty's directive. As a result, the specific objectives, strategies and policies for the Fifth Plan was evolved by the last year of the Fourth Plan i.e., 1980/81. The broad financial parameters emerged by late 1980 as also the overall structure on the basis of which the overall size was tentatively determined. Based on these, detailed discussions were held with various departments and it was possible for Bhutan to make a presentation of the draft Plan for negotiations of funding with the Government of India, the United Nations system (particularly the UNDP) and other donors.

4.51. Once the draft Plan was finalised and major commitments of external assistance were reviewed, it was possible to refine the content of programmes and projects further. This involved detailed discussions with various departments and all the DYT's. The discussions of the dzongkhag Plans were conducted under the Chairmanship of His Majesty who personally toured most of the dzongkhags.

4.52. In addition, the industrial component of the Plan, which was initially indicative, was revised. The initial content was based on profiles made in 1975/76 and cost escalations had to be accounted for. Besides, it was decided to be more selective in the choice of industries to be taken up in view of the limited capability of the Government to take up very large investments. As a result of these exercises, the Fifth Plan underwent some changes relating to the size as well as structure and content. The funding picture had also undergone a change and a further reassessment had to be made in 1982.

4.53. The Fifth Plan has not been conceived as a rigid structure but as a dynamic and flexible one. Within the framework of the broad objectives of the Fifth Plan, modifications to programme content and size would have to be made in the light of experience gained in implementation, progress and the availability of funds.

Chapter V THE STRUCTURE OF THE FIFTH PLAN

5.1 The Fifth Plan is the most ambitious development Plan undertaken by the Royal Government of Bhutan so far. However, for reasons explained in Chapter IV, the size and complexity of the Plan was inescapable. The size of the Plan in terms of outlay now stands at Nu.4338.1 millions, almost three times the size of the Fourth Plan. In terms of per capita average annual investment, the Fifth Plan visualises a level of about Nu. 600 and in terms of percentage to Gross Domestic Product, the investment works out to an average of 29% of GDP annually (Table 36).

5.2. The overall dzongkhag effort is expected to be Nu.1111.3 millions or about 26% of the overall Plan size whereas the commercial and revenue generating investment is Nu.1 596.7 millions or 37% of the overall outlay. Reflecting the Government's efforts to contain non-essential and recurring expenditures, the outlay for such activities stands at 30% of the annual out lay while development expenditure will triple. Public investment is expected to go up from a level of 18% of GDP in 1980/81 to an average of about 29% peaking in 1984/85 to over 49% of GDP. The following table illustrates the rise in public investment from 1977/78 to 1982/83. It should be noted that these figures exclude the investment on the Chukha Hydel Project. If one were to include this, the resulting public investment would cross 40% of GDP (touching 50% by 1983/84 before declining) In addition to this, the total gross investment figure Nu.3213 millions includes Nu. 200 millions in civil administration expenditure. Although this is not strictly investment, it will, nevertheless, increase the capital stock of the country.

5.3. Table 37 gives the sectoral outlays for the Fifth Plan along with the sector wise development (or investment) expenditure for the Fifth Plan. These estimates are not strictly comparable to the outlays in previous Plans owing to certain changes in classification. However, the increase emphasis to the revenue generating sectors and the predominance of the power sector (eve excluding Chukha) and industries is evident. Industries command the highest proportion of the outlay with 17.4% (22.7% of the investment) followed by power--16.5% (22% of the investment, These are followed by Public Works at 12.4% (roads, bridges and water supply) and agriculture 11.5%. Forests, another area of emphasis, accounts for 6.5% (7.5% of the investment). The relative outlays on the social sectors, however, particularly education, shows a decline. The share of these in investment is particularly low as a greater proportion of their outlays is devote to maintenance. This is consistent with the overall Fifth Plan approach to consolidate and improve on the systems developed before going in for a major expansion.

Table 36 RATIO OF GROSS INVESTMENT TO GDP (ESTIMATES) Nu. in millions

	1978/79	1979/80	1980/81	1981/82	1982/83
Gross investment (excluding Chukha) GDP	175	210	165	208	399
GDP	930	970	1020	1110	1210
Ratio (%)	10	21	16	19	33

Table 37 PROPOSED OUTLAYS FOR THE FIFTH PLAN (1981-87) Nu. in millions

Sl. No.	Sectors	Overall Fifth Plan		Development	
		Outlay	% of Total	Outlay	% of Total
1.	Agriculture	494.8	11.5	421.6	13.3
2.	Animal Husbandry	122.1	2.8	55.4	1.7

3.	Forests	282.7	6.5	237.8	7.5
4.	Power*	715.0	16.5	699.0	22.0
5.	Industry Mines (including Trade and Commerce)	756.8	17.4	721.0	22.7
6.	Public Works Department (including Urban Department)	536.9	12.4	449.9	14.2
7.	Civil Aviation	100.0	2.3	94.4	3.0
8.	Posts Telegraphs	25.0	0.6	5.8	0.2
9.	Communications	66.6	1.5	35.8	1.1
10.	Tourism	35.3	0.8	31.1	1.0
11.	Education	340.0	7.8	130.8	4.1
12.	Health	185.3	4.3	74.6	2.3
13.	Information Publicity	15.0	0.3	9.5	0.3
14.	Headquarters (including Non-Development Departments)	624.1	14.4	181.8	5.7
15.	Miscellaneous	38.5	0.9	27.6	0.9
	TOTAL	4338.1	100.0	3176.1	100.0

*Excluding the Chukha Project.

STRUCTURE OF THE FIFTH PLAN

5.04. The investment or development component of the Plan has been divided into two components--one consisting of the normal development expenditure of the dzongkhags and departments and the other that of investments in revenue generating activities. The latter with an outlay of Nu.1596 million is about half the total investment (or 37% of the overall outlay). Investments out of this component would be in power, industries, forest based industries, mineral development and tourism. The main rationale for such a division arises out of the resource gap discussed later in this Chapter. In view of the existence of a real resource gap in the Fifth Plan, it was felt that a substantial borrowing effort, both internal and external, would have to be resorted to unlike in the past when borrowings were negligible. The existing committed budgetary resources (internal and untied assistance from the Government of India) and project tied aid, do not cover the total Plan size. The Government's understanding of the further availability of grants indicates that the resource gap would still be significant. In order to avail of borrowings, and to be able to service debts effectively, it was decided to separate the total investment in bankable projects as a distinct component of the Plan. However, Government realises that these projects cannot be financed by a 100% recourse to borrowings, which will defeat the very purpose of their inclusion in the Plan i.e., generation of revenue. Accordingly, Nu.571 million has been allocated from budgetary resources to provide the margin (or equity) for this component. This amounts to about 36% of the total outlay in this component which is adequate to meet fairly stringent debt equity ratios.

5.05 As a result of the allocation of Nu. 571 million from budgetary support, a small gap has also been created in the normal development Plan. This amounts to Nu. 310 million or about 20% of the balance of the investment component. It is Government's expectation that this would be easily covered by external grant like assistance currently under negotiation with a number of donors.

5.06. As in the past, the Plan has the traditional distinction between maintenance and development

expenditure. Maintenance expenditure would be met entirely from budgetary resources while the development expenditure from various forms of assistance (part budgetary support, project tied grants, and loans). Excluding the investment in revenue generating projects, the development expenditure on the normal side comes to Nu. 1580.1 million or about half of the total investment. Of this, 70% would be in the dzongkhag sector while only 30% in the central sector. These figures bring out vividly the importance given to revenue generating investments and the decentralisation of development programmes.

FINANCING OF THE PLAN

5.07. Although there has been a major increase in internal revenue as compared to the Fifth Plan, due to its much larger size internal resources will only provide 22% of the total requirement. The resource availability and deficits are given in Table 38. Taking into account internal resources, the grant available from the Government of India and the already committed external assistance, the overall resource deficit for the Fifth Plan now stands at Nu.1335 million. This deficit has been divided into the two components of the Plan mentioned earlier. The gap for the industrial and commercial component of the Plan is Nu. 1025 million or about 68% of the total outlay in this component of Nu. 1596 million. The resource gap for the rest of the Plan is very small, being Nu.in million or about 11% of the envisaged expenditure of Nu. 2742.4 million. However, in view of the fact that internal resources and the Government of India grant can be used to finance any segment of the Plan, these deficits should be considered flexible and can change depending on the response and interest of the international donor community. This differentiation is therefore for internal purposes, with the overall gap remaining at around 30% of the Plan. A large internal borrowing programme, of approximately Nu. 200 million, has already been accounted for before arriving at the deficit.

Table 38 RESOURCE POSITION IN THE FIFTH PLAN Nu. in million

I.	PLAN SIZE	
	i.Regular Plan (1)	2742
	ii.Investment Plan (2)	1596
	iii. Total Outlay	4338
II.	RESOURCES (3)	
	i.Internal Revenue	942
	ii.Indian Grant	1340
	iii.Committed International Assistance	521
	iv.Borrowing from internal financial institutes	200
	v.Total Resources	3003
III.	OVERALL RESOURCE GAP	1335
IV.	i. Resource Committed to Regular Plan	2432
	ii.Resource Gap in Regular Plan	310
V.	i.Resource Committed to InvestmentPlan	571
	ii.Resource Gap in Investment Plan	1025

1. The Regular Plan include maintenance and development outlays of all Development Deptts.and Non-Plan Expenditure. Assistance from WEP and Commercialised Deptts. are excluded.
2. The Investment Plan based on preliminary cost estimates of projects included in the Plan.

3. Only committed resources, expected assistance have not been included.

In addition, a sum of Nu. 510 million has already been committed from external sources towards the financing of some of the revenue generating projects, and negotiations for further funding are in progress.

5.08. The annual deficits, after taking into account the envisaged expenditure and the resources available at present from internal and external sources, are given in Table 39. The deficits are highest during the 3rd and 4th years of the Plan when total expenditures also peak. The importance of receiving substantial and timely external assistance to meet these deficits and ensure the success of the Plan is highlighted by this.

5.09. In considering the overall Plan size and the financing of a number of industrial and commercial projects, the possible role of private enterprise and private finance has not been taken into account. Although a certain contribution can be expected from the private sector, and an expansion of private enterprise is envisaged during the Fifth Plan period, due to the financial and entrepreneurial weakness of this class in the country, private investment has not been programmed within the Plan. Therefore, any participation by private entrepreneurs in productive enterprises may help to reduce the resource gap during the Plan but on the other hand, may also contribute to increasing its overall size.

5.10. The Fifth Plan differs from the earlier Plans in one other important respect. In the past Plans, since the contribution of external assistance other than that from India was low both in absolute as well as in relative terms, the Plans were essentially formulated on the basis of budgetary support (both internal resources and assistance from India). As and when assistance from other external resources were finalized these were added on to the original Plan which did not amount to any significant disruption of the Plan's structure. In view of the larger role that assistance from the UN system, other multilateral agencies and bilateral donors other than India is expected to play in the Fifth Plan, the earlier approach to Plan formulation is no longer tenable. For the first time, therefore, the Fifth Plan presents an integrated picture of the entire planned efforts and all programmes and projects being included along with the resource mix in each case.

DOMESTIC RESOURCES

5.11. The overall contribution from the domestic resource mobilization has been projected at Nu. 942.44 million which is 21.7% of the overall Fifth Plan outlay and amounts to a substantial step up of the overall Plan that is being funded from internal resources. Historically in absolute terms, internal resources have more or less doubled in every Plan period and the trend is evident in the Fifth Plan also. However, more important, the contribution of various sources of revenue in the Fifth Plan is expected to undergo major structural changes. As against a contribution of 12% to domestic revenues from direct taxes in the Fourth Plan, the share of direct taxes to domestic resources in the Fifth Plan is expected to rise to 35%. A decline is expected in the contribution of indirect taxes from 43% in the Fourth Plan to 35% in the Fifth Plan. A similar decline in non tax revenues from 43% to 30% has also been projected.

5.12. Exercises on domestic resource mobilization for the Fifth Plan have been carried out in great detail. The broad assumptions made are:

- (a) Most revenue bases would grow between 3% to 5% in real terms;
- (b) The effect of price escalations which would increase revenue in real terms has not been taken into account.
- (c) In a number of cases the tax potential from existing measures is much larger than current yields owing to the inadequate collection of machinery. Improvements in collection machinery are being effected and would lead to increase in tax yields by 1983/84 or 1984/85. It is recognized, however, that in spite of these improvements, some shortfalls would take place and the full potential would not be tapped. Projections have accordingly being discounted.

Table 39 ANNUAL PHASING of EXPENDITURE AND DEFICITS 1981-87 (ESTIMATES)

	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	Total
I. TOTAL EXPENDITURE	365	579	952	961	770	711	4,338
1. Maintenance	157	180	192	201	211	221	1,162
2. Investment	208	399	760	760	559	490	3,176
II. TOTAL RESOURCES	365	510	611	562	498	457	3,003
1. Internal Revenue	101	121	141	151	196	232	942
2. Govt. of India Grant	190	250	240	240	220	200	1,340
3. Committed International Assistance	47	119	157	111	62	25	521
4. Internal Borrowings	27	20	73	60	20	-	200
III. DEFICITS	-	69	341	399	272	254	1,335

(A) DIRECT TAXES

5.13. Direct taxes would be the fastest growing element in domestic resources mobilization. Although existing taxes would also grow--rising by 114% between 1981/82 and 1986/87--new taxation measures would contribute almost 40% to the total revenues from direct taxes. The major areas of increase would be in royalties especially from forest which is expected to go up almost by 900% in view of the likely increase in logging to feed the proposed forest-based industries. The second major jump would be in the area of corporate taxes introduced from 1982/83 which covers at present only a selected few ventures but will be gradually expanded to cover most undertakings in the Fifth Plan period. The turnover tax is also expected to rise rapidly with the increase in the rate of tax proposed and expansion of commercial activity. Most of the taxation measures introduced in 1982/83 would increase yields in future years especially as new investments come on stream.

(B) INDIRECT TAXES

5.14. The contribution of indirect taxes is expected to amount to 35% of total revenues. Now measures are proposed and the yields from existing taxes are expected to go up by 29% between 1981/82 and 1986/87. A sharp jump is expected between 1981/82 and 1982/83 owing to increase in the collection of excise of distillery products which will stabilise in future years.

NON TAX REVENUES

5.15 A major change in the structure of non tax revenue is expected in the Fifth Plan. 88% e total contribution of the non tax revenue would be from dividends from Government owned commercial and Industrial dertakings. The earnings of service departments a proportion I non tax receipts is expected to decline progressively and would amount to 20% of the total non tax revenue in the Fifth Plan. One reason for this is the change over from the gross budgetary system followed in the case of these undertakings in the past to the net budgeting system in which net surpluses or deficits are recorded. The other and more important cause will be because of the revenue generated from the investments being carried out in commercial and industrial ventures in the Fifth Plan. Although the share of the contribution of these new ventures would be 30% of the total dividends contribution for the Fifth Plan as a whole, the contributions are expected to rise rapidly as these new ventures come on stream. From no contribution at all in 1981/82, these new undertakings are expected to contribute Nu. 42.071 million by 1986/87 viz. 55% of the total dividends. It must be kept in mind, however, that the fundamental assumption in this projection is that external assistance for such investments would be forthcoming.

Table 40 REVENUE ESTIMATES FOR THE PERIOD 1981/82 TO 1986/87

No.	Source of Revenue	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	Total FifthPlan
A. TAX REVENUE								
1.	Direct Taxes	23.224	40.662	52.034	57.341	70.926	86.086	330.273
	a) Existing	23.224	23.278	31.104	34.507	42.159	49.681	203.953
	b) New	-	17.384	20.930	22.834	28.767	36.405	126.320
2.	Indirect Taxes	46.294	51.971	54.342	56.729	58.162	59.591	327.089
	a) Existing	46.294	51.971	54.342	56.729	58.162	59.591	327.089
	b) New	-	-	-	-	-	-	-
	Total Tax Revenue	69.518	92.633	106.376	114.070	129.088	145.677	657.362
B. NON-TAX REVENUE								
1.	Earning of Service Departments	12.848	8.405	8.695	9.000	9.320	9.657	57.925
	a) Existing	12.848	8.405	8.695	9.000	9.320	9.657	57.925
	Dividends/Profits from							
2.	Commercial Industrial Undertakings							
	a) Existing	18.806	20.240	25.040	25.940	29.930	34.243	154.199
	b) New	-	0.094	0.771	1.953	28.065	42.071	72.954
	Total Non-Tax Revenue	31.654	28.739	34.506	36.893	67.315	85.971	285.078
GRAND TOTAL		101.172	121.372	140.882	150.963	196.403	231.648	942.440

5.16. A separate provision had been made for borrowings from internal financial institutions to the tune of Nu. 200 million. This is a major departure from the past when borrowings from domestic financial institutions was negligible. These borrowings, however, have been accounted for outside the framework of domestic resource mobilization so as not to disrupt the picture of the contribution of Government revenues to the Plan.

INDIAN ASSISTANCE

5.17. Indian assistance, most of it in the form of a direct budgetary grant, has been traditionally the main source of external assistance and has generally doubled in each Plan period. In the Fourth Plan the total Government of India grant for development was Nu. 853 million (excluding the assistance for the Chukha Hydel Project) amounting to over 81% of the total external assistance. In the Fifth Plan, the Government of India assistance committed is Nu. 1340 millions, a step up of 57%. Of this Nu. 1220 million i.e. 91% would be in the form of budgetary support and the rest, project tied. In relative terms, however, the share of Indian assistance to total external assistance (including the resource gap) would decline to about 42%. This is to be expected as more and more international donors would be likely to contribute to Bhutan's development efforts beside, increase in its own internal revenue.

5.18. The figure for Government of India assistance refers only to the development grant and excludes the assistance to the Chukha Hydel Project which is in the form of part loan, part grant. In the Fourth Plan, Government of India also contributed, outside the Plan, to the Penden Cement Plant and the Area Development Project, Gaylegphug. Apart from such contributions there are other non plan contributions such as the excise duty refund, the 1949 treaty payment, police subsidy etc. In addition, a number of Government of India Agencies fund, there own activities in Bhutan directly out of their own budget. These flows are however, unrecorded.

5.19. The untied nature of the India assistance permits a great deal of flexibility in overall budgeting. Taken together with the contribution from internal resources, this forms the budgetary support element of the Plan.

INTERNATIONAL ASSISTANCE

5.20. International Assistance began to be of significance from the Third Five Year Plan. The total assistance received in the Third Plan mainly from the UN system and under the Colombo Plan, amounted to US \$ 1.98 million or Nu. 15.8 million. There were only four Agencies in involved. In the Fourth Plan, nine Agencies contributed US \$ 24.21 million or Nu. 193.7 million which was more than a twelve fold jump from the assistance received from International Agencies in the Third Plan. Starting from a low 3% contribution to the total Plan effort in the Third Plan period, International Agencies contributed 19% of the total Fourth Plan resources. In the Fifth Plan the international assistance committed so far stands at Nu. 521 millions a two and half times jump from that of the Fourth Plan. This however, amounts to 12% of the overall Plan outlay and involves so far 14 Multilateral Agencies, 6 Bilateral donors and 2 non-governmental organizations. In addition, negotiations are in an advanced stage for additional assistance of Nu. 357.381 millions. The resources gap of Nu. 1335 millions is also expected to be met by international assistance including borrowings. Assuming that this entire deficit is covered, almost 43% of the overall outlay will be from International sources.

**Table 41 INTERNATIONAL ASSISTANCE (EXCLUDING FROM INDIA)
COMMITTED UNDER NEGOTIATION FOR THE FIFTH PLAN (.1981-87)**

Sl.No.	Agency	Nu. million		Loans	
		US \$	Ngultrums	US \$	Nguitrums
A. Multi-Bilateral Agencies					
1.	I.P.F	23.488	211.392		
2.	M.L.D.C.	0.735	6.615		

3.	UNCDF	6.570	59.130		
4.	UNICEF	4.523	40.707		
5.	UNV	0.110	0.990		
6.	UNFPA	1.615	14.535		
7.	FAO (TCP)	0.120	1.080		
8.	IFAD	0.600	5.400	6.900	62.100
9.	I.C.P.	1.470	13.230		
10.	UNCHS	0.020	0.180		
11.	WHO	-	-		
12.	I.F.S.&T	3.000	27.000		
	Sub-total	42.251	380.259	6.900	62.100
14.	W.F.P.	10.666	95.994		
	Total Multi-Bilateral	52.917	476.253	6.900	62.100
B. Bilateral Agencies					
1.	Japan	4.200	37.800		
2.	Australia	0.500	4.500		
3.	Dutch	--	--		
4.	Helvetas (Swiss)	3.430	30.870		
5.	United Kingdom	--	--		
6.	West Germany	--	--		
	Total-Bilateral	8.130	73.170		
C. Others					
1.	OXFAM	0.232	2.088		
2.	S.C.F.	0.750	6.750		
	Total - Others	0.982	8.838		
	GRAND TOTAL	62.029	558.261	6.900	62.100

5.21. Another important feature of the Fifth Plan is the role that borrowings from International Institutions is expected to play in the financing. A loan of Nu. 62.10 millions has already been contracted from IFAD for agriculture development. Loans from the Asian Development Bank and the World Bank are in an advanced stage of negotiation and are likely to exceed together Nu. 500 millions in the Fifth Plan period.

AID MODALITIES

5.22. International assistance has so far been project tied and before the Fifth Plan, entirely consisted of grants. This presented no repayment problems and has been extremely useful in meeting foreign exchange requirements. With the Fifth Plan for the first time, assistance by way of loans is expected to become significant. Besides, budgetary support which has been the most substantial part of Plan financing in the past will now be only about half of the total outlay and after meeting the maintenance expenditure which perforce has to come from budgetary support, only about Nu. 1119 millions will be available from budgetary sources for investment i.e. 35% of the total investment component. The question of aid modalities therefore has become one of paramount importance for the Government as the implementation of the Fifth Plan is integrally linked to the smooth flow and administration of external assistance.

5.23. The country's external debt at the beginning of the Fifth Plan was limited to 40% of the

expenditure so far incurred on the Chukha Hydel Project and the expenditure so far incurred from the U.S. 7.2 million IFAD loan. Repayment on account of Chukha is linked to the sale of power to India on completion of the project itself. The IFAD loan for Small Farm Development is on highly concessional terms, with a long repayment period. There are also minor loans that have been borrowed from financial institutions within the country. However, these are small and related to specific projects and will soon be repaid in full.

5.24. For the implementation of major investment projects in the Fifth Plan, the Government accepts the fact that a substantial portion of the assistance required may come in the form of loans. However, the Government would prefer such loan assistance on concessional and extremely favourable terms. This is dictated by the fact that the Government would like to avoid having a debt servicing and repayment problem, particularly in foreign exchange, as the export sector is relatively undeveloped and foreign exchange earnings limited. Moreover, the objective of maximising the generation of the internal resources in the country is linked closely to the generation of revenues from the major investments envisaged in the Plan.

5.25. Anticipating the problems of debt servicing and repayment, the Government has carried out an exercise to determine the long term foreign exchange position of the country, in particular relating to hard currency. Bhutan currently has a reserve of about- US \$ 10 million and India rupees 200 million. Assuming that the assistance for the bulk of the investment projects in the Fifth Plan is received as loans, and is on concessional terms, it is estimated that Bhutan's debt servicing and repayment liabilities by 1986/87 will be in the region of US \$ 0.15 million annual. This figure takes into account the long gestation period of most major projects and the fact that the grace periods on almost all loans will still be in effect. By the middle of the Sixth Plan, however, the debt servicing and repayment liabilities are likely to grow rapidly. Therefore, special attention is being given to the accumulation of hard currency reserves and to enhancing the hard currency earning capability of the economy.

5.26. Over the past few years, the Government has been trying to concentrate the efforts of donors in particular fields or sectors where their experience or technology has been preferred within the context of Bhutan's development. Efforts will be continued to concentrate the assistance of specific donor countries within a particular sector and the coverage of other sectors and projects by the same donor will be considered only if the resources available are in excess of the requirements of projects already being supported.

5.27. In terms of the modalities of assistance, the flexibility provided by the Indian aid has been greater than that of the assistance from other sources, as it could be utilized to cover the local costs and the recurring costs of development programmes. Given the present low level of contribution made by internal resources to the developmental expenditure, the importance of external assistance in meeting local costs, in particular the recurring costs of developmental activities, cannot be over emphasised. As the investment expenditure of the Government is going to increase sharply in the Fifth Plan, the local cost implications of these activities will continue to be an area of concern. The Government, therefore, feels the need to request donor countries and agencies to provide financing covering all the elements of the cost of a project or programme, including maximum coverage of local costs.

5.28. Most major multilateral donors and particularly the UN system, have so far focused the

attention of their programmes on technical assistance. While technical assistance programmes are important for development, it is now necessary to give capital assistance greater importance. Technical assistance and consultancy services should form only a small part of the total programme package, with the major share being devoted to the financing of equipment and operations. This should also include the maximum coverage of expenditure to be incurred locally.

5.29. As the successful implementation of the Fifth Plan is linked closely to the full mobilization of international assistance, the question of the predictability of assistance flows is of utmost importance. In this context the procedure followed by India which commits assistance at the beginning of each Plan, and in UNDP Country Programmes which have annual Indicative Planning Figures for a 5 year period is important and useful, as these programmes can then be dovetailed with the overall plan of the country, and in addition this gives a certain level of predictability in resource forecasting. Assistance programmes covering the full period of the Plan or atleast a period of a few years, should be developed by all major donors.

5.30. In addition, the question of appropriate technology will also need to be studied taking into account all the necessary factors so that the country can avoid the technological pit falls which have afflicted many other developing countries. In this context, the Government has already embarked on an equipment standardisation programme to facilitate proper operating and maintenance activities within the country. In the first instance, this would cover general equipment, and then slowly be expanded to cover more sophisticated equipment. This is a factor which donors will have to consider in particular, as the need to receive united assistance will arise in many cases.

5.31. The gestation period between the initial request and the final disbursement of the project and programme assistance should be as short as possible, and not involve a long drawn out process involving various stages of investigation and approval. During the Fourth Plan period for instance, some of the assistance for which there was an initial approval could not be used and had to be carried over into the Fifth Plan period because of the lengthy procedures adopted by some donor agencies and countries, which in some cases took upto 3 years. Such delays are particularly harmful in the case of Bhutan where the number of projects and programmes in a particular sector are limited and, therefore, a delay in even one causes significant setbacks. Moreover, delays inevitably lead to cost escalations which add to further drains upon the already limited budgetary resources.

GROWTH AND DISTRIBUTION IN THE FIFTH PLAN

5.32. Table 42 gives the estimated GDP for 1986/87, i.e., at the end of the Fifth Plan. This is based on the physical targets arrived at for the various sectors. The estimated GDP for 1986/87 works out to Nu.1673 million--an average annual rate of growth of 8.5%. Taking the estimated rate of growth of population at 2%, the per capita rate of growth works out to 6.5%. With an estimated population of 1.31 million by 1986/87, the per capita income in 1986/87 at real prices would stand at Nu. 1277.

Table 42 COMPOSITION AND GROWTH OF GDP, 1980/81--1986/87 (Nu. in million, constant 1980/81 marked prices)

	1980/81		1986/87		Average Annual Growth Rate
	Amount	%	Amount	%	
Agriculture and Related Activities	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
Industry	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
Services	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	1,020.5	100.0	1,673.2	100.0	8.5

5.33. The rate of growth projected in the Fifth Plan is by no means high in terms of the absorptive capacity already created in the economy. The thrust of investment in increasing the value added component of natural resources in the Plan has itself an inbuilt high growth rate since the overall base of manufacturing is low. As may be expected, this sector is likely to have the highest growth rate of around 22%. Services, in keeping with the growth of other sectors, is expected to have the second largest rate of growth at 12.5%. The main component of this would be the completion of the Chukha Hydel Project and the resulting phenomenal jump in power generation. While the overall rate of growth of agriculture and allied activities is estimated at 7.5%, there are two elements in this which require comment. The first is the rate of growth for agriculture alone, is 11.7% and is due to the emphasis in the Plan in achieving self sufficiency in foodgrain production as also the likely large increase in cash crop production much of which will come from orchards already planted. The second point is the negative rate of growth in forestry. This is due to the fact that sale of timber is likely to decline in absolute terms with the setting up of forest based industries. Although an increase in harvesting is visualised in the Plan, much of its will be the stock for these industries and a part of the original contribution will be registered in the manufacturing sector. As no major expansion of the government machinery is planned and in fact, Government policy is now to stringently control recurring cost, the rate of increase in these activities is very small and their share in GDP is expected to decline. The following table gives the growth rate and changes in the contribution of the major sectors during the Fifth Plan period.

Table 43

Sector	1980-81 (%)	1986-87 (%)	Growth rate (%) per annum
1. Agriculture and related activities	63.2	60.2	7.5
(a) Agriculture	40.1	47.6	11.7
2. Manufacturing Mining	5.2	10.0	22.0
3. Services	13.1	16.7	12.5
4. Government	10.4	7.6	2.5

5.34. At the end of the Fifth Plan period, the population is estimated to reach 1.31 million. Although no estimates are available on the rate of growth of population in the urban sector, in recent years urban growth may be expected to have been of the order of about 15%. This, however, is likely to decline somewhat with increasing prosperity in the rural areas and the high escalation in the rents

prevailing in the towns. A conservative estimate of the average annual rate of growth of urban areas can be taken at about 10%. Urban population in Bhutan is, therefore, likely to touch 270,000 at the end of the Fifth Plan period. A quick exercise carried out by the Planning Commission indicates that by 1986-87 about 25% of the total population would be engaged in the modern sector and the balance of 75% in traditional rural activities. Although the terms of trade of those engaged in the modern sector would be superior to that in the traditional sector, this is conscious decision of Government so that there is an appropriate movement of labour to the modern sector. Nevertheless, the ratio of GDP accruing to those engaged and the traditional sector and those in the modern sector would remain more or less at the ratio of 2 : 1 prevailing at the beginning of the Fifth Plan. Since the population in the modern sector would be substantially smaller, per capita income would be almost twice that of the traditional sector. However, rural incomes are expected to go up by over 66% during the Plan period.

5.35. The total investment expenditure (at 1980/81 prices) and therefore, also the increase in capital stock of the country during the Fifth Plan period, is around Nu. 3,200 million. If this is related to the increase in GDP between 1980/81 and 1986/87 of about Nu.653 million, and estimated average capital output ratio of about 5 : 1 emerges for the Plan as a whole (both investment expenditure and net income exclude the figures for Chukha Project which by its enormous size relative to the Plan and high capital intensity would distort the figures). Although this ratio seems to be on the high side, it is quite consistent with the approach taken in the various programmes and projects for increasing the capital intensity of production techniques in the light of the labour constraints.

Chapter VI SECTORAL PROGRAMMES IN THE FIFTH PLAN

INTRODUCTION

6.01. Table 44 below shows the sectoral allocation of expenditures under the Fifth Plan distributed between central departments and dzongkhags. The most notable changes over the Fourth Plan are the increase in the shares of industry and power, and the relative decline in agriculture. As can be seen, almost 26% 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 dzongkhag administrations and the decentralization of services like primary education and health, but about 22% of the capital expenditures. The comparatively small share of capital expenditures reflect the relatively simple nature of most of the schemes being undertaken under the dzongkhag plans--minor irrigation, livestock breeding services, primary school buildings, basic health centres, feeder roads, suspension bridges, etc. as well as the fact that costs exclude the manual labour 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 dzongkhag 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.

AGRICULTURE

6.02. The past two decades of planned development leading up to the Fifth Plan have resulted in the creation of comprehensive infrastructure in the agriculture sector and the opportunity for a vigorous thrust in agricultural development during the Plan. As a result, for the first time, it has become possible to specify quantitative targets of production and very clearly spell out objectives. The objectives of agriculture development in the Fifth Plan, are as follows:

- i. Achieving self-sufficiency in foodgrains production;
- ii. Increasing steadily the incomes of the farming community through the diversification of production, primarily cash crops;
- iii. Improving the overall nutritional status of the population;
- iv. Increasing improved seeds, production, and achieving self-sufficiency to the extent possible.

Table 44 FIFTH PLAN SECTORAL ALLOCATION OF EXPENDITURES

	Recurrent		Capital		Total	
	Nu.M	%	Nu.M	%	Nu.M	%
Agriculture (1)	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	282.1	6.5
Power (2)	16.0	1.4	699.0	22.0	715.0	16.5
Industry and Mines (3)	35.8	3.1	721.0	22.7	756.8	17.4
Public Works Department (4)	87.0	7.5	449.9	14.2	536.9	12.9
Civil Aviation	5.6	0.5	94.4	3.0	136.9	2.3
Posts and Telegraphs	19.2	1.7	5.8	0.2	100.0	0.6
Communications	30.8	2.7	35.8	1.1	25.0	1.5
Tourism	4.2	0.4	31.1	1.0	66.6	0.8
Education	209.2	18.0	130.8	4.1	35.3	7.8
Health	110.7	9.5	74.6	2.3	340.0	4.3
Information Publicity	5.5	0.5	0.5	0.3	185.3	0.3
Headquarters (5)	442.3	38.0	181.8	5.7	15.0	14.4
Miscellaneous	10.9	0.8	27.6	0.9	624.1	0.9
TOTAL	1,162.0	100.0	3,176.1	100.0	4,338.1	100.0
Implemented by Dzongkhags	423.6	36.5	687.7	21.7	1,111.3	25.6
Implemented by Centre	738.4	63.5	2,488.4	78.3	3,226.8	74.4

1) Including Irrigation and Food Corporation 2) Excluding Chukha 3) Including Trade and Commerce 4) Including Urban development 5) Including Non-Development Sectors.

6.03. The major agricultural production targets for the Fifth Plan period are specified in Table 45. The rise in production is mainly expected from an increase in yields, with only a small expansion of about 20,000 acres in the cropped area, being envisaged. Total cereal production is expected to increase from the present level of 163,700 MT to about 204,800 MT in 1986-87 (gross). The major increases are in the production of paddy and wheat (including barley) which are targeted to reach 84,500 MT and 22,500 MT respectively by the end of the Plan. The relatively low increases in maize (5%) reflect the more limited opportunities in dry land farming, as well as the conversion of 8,500 hectares of dry land to wet land. In cash crops, the major increases expected are to be in those already extensively developed--potatoes from 25,000 MT to 50,000 MT, oranges from 25,000 MT to 53,000 MT, apples from 3,300 MT to 8,800 MT and for Cardamom from 2,800 MT to 4100 MT.

6.04. The total outlay for agricultural development in the Fifth Plan is Nu. 211 million. The major programmes are those for farm mechanisation, plant protection, integrated area development in the Western region, and soil conservation and land development in the Southern region.

Table 45 OUTLAY: AGRICULTURE SECTOR (1981-87) Nu. in million

Programme	Total	Fifth Plan Outlay	
		Development	Meaintenance
1. Land Development	5.457	5.457	--
2. Multiplication Supply of Improved Seeds/Seedlings	6.412	6.412	--
3. Plant Protection Services	28.000	28.000	--
4. Farm Mechanization	39.000	39.000	--
5. Soil Fertility Development	6.500	6.500	--
6. Rural Credit Scheme	10.000	10.000	--
7. Strengthening of Extension Network	1.300	1.300	--
8. Food Processing	2.610	2.610	--
9. Agriculture Research Information Training	6.627	6.627	--
10. Potato Development	19.400	19.400	--
11. Intensive Area Development Programme	51.752	51.752	--
12. Establishment	34.012	0.900	33.112
Total	211.07	177.958	33.112

6.05. As mentioned earlier, previous increases in production were largely due to increases in land brought under cultivation. The limits of this have now been reached, given the labour shortages and limited land, and, a major shift in strategy involving the increasing intensity of cultivation is to be introduced in the Fifth Plan. Future production increases will therefore, come from increased labour productivity arising out of better quality inputs--improved seeds, fertilizers, plant protection measures, more intensive cultivation through the mechanisation of farming operations, and through improved cultivation techniques. Programmes have been proposed in the Fifth Plan to meet these needs. To meet the increased demand, the agricultural support infrastructure through already comprehensive, will have to be not only aimed at enhancing the delivery system, but increasing the production of seed and plant material in departmental farms and a more sophisticated approach to extension.

IMPROVED SEEDS/PLANTS PROGRAMME

6.06. The programme for multiplication and supply of improved seeds and plants is being undertaken in all dzongkhags to meet the expected requirement of seeds in the country. It is hoped to achieve self-sufficiency in quality seed and plant material through this programme, and also to produce surpluses to support the establishment of a seed export industry in the near future. Each dzongkhag will register progressive farmers as seed growers. farmers' participation and cooperation will be brought about extending incentives in the form of remunerative procurement rates for multiplied seed and the recovery of the costs of nucleus seed only at the time of procurement. Technical know-how will be provided to the seed growers by the agricultural extension personnel. The nucleus seed will be produced in the departmental agricultural farms. In the Fifth Plan period, it is expected that 5,200 MT of improved seed and 4.1 million fruit plants and rhizomes will be distributed.

SOIL FERTILITY

6.07. The use of improved seed does not by itself increase productivity unless adequate nutrients are applied. Soil fertility will be improved by increasing the use of chemical fertilizers and by promoting the use of farm yard manure. For the latter the construction of compost pits will be encouraged through subsidies. All extension centres will be used to supply fertilizers and give guidance on appropriate types of fertilizer, dosages, etc. for different crops and soils. The transport costs of supplying fertilizers to the districts will be subsidised by the Government. At the local level, the procurement of green manure seed, binomial and trace elements, their distribution and sales (including chemical fertilizers) will be done by the dzongkhag authorities. The Department of Agriculture will procure fertilizer on the basis of Dzongkhag requirements and manage the storage and distribution. It will also be responsible for recommending new/improved types of fertilizers, their application and other related matters, and the overall progress and monitoring of the programme. The Fifth Plan target for distribution of chemical fertilizers and micronutrients is 2,810 MT while the target for construction of compost sheds would be 127,000 nos.

FARM MECHANIZATION

6.08. One of the main impediments to increasing cropping intensity is the labour shortage which takes on critical proportions during the major operation of transplanting/sowing and harvesting of cereal crops. In order to overcome these shortages, simple tools and manual/power-operated equipment is to be introduced. The programme will mainly consist of the sale of tools and equipment at reasonable prices. To meet the shortage of trained manpower required to operate agricultural machinery, a training component has been provided. A hire service scheme will also be operated at the dzongkhag level on commercial basis. The training to be given to farmers about the utilization of machinery will be organised every year based on the equipment in use in a given area. To support the propagation and utilization of farm machinery, this programme will be supported by the setting up of Agriculture Machinery Centres on a regional basis where hire, repair and maintenance services, and the production of some tools will be undertaken. Small repair and maintenance unit will also be set up in some of the dzongkhags. The physical targets for the plan include the procurement for sale or hire of 35 tractors, 112 power tillers, 1,261 manual and powered machinery items and other improved tools. 612 farmers will be trained as machine operators and 21 field workshops will be established.

PLANT PROTECTION

6.09. It has been estimated that 15% of cereal production, 20% of cash crops (50% in the case of apples and oranges), is lost due to inadequate plant protection. This programme therefore, aims at the reduction of these losses which are due to crop diseases, pests and weeds. Preventive and curative plant protection measures will be carried out free of cost through the extension personnel in the dzongkhags. Each dzongkhag will be allocated funds to purchase equipment and chemicals based on the area to be covered. One plant protection supervisor who will control the programme has already been provided in each area. The Department of Agriculture will standardize items regarding equipment and chemicals, introduce new products and co-ordinate plant protection activity in the event of epidemics or emergencies. It is estimated that during the Fifth Plan an area of 688,000 hectares under field crops and 24,000 hectares under orchards will be covered.

RURAL CREDIT

6.10. Most of the direct subsidies to farmers that were extended during the past Plan periods for major inputs like seeds, fertilizers and machinery, as well as for cash crop expansion, have been reduced or eliminated. The impact of this has been reflected in a lower take off of inputs, with even the well-to-do farms households reducing their purchases of inputs, due to the increased prices. In order to help the poorest of the farming community to buy seasonal inputs like seeds tools, and fertilizers, credit in the form of short-term loans at low interest rates is to be extended. At the national level a committee has been set up to supervise the implementation of this scheme. Based on need and repayment capability of farmers, short, medium and long term loans amounting to Nu. 1,000/-, Nu. 3,000/- and Nu. 5,000/-; at interest rates of 6, 8 and 12% respectively, will be given. In order to ensure that loans are not misused, they will be given against purchase of inputs rather than in cash. A credit committee at the dzongkhag level will take the responsibility of screening applications, disbursing loans and monitoring the utilization. The task of obtaining repayment of the loan within the stipulated period will rest with the dzongkhag authorities. The dzongkhag will also ensure that adequate stocks of all inputs required for effective loan utilization is maintained. A disbursement of Nu. 10 million is planned in the Fifth Plan period.

6.11. The rural credit scheme included in the Plan, as described above, is limited in its coverage due to the shortage of funds. To provide adequate support for the long term growth in both agriculture and animal husbandry, a much larger scheme would be required. It is with this purpose in view that the Royal Monetary Authority in co-operation with the Department of Agriculture is proposing to institute a more comprehensive rural credit scheme requiring a capital of Nu. 40 million.

EXTENSION NETWORK

6.12. Though extension centres have been set up in most blocks of the country, the need has arisen to improve the facilities and augment the equipment available. In some blocks it is also proposed to set up new centres. During the Plan, 47 existing centres will be strengthened and 15 new centres constructed.

INFORMATION & TRAINING

6.13. The programme aims at imparting knowledge on the scientific package of practices to arming households through practical demonstrations, exhibitions, training and tours. At the Dongkhag level at least one exhibition will be organised every year at different centres, so as to disseminate information to farmers on the latest developments in agriculture. Result and method demonstration for important crops will be organised in each block on the use of plant protection equipment, better tools and machinery and appropriate fertilizer/compost usage. Farmers' training will be conducted to cover all aspects of agricultural techniques and tours will be organised to expose farmers to the latest developments that have taken place within and outside the country. During the Fifth Plan, 112 exhibitions, 4,875 demonstrations and 6,650 farmers will be trained, in addition to 1,630 farmers being taken on conducted tours.

VEGETABLE SEED PRODUCTION

6.14. In order to introduce the growing of vegetables on a large scale both for increased rural consumption and to meet the growing demand in the urban areas, high quality seed production and distribution will be carried out. A trial unit has already been set up at Bondey Farm, Paro, to produce and supply vegetable seeds. This unit has been successful in seed production and will be strengthened during the Plan period. Based on the existing cropping of vegetables, the unit will produce, grade and pack high quality vegetable seeds for distribution to other dzongkhags. New crops suitable to the varied agro-climatic conditions in different areas will also be introduced so as to diversify vegetable crop production.

POTATO DEVELOPMENT

6.15. The National Potato Development programme is aimed at making improvements and in creasing the production and distribution of quality seed, reducing the incidence of diseases, and improving cultivation practices and yields. So far improved seed covers only 9% of the area under potato. The programme intends to increase this to 19% by the end of the Plan. It is proposed to develop seed production separately in the western, central and eastern areas of Bhutan to take account of geo-climatic differences. Through multiplication of the nucleus seed provided to farmers, it is intended to promote the establishment of a seed export industry. At present seed production and research is being carried out at the farm at Phobjikha with assistance from CIP, Peru. The research programme includes efforts to develop true seed. This farm is-to be strengthened and new ones are proposed to be started at suitable locations.

FOOD PROCESSING

6.16. Two trial processing units have been set up by the Department of Agriculture at Paro and Bumthang. These units have been operating successfully and have created a good market for surplus cash crops, especially apples, and have encouraged farmers to expand production. In addition to these units, it is proposed to set up new units at Tashigang, Lhuntshi, Mongar and Pema Gatshel to cater to increased production and to create a larger market for cash crops. It is envisaged that these units will become self-sustaining after a short gestation period. The major activity under the programme will be the construction of buildings and purchase of processing equipment. The existing units at Paro and Bumthang will be strengthened through further equipment purchases.

LAND DEVELOPMENT

6.17. The main objectives of this programme are to bring about the conversion of dry land into irrigated land and the bringing of Tsheri (shifting cultivation) into permanent cultivation i.e. dry land. The programme is integrated with the irrigation programmes to be taken up in all dzongkhags, based on land availability and the potential for irrigation. In order to encourage land development the programme will have a subsidy component. For the effective utilisation of irrigation, terracing is to be carried out on dry land and the conversion of Tsheri land into permanent cultivation will be done by encouraging contouring and integrated hill-side development. The actual work involved in the programme will be carried out by the farmers themselves and support will be provided in the form of a subsidy. A subsidy of Nu. 300 per acre (subject to a maximum of Nu. 600 per family) for terracing and drainage of land, and Nu.100 per acre (subject to a maximum of Nu. 300 per family) for contour bunding, will be given. The targets laid down for the Fifth Plan are: 8,800 hectares of

dry land to be converted into wet land; 8,800 hectares of Tsheri land to be converted into permanent fields; 2,250 hectares of land to be contour--bunded; and, 40 hectares of land drainage work to be undertaken. The dzongkhags will identify backward areas and beneficiaries to be given priority in land development and ensure co-ordinated action by agriculture, irrigation and forestry extension personnel.

SMALL FARM IRRIGATION DEVELOPMENT PROJECT

6.18. An integrated project covering 3 dzongkhags in western Bhutan for increasing agriculture production is to be taken up in the Fifth Plan with assistance from IFAD. This will cover the dzongkhags of Paro, Wangdi and Thimphu (including Punakha), and is expected to be completed by 1986. In the first phase, the project will support a programme of institution building within the Department of Agriculture and an agricultural credit system. The programme will consist of:

- i. renovation of selected irrigation and drainage systems commanding about 5,000 hectares, and building an organisation for effective maintenance;
- ii. bringing 8,500 hectares under a comprehensive agricultural development programme consisting of the supply of inputs and services and supported by an agricultural credit system;
- iii. extension of mechanisation of farm operations, especially on small farms;
- iv. strengthening supporting services, in particular extension, adaptive research and nutrition programmes;
- v. construction of 50 Km. of feeder roads to facilitate access to markets and inputs;
- vi. training of personnel and provision of consultancy services.

SOIL CONSERVATION AND LAND DEVELOPMENT IN SOUTHERN BHUTAN

6.19. The project will be taken up on a composite basis at Gaylegphug in Southern Bhutan, where good agricultural land exists along with a sizeable irrigation potential. However, the land is crossed at several places by torrential streams which erode the banks, leading to considerable soil erosion. It is proposed to curb this problem by following an integrated approach comprising of bank protection works, channelising of streams, afforestation of the higher reaches, 800 hectares of land will be covered under this programme and about 230 families will be settled in the catchment area.

AGRICULTURAL RESEARCH AND TRAINING

6.20. The production programmes need to be supported by applied research such as crop and varietal trials, fertilizer response trials, soil testing, etc. The main centre for such activities would now be the Centre for Agricultural Research and Development at Wangdiphodrang supported by a network of farms for carrying out trials in the different agro-climatic regions of the country. The training of manpower required for the extension network will continue at the existing training centres. For this purpose the Agricultural Training Institute at Kanglung is to be expanded and strengthened. As advanced training programmes cannot be introduced in the country at this stage, advantage would be taken of facilities available in other countries for higher level specialised training.

Table 46 FIFTH PLAN CROP PRODUCTION TARGETS

	Cropped Area ('000 Ha)		Production ('000 MT)	
	1982	1987	1982	1987
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	15.5	15.0	12.3	12.7
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
Potato	3.7	5.1	24.9	50.0
Chillies and Vegetables	3.1	3.6	12.2	15.1
Orange (a)	6.2	8.0	25.6	53.1
Apple (a)	1.5	1.9	3.3	8.8
Cardamom (a)	5.9	6.6	2.8	4.1
(a) %Bearing	1982	1987		
Oranges	53	77		
Apples	45	83		
Cardamoms	74	87		

6.21. The major objective in the irrigation sector is to expand the area under assured irrigation, thereby permitting the widespread adoption of improved farming practices and increasing yields. The strategy for increasing the area under assured irrigation consists of the construction of large new systems as part of an integrated approach in the selected areas, the construction of small system throughout the country, and the renovation of existing small systems. In addition, the construction of feeder roads in the interior is also planned, to provide access for the marketing of surplus produce.

PHYSICAL TARGETS OF THE IRRIGATION SECTOR ARE GIVEN IN TABLE 48

6.22. The total outlay for irrigation on the Fifth Plan is Nu. 208.3 million. The major area of expenditure is the construction and renovation of irrigation channels.

Table 47 OUTLAY: IRRIGATION SECTOR (198187) Nu. in million

Programme	Fifth Plan Outlay		
	Total	Development	Maintenance
1.Construction of New Irrigation Channels	99.118	99.118	
2.Renovation of Existing Channels	38.535	38.535	
3.Maintenance of Existing Channels	2.774	2.302	0.472
4.Bank Protection Works	14.793	14.793	
5.Feeder Roads	15.779	15.779	
6.Training	1.812	1.812	
7.Gaylegphug-Sarbhag Area Development Project	15.000	15.000	
8.Establishment	20.474	11.980	8.494
Total	208.285	199.319	8.966

CONSTRUCTION OF SMALL IRRIGATION CHANNELS

6.23. Under this programme it is proposed to bring an additional 6,500 ha. of cultivable land under assured irrigation. The programme is to be implemented at the dzongkhag level and the dzongkhag administrations will be responsible for identification, investigation and construction of these schemes with technical advice being provided by the central department. The beneficiaries are expected to maintain these systems themselves. However, they will receive technical and material assistance from the department.

MAJOR IRRIGATION SCHEMES

6.24. Three major irrigation systems are proposed to be constructed during the Fifth Plan in the Gaylegphug/Bhur area of South-Central Bhutan which has large composite area suitable to be brought under irrigation. This is a major departure in strategy as Bhutan's experience in major irrigation projects so far is very limited. The Gaylegphug area in which all the projects are located is the largest tract of flat land in the country with an irrigation potential as, it is the most crucial area for fulfilling the national objective of self reliance in foodgrains. The schemes are:

i. Bhur Project: This is designed to be a gravity-fed system. The project is expected to be taken up towards the end of 1983 and commissioned by the end of 1986 at an estimated cost of Nu. 25 million. It will have a command area of 800 ha. which at present is dry land, and will benefit 600 farmers. It is expected to achieve cropping intensity of 200% in the command area, and the project will enable a substantial area to be brought under-paddy.

ii. Taklai irrigation Project: This will consist of a gravity-fed system drawing water from the Aie river and irrigating an area of 2,400 ha. The Project is estimated to be completed in 1984 at a cost of Nu. 43.8 million. It is expected to result in a cropping intensity of over 200% in its command area and also lead to a substantial increase in paddy cultivation.

iii. Gaylegphug Area Development Project, Phase II: Phase I of this project was completed at the end of the Fourth Plan period and Phase II, to be constructed at a cost of Nu.15.0 million, is being taken up in the Fifth Plan. Phase II visualises the construction of a lift irrigation system with a command area of about 1,200 ha. with water lifted to a head of 75 metres from the Aie river. As this is a lift scheme involving high operational costs, a cropping intensity of over 240% is expected to be achieved in this area.

RENOVATION OF CHANNELS

6.25. A large number of small systems have been constructed in the past by farmers themselves. However, in the absence of appropriate designs lack of maintenance and use of inferior materials many of these systems have either fallen into serious disrepair or do not effectively cover the area originally envisaged. In addition, frequent repairs are necessary to maintain some degree of efficiency, which raises the costs of irrigation. The programme of renovation visualises improvement of headwalls realignment of channels and replacement of substandard materials in order to maximise the volume of irrigation provided and the area covered. A command area of 3,200 ha. is to be covered. The programme will be implemented at the dzongkhag level with technical guidance being provided centrally.

RIVER BANK PROTECTION

6.26. In recent years, the country has lost a substantial amount of good agricultural land through

floods and erosion, particularly in the Paro Valley and in the foot hill regions. This Project is aimed at preventing river erosion of prime agricultural land. About 80 km. of river length is to be covered in the Fifth Plan, primarily in western Bhutan.

CONSTRUCTION OF FEEDER ROADS

6.27. In order to facilitate the supply of inputs and the marketing surplus produce, mainly in the command areas of irrigation projects 320 km. of feeder roads are proposed to be constructed throughout the country during the Fifth Plan. These feeder roads will be ordinary earthen ones with inexpensive drainage structures. The programmes will be implemented at the dzongkhag level.

Table 48 TARGETS FOR IRRIGATION (1980/81)

Sl.No.	Scheme	Net-Command area added by 1986/87 (in hectares)
1.	Minor Irrigation	6,500
2.	Major Irrigation:	
	i. Bhur	800
	ii. Taklai	1,400
	iii. ADP Gaylegphug Phase II.	1,200
	Total	3,400
3.	Renovation and remodelling of existing system.	3,200
	Grand Total all schemes	13,100

FOOD CORPORATION OF BHUTAN

6.28. The primary institution for marketing of agriculture produce in Bhutan is the public sector Food Corporation of Bhutan (FCB). This was set up in 1974 with the main aims of operating a public distribution system (including the procurement and maintenance of buffer stocks of essential commodities), undertaking the marketing of agricultural produce, and ensuring remunerative prices for producers through price support operations. These aims remain in the Fifth Plan. However, with the expected increase in agricultural production and the expansion of urban consumption and demand, an enhanced role is visualised for marketing operations including price support, in the public sector in the Fifth Plan. In addition, as the nature of the FCB's activities are such that large seasonal buffer stocks have to be maintained, margins on turnover are low and there is therefore the need for a high degree of cost effectiveness, the streamlining of its operations is to be a major area of emphasis.

6.29. The total expenditure envisaged on the FCB's activities in the Fifth Plan is Nu. 110.5 million. Of this Nu. 75.5 million forms part of the regular plan programme, and Nu. 35 million is the cost of the additional priority projects for which additional financing will have to be found.

Table 49 OUTLAY FOOD CORPORATION OF BHUTAN (1981-87)

Programme	Total	Fifth Plan Outlay	
		Development	Maintenance
A. REGULAR PROGRAMMES			
1. Godowns & Depots	7.000	7.000	

2. Horticulture Project	26.752	26.752	
3. Cold Storage Power House	4.767	4.767	
4. Establishment	36.966	5.790	31.176
TOTAL: Regular Programmes	75.485	44.309	31.176
B. ADDITIONAL PROJECTS			
1. Regulated Market	2.728	2.728	
2. Buffer Stock and Price Stabilization	32.327	32.327	
TOTAL: Additional Projects	35.055	35.055	

6.30. The distribution of essential commodities and price support operations for cash crops which are exported, constitute FCB's main activities. The first category includes the local procurement and import of foodgrains, the setting up of a food security system to meet emergencies running the World Food Programme operations, and building up a supporting infrastructure such as storage depots, godowns, etc. The second category has activities like supporting horticultural, marketing, storage construction and setting up of the regulated markets

PROCUREMENT, IMPORT AND DISTRIBUTION OF ESSENTIAL COMMODITIES

6.31. The internal procurement of foodgrains is expected to increase by about 11% over the plan period over the existing level in 1980-81. Including the import of a number of commodities such as salt, sugar and edible oils, the total distribution of essential commodities by the FCB is expected to increase by 27% during the same period. As in the past, the FCB's distribution and procurement system will form a part of the free market operations in the economy and efforts will be made to ensure remunerative prices to producers and also to maintain price stability in the market. The existing 40 sale depots will be expected to handle the additional turnover with only one additional sale depot being set up during the Fifth Plan.

FOOD SECURITY

6.32. Since a substantial part of the requirement of foodgrains is met outside the FCB's public distribution system by imports through private channels and by local production, the supply is highly sensitive to vagaries of production both within the country as well as in neighbouring parts of India. During the Fifth Plan, the FCB will create and maintain a buffer stock of foodgrains to operate a food security system. With this it will be able to intervene effectively in the market in case of local or general shortage in supply. Setting up the system involves maintaining a buffer stock of 2,500 tonnes of foodgrains along with creating the necessary storage capacity.

STORAGE

6.33. The total capacity in the 40 existing godowns is 2500 MT. However, only 16 of these depots have permanent storage facilities. It is proposed to construct 18 additional godowns to replace the existing temporary facilities, leading to a marginal increase in the storage capacity to 2900 MT. This will be in addition to the 2500 MT capacity required for the food security programme.

WFP PROGRAMME

6.34. The FCB will, from the Fifth Plan onwards, be the exclusive agency for the supply and distribution of World Food Programme commodities for school and hospital feeding programmes, and the roads and bridges construction projects. This programme involves setting up of adequate godown capacity for storage and an enhanced capability for distribution through a larger transportation fleet and operational staff.

HORTICULTURAL MARKETING

6.35. This project involves the construction of storage (including cold stores), augmentation of the transport fleet, the establishment of small processing units and testing laboratories, and the training of staff. As a result of this project, the FCB's capacity for handling of various cash crops is expected to increase as follows: oranges--9%; cardamom--24%; potatoes--59%; apples-- 1 00%; ginger-- 213%; mustard--50%. Storage capacity for a total of 1,780 MT of apples, oranges and potatoes, is also to be constructed. This is in addition to the cold storage already commissioned under Australian assistance.

REGULATED MARKETS

6.36 In keeping with the Policy of effective intervention in the free market, the FCB is to set up regulated markets in the 3 major commercial centres of Phuntsholing, Gaylegphug and Samdrup Jongkhar to ensure remunerative prices to growers. This will ensure that the prices received are in accordance with the quality of produce, and will thereby provide an incentive to growers to improve product quality through better handling and packaging techniques. Market operations will be supervised by Corporation officials and the facilities would include godowns, auction yards, basic infrastructure such as power and water and appropriate equipment.

ANIMAL HUSBANDRY

6.37. Based on the experience of the previous four Plans, and future needs the Government has adopted the following objectives for livestock development during the Fifth Plan period:

- i. To improve the productivity of livestock through an integrated approach giving simultaneous attention to scientific breeding, better feeding, improved management, and effective animal health control through prevention of disease.
- ii. To supplement the income of livestock farmers through better marketing systems so as to ensure that the benefits of production are progressively transferred to the producers, especially in the rural areas.
- iii. To augment the production of livestock products to improve the nutritional intake of the people and achieve self-sufficiency in animal husbandry production.

6.38. The overall budgetary allocation for livestock development in the Fifth Plan is Nu.122.13 million, of which Nu. 44.96 million is for programmes to be implemented at the dzongkhag level by the local administration, and the remaining amount of Nu.77.17 million is for centrally administered programmes.

Table 50 OUTLAY: ANIMAL HUSBANDRY SECTOR (1981-87)

Programme	Total	Fifth Plan Outlay	
		Development	Maintenance
1. Cattle Development	23.660	9.600	14.060
2. Dairy Development	3.900	1.440	2.460
3. Poultry Development	12.630	4.400	8.230
4. Piggery Development	5.13	2.05	3.080
5. Sheep Yak Development	3.730	1.620	2.110
6. Equine Development	1.320	0.680	0.640
7. Fishery Development	5.500	3.000	2.500
8. Pasture Development	10.550	8.460	2.090
9. Animal Health Coverage	34.690	16.500	18.190
10. Extension Services	14.210	6.330	7.880
11. Direction	6.810	1.280	5.530
TOTAL: Animal Husbandry	122.130	55.360	66.770

6.39. The basic thrust of the animal husbandry programmes is to improve the genetic quality of livestock by introduction of exotic breeds for cross breeding with local breeds. Cattle development will continue to have revenue priority but greater attention is to be given to piggery and poultry due to their quick yielding potential. Through this, the overall productivity in this sector is to be improved. To support these programmes, improvements in and a better coverage of the animal health care system is to be achieved so that whatever is attained through the cross-breeding programmes, is consolidated through better animal care. Development of fodder and pasture especially winter fodder, will be an area of attention.

6.40. The total manpower requirement for livestock development in the country is presently projected at about 770 personnel of which atleast 400 will have to be technically qualified. Consistent with the national policy of the decentralisation of local Government, 230 technical personnel are to be posted at the local level, while the remaining 170 personnel will be required for running the centrally executed programmes.

CATTLE DEVELOPMENT

6.41. The cattle development programme is primarily intended to replace the local cattle breed with exotic breeds. To achieve this objective, the emphasis will be on bringing a large proportion of the local cattle under a cross-breeding programme using mainly the Jersey breed as the donor of exotic inheritance. At present, it is estimated that 40% of the cattle population is unproductive. Efforts will be made during the plan period to cull unproductive cattle and replace these with cross-breeds. To support the programme, the Jersey cattle farm at Samchi will be strengthened to have a herd of 80 cows and to produce 50 pure bred Jersey bulls every year. Two bull-calf rearing farms will be established at Thungti and Tala. In addition, the cross breeding programme with Brown Swiss bulls already in operation in Bumthang, will be extended to provide breeding coverage to almost all

breedable cows in that dzongkhag, through a network of 40 natural breeding centres.

6.42. In order to preserve and improve the local breed of cattle in Bhutan, selective breeding will be practised in a number of areas using the best Siri bulls. For the national breeding plan, a total of 312 cross-bred Jersey bulls, 78 cross brown Swiss bulls and 106 Nublangs will be distributed in the different dzongkhags. To complement the natural method of cross breeding, artificial insemination using frozen semen techniques will be introduced and gradually extended to various areas, especially around milk marketing centres/ cattle farms and other veterinary institutions. The cross breeding of local Siri cows with Mithun Bulls, which has been practised in Bhutan for a long time is to be continued. To ensure a steady supply of superior Mithun Bulls, the two Mithun breeding farms at Arong and Chukha will be strengthened and are expected to produce about 50 Mithuns annually. Pure Mithuns will also be obtained from outside the country. A total of 261 Mithun Bulls are expected to be distributed in the different dzongkhags during the Plan period on a payment basis, with a 30% subsidy borne by the Government. For upgrading of local buffaloes, 17 Surti buffaloes will also be distributed in the foothill areas of southern Bhutan.

DAIRY DEVELOPMENT

6.43. Milk in Bhutan, due to adverse geographical and transportation factors, has traditionally been converted into butter and cheese. However, with the start of the economic development plans and the growth of urban centres, the demand for fluid milk has increased rapidly without a proportionate increase in its supply. To alleviate the problem of demand for fluid milk, collection and marketing units were started at places like Phuntsholing, Samchi, Gaylegphug, Gedu and Thimphu. A feasibility study prepared by the National Dairy Development Board of India (NDDBI) revealed the possibilities of organising rural milk collection centres, and the processing and marketing of the produce in Phuntsholing and Thimphu. It is proposed to organize a milk project to supply 2,000 litres of milk daily in Phuntsholing. Adequate chilling facilities will be created at the village collection centres and recombining and packaging facilities in the town. Such efforts, though on a more modest scale, will be organized for collection and marketing of milk in places like Thimphu, Gaylegphug, Gedu and Samdrup Jongkhar. To provide concentrated attention and guidance for the dairy development programmes in the country, a Central Dairy Development Cell will be created in the Department of Animal Husbandry. The present annual production of milk has been estimated at 16.50 million litres. As a result of the dairy development programme, the annual production of milk by the end of the plan is expected to reach 26.50 million litres.

POULTRY DEVELOPMENT

6.44. The basic objective of the poultry programme is to augment the production and marketing of eggs and table birds. This will enable urban and rural demands to be met and generate additional income for the farmers engaged in poultry production. During the Plan period, the Department of Animal Husbandry will take up commercial production of eggs and broilers to meet the requirements of towns like Thimphu, Chukha, Phuntsholing, etc. However, the long-term objective is to gradually shift this production to the rural areas so that the economic and employment benefits would flow directly to the rural population.

6.45. A poultry production project is to be started at Wangchutaba near Thimphu with a production

capacity of 3000 eggs daily and 1000 table birds, every month. In addition, to cope with the expected increase in demand for table birds, a project with an estimated production target of 40,000 broilers per year is proposed to be taken up at Thimphu on a purely commercial basis, with institutional finance.

6.46. During the Plan period, under the dzongkhag scheme, it is envisaged that 17,400 improved birds will be distributed to improve the local breeds. In addition, 10,000 improved cockerels will be distributed on an exchange basis to accelerate the pace of upgrading village poultry. The poultry farms at Sarbhang, Paro and Lingmethang will be strengthened for breeding, rearing and the supply of cross-bred birds to the dzongkhags. The poultry farm at Sarbhang is also to be developed to have 600 layers of pure breeds for cross breeding, so that the hatchery at this farm would be able to produce cross-bred chicken for supply to the farmers in the nearby areas. It is expected that about 16,000 cross bred chicks of 12 weeks age will be reared annually and supplied to the villagers.

PIGGERY DEVELOPMENT

6.47. The objective of piggery development is to introduce genetically superior breeds so as to enable them to be marketed at an earlier age. As in the past, the programme of cross-breeding indigenous pigs in the rural areas with exotic breeds will continue. To reach self-sufficiency in the production of good quality boars, the pig farms at Paro, Sarbhang and Lingmethang will be expanded to have 40 breeding sows each, and breeds like Durac Jersey and Saddle-back be bred and multiplied. Under the dzongkhag plan, about 7,435 improved piglets will be distributed in the different dzongkhags at a subsidized rate.

6.48. To meet the pork requirement of the capital, the Central Pig Breeding Station-cum-Pork Processing Plant at Wangchutaba-Sarbithang will be expanded to have about 80 sows, and it is expected that this unit will function entirely on a commercial basis. Entrepreneurs interested in commercial pork production will also be encouraged through a package of technical and financial incentives.

SHEEP DEVELOPMENT

6.49. Sheep rearing is an important livestock occupation in the high altitude areas of Bhutan. During the current Plan, efforts of the Government will be directed towards increasing the number and quality of sheep in the village flocks. The different breeds of sheep at the Bumthang and Tashiyangphug farms will be mixed together to form a single pool Merino-type of sheep. The two farms will also be suitably strengthened to produce more improved cross-bred and pure-bred rams for distribution in the neighbouring sheep rearing areas. The sheep farm at Tashiyangphug is expected to produce about 300 rams for cross breeding with about 6000 ewes in the surrounding locality. The farm at Bumthang is expected to distribute about 900 rams for cross breeding purpose to cover about 18,000 ewes.

6.50. In order to upgrade the local sheep population in southern and western Bhutan, it is proposed to establish a large sheep breeding farm and extension project in Western Bhutan. Extension activities for sheep and wool development will be further intensified in the predominantly sheep

rearing blocks by the livestock authorities in consultation with the local planning bodies. Such activities would include training of shepherds in improved shearing practices, production of clean and graded wool, sheep management and control of sheep diseases, etc.

6.51. With regard to Yak development, efforts will be concentrated on qualitative as well as quantitative increases. For this purpose, encouragement will be given and efforts made to exchange Yaks from one rearing region to another, to improve the quality by avoiding in-breeding. The Yak breeding farms at Shingkar and Shabi Tongerfog will be used both for selective breeding among Yaks and to provide cross breeding facilities with Jersey breeds.

EQUINE BREEDING

6.52. Ponies and mules have traditionally played a major role in the transportation system of the country. The local type of ponies are extremely well adapted to the Bhutanese conditions, however, in recent times a certain amount of degeneration in their quality has been observed. It is, therefore, the aim of the Government to remedy this situation by the introduction of exotic breeds which can be used for cross-breeding with the local horses so that the progeny will be well adapted to local conditions. A stud farm of 20 Halflinger breeding mares will be developed at Bumthang so that it can help to maintain 40-50 stud centres in the country. For mule breeding, about a dozen Italian stallions will be acquired during the Plan period.

FISHERY DEVELOPMENT

6.53. The commercial cultivation of fish is a relatively new industry in Bhutan. To meet the growing demand, the Government has taken a number of steps to promote such activities. The geo-climatic conditions in Bhutan are suitable for cold water fisheries for food and sports at high altitudes, and fresh water fisheries in rivers, lakes and ponds in the central and southern areas. It is proposed to further stock brown trout in the rivers but at the same time also gradually replace them with rainbow trout which has a shorter maturing period. In the central temperate and southern sub-tropical regions, carp culture either simply or as polyculture will be promoted in private and community ponds.

6.54. To meet the requirements of the fisheries programme, it is proposed to remodel and strengthen the trout hatchery at Haa; establish a fish seed production centre at Gaylegphug; establish three fishery demonstration units at Samchi, Chirang, Samdrup Jongkhar; and, consolidate the existing unit at Sarbhang. While such basic fishery infrastructure is to be set up, for the benefit of interested farmers, the Government will distribute fingerlings and give training, extension and technical guidance on fish cultivation. The demonstration of the advantages of fish-cum-paddy culture will also be given.

FODDER AND PASTURE DEVELOPMENT

6.55. Bhutan has an estimated area of 0.34 million hectares of pasture land of which 40% is considered unproductive and low yielding. During the current plan, the department will continue the

programme of developing both private and community pasture land by giving technical advise, rhizobiums, legumes and fodder trees to the farmers. At the same time pasture and fodder tree plantation will continue as an integral part of the social forestry plan. The grass seed multiplication centre at Sarbithang will be strengthened to produce about 32,000 kg. of fodder seeds annually, while fodder-tree seedlings will also be produced at this centre and other farms within the country. At the Sheep and Yak Project, Bumthang, systems of developing leys (fallow land) and perennial pasture will be evolved and demonstrated for rotational grazing. Under the dzongkhag plans about 4900 ha. of grasslands will be developed. It is proposed to distribute 94,000 kgs. of grass and legume seeds, 0.360 million fodder-tree seedlings, 1419 MT of superphosphate and urea, and 11,090 packets of rhizobiums free of cost to the farmers.

6.56. For economisation and minimization of the cost of feeds for cattle, poultry and pigs, steps will be taken to locally manufacture balanced feeds. It is proposed to establish a feed mixing plant and godown at Phuntsholing. When fully operational, this plant will progressively make use of locally produced feed like maize, rice bran, rice polish and industrial by-products to reduce the cost of feeds.

LIVESTOCK HEALTH COVERAGE

6.57. Livestock coverage will continue to receive a high priority during the current plan. The need for health coverage is all the more critical during the Fifth Plan period, as the major objective of the livestock sector is to improve the quality of livestock, through cross-breeding programmes. Considerable progress and success have already been achieved in the past plans in identifying the incidence of various infestations, protozoan diseases and other parasitic infections among the different species of livestock and poultry, and in evolving a methodology of providing prophylactic coverage. During the Fifth Plan, such preventive action will be continued and with the increasing introduction of exotic blood in the different species of lives to country, special strategies will be evolved to detect and control the emergence of new diseases. Regular preventive treatment like vaccination against foot and mouth disease, continuation of the Gid disease control programme, periodic testing of farm animals and field cattle for brucellosis, tuberculosis and John's diseases, etc.

6.58. To implement the preventive treatment programme, the existing Veterinary Diagnostic Laboratory at Sarbithang will be expanded into a regular establishment with enough staff, buildings equipment and other basic infrastructure. It is also proposed to start a new feed analysis section at the laboratory for the proper scientific analysis of feed ingredients. Under the livestock health coverage programme, a Veterinary Vaccine production unit is also to be established. This unit will initially produce only vaccines against HS, B.Q. and Anthrax infections, and act as a storage depot for all other biological requirements. It is proposed that this storage depot will eventually be developed into a full fledged 'biological products station', capable of taking up the production of sophisticated vaccines including viral vaccines. At the dzongkhag level, for effective animal health care, the Veterinary Hospital at Thimphu will be further strengthened, while all the seventeen veterinary dispensaries in the dzonkhags will be upgraded into Dzonkhag Veterinary Hospitals.

EDUCATION, TRAINING AND EXTENSION

6.59. During the Fourth Plan the Royal Veterinary Institute at Wangchutaba was established. The Institute now runs two courses--the one year certificate course for technical assistants and the two year Diploma course for technical officers. In addition, it also provides in-service training to existing field workers to update their knowledge. During the Fifth Plan period, it is anticipated that 119 certificate holders, 36 diploma holders and 156 in-service personnel will be trained at the Institute. The Institute is also to be expanded to acquire a veterinary science teaching dispensary at Babesa, a small model farm complex at Sarbithang, and more equipment for its laboratory. For more specialized courses, personnel will be sent outside the country.

6.60. The training of farmers will be continued at the departmental farms in Wangchutaba, Samchi, Lingmethang and Bumthang. Each year five farmers from every block in the country will be given farmers' training. By the end of the plan period, a total of 4,890 farmers will be covered under the scheme. The Royal Veterinary Institute will oversee this training to make it problem-oriented and suitable to the Bhutanese farmers. As a part of the extension service, about 100 cattle shows-cum-exhibitions will be conducted at the Dzongkhag level under the technical guidance of the Animal Husbandry staff.

Table 51 SELECTED FIFTH PLAN PHYSICAL TARGETS (Animal Husbandry)

Sl.No.	Program	Unit	Target	Remarks
1.	Milk Production	M. litres	26.5	Annually
2.	Commercial egg production (departmental)	Nos.	3000	Daily
3.	Commercial broiler production (departmental)	Nos.	1000	Monthly
4.	Improvement of grass lands	hectare	4900	--
5.	Fodder tree plantation	M. Nos.	0.36	--

FORESTRY

6.61. Preservation of the forest cover in a mountainous country like Bhutan is essential in order to conserve the environment and ecological balance. This objective is not in conflict with either the interests of the population or the commercial exploitation of forests so long as there is scientific management and utilisation of these resources. At the threshold of the fifth Plan/ substantial work in this regard has already been carried out throughout the country the overall growing stock volume has been identified; and, adequate physical infrastructure, in particular relating to roads and power, has become available in a number of areas close to exploitable forests. This has opened up the possibility of setting up forest industries based on modern technology, and the major expenditure in the Fifth Plan will be in this area, like agriculture and animal husbandry, forestry can serve as a source of growth of rural incomes in addition to its commercial importance.

6.62. The general objectives of forestry development in the 1980's are as follows:

- i. Conservation and augmentation of forest resources
- ii. The scientific management and exploitation of forests to:
 - a. meet the population's needs for forest products;
 - b. promote forest based industries, in particular, those with a high value added content; and,
 - c. increase exports of forest products and Government revenues from the forestry sector.
- iii. Preservation of the ecological system, particularly the varied wild life.

6.63. The total outlay for the forestry sector is Nu. 283 million. Of this, Nu. 97 million forms a part

of the regular programmes for this sector, and Nu. 186 million is the expenditure envisaged on commercial and industrial activities. A contribution of about Nu. 37 million or about 20% of the investment plan for this sector is available from budgetary sources, and the balance of Nu. 149 million will have to be met from external sources.

Table 52 OUTLAY: FORESTRY SECTOR (1981-87)

Programme	Total	Fifth Plan outlay	
		Development	Maintenance
A. Regular Programmes			
1. Survey, Demarcation Management Plans	9.438	9.330	0.108
2. Afforestation	7.643	5.624	2.019
3. Wild Life Management	2.587	0.100	2.487
4. Fire Conservancy	0.631	--	0.631
5. Logging Roads Paths	17.076	16.000	1.076
6. Tashila Ropeway	4.258	4.258	--
7. Training/Study Tours	5.933	5.933	--
8. Establishment Expenses	49.474	10.943	38.531
Total/Regular Programmes	97.040	52.188	44.852
B. Investment			
1. Gedu Veneer Project (Integrated Wood Industry)	108.093	108.093	--
2. Graded Particles Board	56.301	56.301	--
3. Logging (Wood Harvesting)	21.134	21.134	--
4. Feasibility Study	0.132	0.132	--
Total/Investment	185.660	185.660	--
Grand Total	282.700	237.848	44.852

SURVEY, DEMARCATION AND MANAGEMENT PLANS

6.64. Following the pre-investment survey already carried out, more intensive activities involving the identification, demarcation and detailed survey of forest resources followed by the preparation of detailed management plans in order to map out the entire forest area with marked boundaries, preparation of the specie-wise stock inventories and growing stock volume, had already been started in previous plans. During the Fifth Plan, it is proposed to extend these activities as given below:

- i. Survey and Demarcation: This involves the mapping and marking of forest boundaries with permanent boundary pillars, provision of watch and ward staff, settlement of community claims over forest areas and the resettlement of isolated habitations. Over 11,000 sq. km. of forest area had already been surveyed and demarcated upto the end of the Fourth Plan and an additional 10,000 sq. km. is proposed to be covered in the Fifth Plan period.
- ii. Preparation of Management Plans: In order to harvest forests scientifically, it is necessary to undertake specie-wise inventories, and estimate the annual accruals in stock in the various forest areas. After the completion of survey and demarcation, the preparation of management plans which serve this purpose, is therefore essential. By the end of the Sixth Plan 3763.5 sq. km. of forest areas had been covered under this programme and in the Fifth Plan, management plans will be prepared for an additional 1,500 sq. km. of forests.

CONSERVATION OF FORESTS

6.65. In view of the heavy depletion of forests in the past as a result of unscientific extraction, natural causes, encroachment, establishment of isolated habitations and the practice of shifting cultivation, a concerted set up programme to conserve and restock forests has been conceived. These are:

- i. Afforestation: This is to be achieved through natural regeneration which is to be promoted by the closure of heavily depleted forests, and where this is not adequate, by the raising of new plantations. During the Fifth Plan, 1830 ha. of new plantations will be raised. A more ambitious and expanded programme to cover 7500 hectares under new plantations is also proposed during the Plan period. This programme is primarily meant to provide raw-material for industrial purposes and it is intended to recycle the wood, thereby preventing denudation.
- ii. Social Forestry: This programme is aimed at creating an awareness among rural households of the need for scientific forest management and also to increase the supply of fuel and timber for domestic use. Each rural household will be encouraged to plant 10 trees in its own lands, with the plant materials being supplied free of cost by the Government. During the Fifth Plan, over 400,000 plants will be distributed. In order to support the above programmes, forest nurseries will also be improved and expanded.
- iii. Silvicultural Operations: In order to ensure the maximum productivity from the existing forests, silvicultural operations will be undertaken involving the maintenance of growing stock, primarily through timber cutting and trimming of natural forests and older plantations.
- iv. Fire Prevention: One of the main sources of forest damage are forest fires. In 1980 there were 19 major forest fires in the main growing areas which damaged 1728 ha. of forests. The approach adopted in this programme is to educate the rural population in fire prevention and fire fighting, and provide fire fighting equipment and trained personnel in each block. The Fifth Plan programme will concentrate on the major forest areas in 7 dzongkhags.

HARVESTING

6.66. The major programmes in this area are:

- i. Mechanisation of logging operations: This project was started on a small scale during the Fourth Plan and is to be further expanded and streamlined to run on sound commercial lines. It involves the setting up of a major logging centre at Gedu, aimed at extracting timber for the forest industries complex which is being constructed there. The operation is expected to yield a harvest of 34,000 cu. m annually from 1984 onwards.
- ii. Construction of Forest Roads: In order to facilitate the logging operations and the transportation of timber, required to cater to the enhanced logging volume needed for the wood-based industries to be set up in the Fifth Plan, 170 km. of forest roads are to be constructed.
- iii. Tashila ropeway: It is proposed to construct a ropeway of about 5 km. in length to connect the high, valleys of Kotokha area in Western Bhutan to the national highway near Wangdi. The ropeway will complement the on-going forestry utilisation project in this area, and open up the possibility of further developing these fertile agricultural valleys. It is proposed to complete the project by 1984, at a total cost of Nu. 4.3 million.
- iv. Extraction of minor forest produce: While forests offer the possibility of yielding a number of valuable minor products--medicinal herbs, rosin, bamboo, beeswax etc., this activity is at present, largely carried out by the rural population on a small scale. There are no proposals to expand this into large scale commercial operations in the Fifth Plan, however, mushroom and saffron cultivation will be taken up on a trial basis and expanded.

FOREST INDUSTRIES

6.67. The Forest industries planned in the Fifth Plan period have been conceived keeping in view the management plans prepared so far. The two major industries proposed, are outlined below. However, it is possible that with the further preparation of detailed plans for the scientific exploitation of the forests, other viable schemes may also develop.

- i. Integrated Mechanical wood-based industrial complex, Gedu: This project follows the recommendations of an FAO/UNIDO/UNDP team which visited Bhutan in 1980. In the first phase, which is to be commissioned by early 1983, a veneer factory is to be set up with an investment of Nu. 21.62 million for the manufacture of 8650 cubic metres of veneers annually. The Project will have technical and management collaboration with a reputed manufacturer from India and will mainly be geared for export to the Indian market. Phase II of the complex which will be fully operational in 1985 will consist of a plywood manufacturing plant with an investment of Nu. 86.17 million and annual installed capacity of 27850 cubic metres of plywoods, blockboards, door frames, etc. The plant is expected to begin production in late 1983. This plant will be geared both towards exporting products to the Indian market and to third countries as well. The entire complex will be wholly owned by the Government.
- ii. Graded Particle Board, Gedu: It is proposed to locate this plant at Gedu as well, as the raw materials will comprise of lops and tops and other wood waste from the integrated complex. The estimated project cost is Nu. 56.30 million. The plant will have capacity of 12,200 cubic metres of laminated, veneered and other particle boards. The project is to be set up in the joint sector and is expected to be commissioned in 1984. It will cater both to the Indian as well as third country markets.

PRESERVATION OF WILD LIFE

6.68. The existing wild life sanctuaries will be further developed by improving the infrastructure for regulation and management through the construction of buildings, elephant tracks, etc. Hunting and fishing will also be regulated appropriately. The total cost of this programme is Nu. 2.587 million.

Table 53 FIFTH PLAN TARGETS, FORESTRY SECTOR

Sl.No.	Programme	Units	Target	Remarks
1.	Survey & Demarcation	sq. km.	10,000	Fifth Plan Cumulative
2.	Management Plans	--do--	1,500	--do--
3.	New Plantations	hectare	9,330	--do--
4.	Social Forestry (plant distribution)	'000 nos.	400	--do--
5.	Mechanical Harvesting	'000 cu. m.	34	Annual yield
6.	Forest Roads	kms.	170	Fifth Plan cumulative
7.	Integrated Forest Industries Complex, Gedu:			
	Phase I	cu.m.	8,650	Annual veneer
	Phase II	cu.m.	27,850	Annual production (plywood, block-board door frames)
8.	Graded Particle Board, Gedu	cu. m.	12,200	Annual production

6.69. At the end of the Fifth Plan, there was a substantial shortage of power and imports from India had to be resorted to for meeting the domestic demand. With the commissioning of the Chukha Hydel Project in 1984/85 this situation is going to undergo a dramatic change and Bhutan will become a net exporter of power. Adequate energy will also be available to meet the demands of the new industrialisation proposed during the Fifth Plan. The power sector plan for 1981-87 is

dominated by the commissioning of the Chukha Project. The development strategy that flows from this is two-fold: to develop a grid in western Bhutan based on Chukha Project and in other parts, to undertake a number of generating projects which will be initially, isolated systems. For this purpose, a major effort towards detailed surveys and the building up of feasibility reports for projects in these areas will have to be pursued. However, power development is among the most capital investment and system inter-connected. In view of the mismatch inherent in Bhutan's potential (real demands coincide with lean discharges in rivers with hydro-electric potential) the preparation of a Master Plan based on the right mix of systems with least overall cost emerges as a high priority area. The objectives of the power development plan during the Fifth Plan will, therefore, be as follows:

1. to progressively augment generating capacity through hydro-electric plants primarily for domestic and industrial use and also for export; it is also proposed to draw a 220 KV line from Chukha to Gaylephug which will be further tapped at Dagana, Chirang and Sarbhang to supply the southern region. The total length of these lines which are to be constructed in the Fifth Plan is about 275 km. In addition to these transmission lines a further 220 KV line is to be taken up from Chukha southward to carry the power which will be exported to India. The cost of this line however, is included in that of the Chukha project. Alongwith these major transmission lines, a number of sub-transmission lines are also to be constructed to connect up existing small Hydel power stations with the western regional grid and also rearrange the present distribution system in the capital, Thimphu.

RURAL ELECTRIFICATION

6.75. Rural electrification was pursued in the past in areas covered by existing isolated generating schemes, and in southern Bhutan from power imported from West Bengal and Assam. In the Fifth Plan with the substantial increase in generating capacity a more vigorous programme would be pursued with the emphasis on energising agricultural operations and cottage industry sectors. The western region would naturally be the area of concentration and a distribution network and a number of 11 KV lines and below would be built up especially in Paro, Thimphu, and Wangdiphodrang to meet the energy requirements of the proposed thrust in rural development programmes aimed in increasing food production.

URBAN ELECTRIFICATION

6.76. As most urban areas have already been electrified, the emphasis here would be in expanding the network in the growing townships and the replacement of small capacity lines by large capacity lines capable of meeting the future demands.

RESEARCH AND DEVELOPMENT

6.77. It is proposed to build a well equipped research and developed group which will collect and disseminate energy related data and which is capable of undertaking long term planning in the energy field including the preparation of final design and cost estimates for both small and large scale projects. Studies will also be carried out on non-conventional energy sources and experimental prototypes adapted to local conditions will be designed and fabricated. The policy with respect to alternative sources of energy, particularly in the rural areas is to encourage the gradual replacement of the use of non-renewable sources, the most important of which is hydro electricity.

TRAINING

6.78. The training of the required personnel for power development would be appropriately phased in view of the manpower constraints. Starting with capability to man maintenance and operations, manpower capability would be built up in stages for the erection of small hydel plants and distribution lines, erection of main transmission lines and finally for erection of major hydel projects. Apart from in-plant-training a major programme of higher training abroad is envisaged.

TARIFF POLICY

6.79. The development of a tariff policy is recognised as a key factor in raising internal demand for in industrial agriculture and domestic use. As the energy system would be fundamentally hydel based, a tariff policy promoting use in off peak periods would be required. This would call for stipulation of differential rates between peak and off period use as well as differential rates to encourage industrial and agricultural use over domestic use. Appropriate metering arrangements will also be adopted. With the widespread use of power, it is also essential to specify and ensure observance of safety standards.

Table 55 PLANT TARGETS: POWER SECTOR

Sl.No.	Programme	Unit	Target	Remarks
1.	Generation:	M.W.		
	a)Chukha	--do--	336	additional capacity installed in Fifth Plan.
	b) Other Hydel systems	--do--	1.5	
	c) Diesel	--do--	0.5	
	Total		338.0	
2.	Domestic Transmission (2x200 KV lines, 5x66 KV lines)	kms.	225	additional length installed in Fifth Plan.

INDUSTRIAL DEVELOPMENT

6.80. Although constraints to extensive industrialisation in Bhutan still persist, certain favourable conditions have emerged as a result of past developments which present an opportunity to undertake industrial development on a significant scale for the first time. These conditions are: the availability of cheap, abundant power from the Chukha Hydel Project by 1984/85; the identification of a number of commercially exploitable mineral deposits; and, an adequate development of the physical infrastructure necessary to permit the setting up of resource based industrial ventures

6.81. The objective of industrial development in Bhutan are to maximise the value-added generated from natural resources, particularly from minerals, forest and agricultural produce; to increase incomes and generate higher government revenues; to promote exports, particularly those with a high valued-added content, in order to improve the balance of trade position and earn foreign exchange; and to encourage and improve traditional crafts in cottage industries in order to supplement rural incomes.

6.82. In view of the limited entrepreneurial capability in the country, most scale industrial ventures are likely to be at least in the medium term in the public or joint sectors, with private entrepreneurs having a minority participation. This reflects basically a promotional approach on the part of the Government as risk capital from private sources is unlikely to be forthcoming for large | investments.

6.83. The total outlay for industrial development is Nu. 708 million. Out of this Nu. 46 million is part of the regular programme to finance establishment expenditure, the Geological Survey of Bhutan training activities and a number of feasibility studies. The balance of Nu. 662 million is the investment plan for this sector, covering the establishment of the major industries proposed in the plan. The internal contribution towards the financing of this investment is Nu. 332 million, of which Nu. 132 million will be from budgetary resources and Nu. 200 million from internal borrowings. The balance of Nu. 330 million is the deficit to be met from external sources.

Table 56 OUTLAY: INDUSTRIES MINES SECTOR (1981-87)

Programme	Fifth Plan Outlay		
	Total	Development	Maintenance
A. Regular Programme			
1.Industrial Estates	1.420	1.225	0.195
2.Training	6.638	6.638	--
3.Feasibility Studies Reports	6.035	6.035	--
4.Geological Survey of Bhutan	18.482	10.000	8.482
5.Establishment Expenses	13.340	5.577	7.763
Total:Regular Programmes	45.915	29.475	16.440
B. Investment			
1.Graphite Mining Beneficiation	10.000	10.000	--
2.Slate Mining Processing	3.600	3.600	--
3.Calcium Carbide	95.000	95.000	--
4.Polythene (HDPE) Industry	7.160	7.160	--
5.Nanglam Cement Plant	516.000	516.000	--
6.Gypsum	5,000	5.000	--
7.Cottage Small Industries	22.181	22.181	--
8.Others (including Phyto chemical studies and IDC)	3.555	3.555	--
Total:Investment	662.496	662.496	--
Grand Total	708.411	691.671	16.440

6.84. Industrial development, especially of large scale industries, would be based on the exploitation of the comparative advantages of Bhutan, notably of the mineral and forest tesources, agricultural produce and cheap power. Although the full survey of the mineral potential is still far from complete, on the basis of proven deposits a number of project proposals have been identified. Private investment is to be primarily in small-scale industries. These are expected to focus on traditional crafts, processing of agricultural produce and the down-stream usage of the output from large industries, and will be promoted through a package of incentives including the provision of sites on fully developed industrial estates. It is also proposed to establish an Industrial Development Bank of Bhutan to provide financial and other assistance to all segments of the private sector which will also have a major promotion role, in order to provide a comprehensive Package for encouraging industrial development.

NANGLAM CEMENT PLANT

6.85. It is proposed to establish a 1,500 tonne per day cement plant at Nanglam, eastern Bhutan. At current estimates, the plant is expected to cost Nu. 516 million and has been conceived to process cement from two adjacent limestone deposits--a 40 million MT high grade deposit and a 30 million MT low grade deposit, the combined extraction of which will be cement grade limestone. Detailed investigations of these deposits are expected to commence in 1983. In addition, 40% of the coal requirement can be met from deposits located in the country. The plant will be based on the energy saving dry process and at 90% utilisation is expected to have a 23.5% rate of return on capital employed. This is based on future expectations of cement prices in north-eastern India which will be the primary market. A pre-investment study has been undertaken by the Penden Cement Authority.

CALCIUM CARBIDE PLANT

6.86. A Calcium Carbide manufacturing unit of 40-60 MT per day capacity is to be set up in the joint sector at Singye Gaon near Phuntsholing. This will process limestone obtained from the proven deposits at Tala and Chelila. The power requirements will be met from the Chukha Project and inputs of petroleum coke will come from India. The project is expected to cost Nu. 95 million. It will have gross profitability of 20% and generate an annual revenue of about Nu. 14 million. The project will also result in a number of small down-stream units being set up. The plant is expected to be commissioned by 1984, and will be eared to export primarily to the Indian market where a substantial demand exists.

GRAPHITE MINING AND BENEFICIATION

6.87. This unit will consist of facilities to beneficiate graphite to a purity of 95% out of the ore extracted from proven deposits located at Haa in western Bhutan, for external markets. The installed capacity of the unit is to be 15,000 MT per annum. The capital cost of the Project is expected to be Nu. 10 million and is expected to be commissioned by 1984.

GYPSUM MINING

6.88. The existence of a deposit of 78 million tonnes of gypsum has been confirmed in Pema Gatshel dzonkhag. It is proposed to mine the gypsum for export, and also to supply both the existing cement plant at Penden and the proposed one at Nanglam. A capital investment of Nu. 5 million is required to develop this mine.

SLATE MINING PROCESSING

6.89. This project is meant primarily to replace corrugated iron sheets as roofing material, as slate is longer lasting and cheaper. The project will be based on a 20 million cubic metre deposit established in Wangdiphodrang dzongkhag, where small scale quarrying is already in operation. An investment of Nu. 3.0 million is involved and it is expected that the expanded operation will go into

effect by 1983.

HIGH DENSITY POLYTHENE PIPES

6.90. This project is being undertaken to meet the growing demand within the country for HDPE pipes which are required for rural water supply schemes. The capacity of the plant is expected to be 108 metric tonnes meter per annum. The total project cost is Nu. 7.16 million.

INDUSTRIAL ESTATES

6.91. This programme is intended to establish the appropriate infrastructure required for the setting up of industries, especially in the small scale. It is proposed to further develop the 4 existing industrial estates and also establish 2 new estates during the Fifth Plan with an outlay of Nu. 40 million. Only Nu. 1.432 million has been budgeted in the plan for this programme. Therefore, its successful implementation is entirely dependent on the availability of additional resources through external assistance or other sources. The proposed new estates will be located at Nanglam in eastern Bhutan and Singye Gaon near Phuntsholing. The various elements of the programme constitute survey of the estates; preparation of layout plans; development of sites; and provision of road, water supply, power, telephone, telegraph and postal services. All the sites will be available for small scale industries. The industries would primarily centre around ancillary production to the major units proposed in the Fifth Plan.

COTTAGE INDUSTRIES

6.92. For the development of Cottage Industries, local entrepreneurs will be encouraged to upgrade the scale and technology of traditional handicrafts and items of local use, the production of which are based on locally available new materials and indigenous skills. The Government will actively encourage these entrepreneurs by assisting them in the preparation of projects procurement of machinery, etc. The development of entrepreneurial operational and managerial skills would be promoted by the Government in the Royal Institute of Management which is proposed to be set up during the plan, as well as by sponsoring entrepreneurs for training outside the country. The investment however, would have to come primarily from the entrepreneurs themselves, and only be supplemented by borrowings from the internal financial institutions. One of the projects requiring special mention in the area of cottage industries is the women's income generating project supported by UNICEF to promote weaving centres in rural areas.

GEOLOGICAL SURVEY OF BHUTAN

6.93. In view of the urgent need to survey the country's mineral resources and given the absence of trained local personnel, this task of exploration was initially entrusted to the Geological Survey of India (G.S.I.). However, as it was essential to develop the national capabilities in this area, in 1982 the Geological Survey of Bhutan (GSB) was started with a core group of geologists and a staff of about 80 personnel. At present the GSB and GSI are working side by side and all efforts are being made to undertake the training of personnel in the field of geology and minerology.

INDUSTRIAL DEVELOPMENT BANK

6.94. So far the financing of projects has been done on an adhoc basis. However, during the Fifth Plan, given the substantial industrial development programme which is being envisaged, there is a strong necessity to streamline and institutionalise industrial financing. It is therefore proposed to establish an Industrial Development Bank which will engage in term lending to industrial projects. The Bank will also assist the Government in the identification and evaluation of projects. The financial requirements of the Bank are Nu. 400 million, of which Nu. 100 million is to be the equity and Nu. 300 million the debt components. At present the World Bank is investigating the feasibility of establishing such an institution and the initial assessment is favourable.

Table 57 FIFTH PLAN TARGETS: INDUSTRIAL DEVELOPMENT

Sl.No.	Project	Capital Investment Nu. in million	Return (net) Nu. in million
1.	Nanglam Cement	516.0	(to be commissioned in the Sixth Plan)
2.	Calcium Carbide	100.0	14.1
3.	Graphite Mining Beneficiation	14.0	2.2
4.	Gypsum Mining	5.0	n.a.
5.	Industrial Estates	40.0	n.a.

(Estimates are tentative based on pre-feasibility studies)

TRADE AND COMMERCE

6.95. The Royal Government recognises that the major thrust in industrial and agricultural production planned for the eighties has to be accompanied by a vigorous effort to develop the infrastructure required to promote trade. It is also recognised that a larger proportion of future imports of equipment, materials and consumer goods will be outside the aid structure and will therefore require to be financed through exports, in particular exports yielding foreign exchange earnings.

6.96. In view of this, the objectives for trade development in the eighties are to:

- i. Create the physical infrastructure required to promote the growth of trade and commerce, including an effective internal marketing and distribution network which will develop the local markets for indigenous products and promote internal trade.
- ii. Monitor and develop external markets in order to exports and earn sufficient foreign exchange to finance the increasing volume of imports.
- iii. Develop the managerial and technically skilled personnel required.
- iv. Promote entrepreneurship and build up a local trading community.

6.97. The total expenditure envisaged in this area during the Fifth Plan is Nu. 48.35 million. A major part of this will be for the purchase of transport equipment and on developing the necessary facilities.

Table 58 OUTLAY: TRADE COMMERCE SECTOR (1981-87) Nu. in million

Programme	Total	Fifth Plan outlay	
		Development	Maintenance

1. Bhutan Standard Institute	7.286	2.966	4.320
2. Trade Promotion Cell	4.749	3.859	0.890
3. Trade Data Collection Cell	5.167	4.127	1.040
4. Purchase of Transport Equipment Handling facilities	14.270	14.270	--
5. Training Consultancy services	3.048	3.048	--
6. Direction	13.830	0.780	13.050
Total	48.350	9.050	19.300

TRADE STATISTICS CELL

6.98.A Trade Statistics Cell is to be set up with fully trained personnel, at a cost of Nu. 5.167 million. This includes the cost of short term international consultancy services, personnel, and equipment. The cell will be responsible for the systematic collection of data pertaining to imports and exports and internal trade. The data will be used for monitoring the growth and movement of external and internal trade; the composition and movements in the balance of payments; and, developments in the commercial sector.

TRADE PROMOTION CELL

6.99. A Trade Promotion Cell is to be set up with an outlay of Nu. 4.749 million during the Fifth Plan. The cell will be located in the Export Division of the State Trading Corporation of Bhutan's products in foreign markets, participation in international fairs, and the publication and production of publicity materials. It will also look in to product adaptation for export markets.

BHUTAN STANDARDS INSTITUTE

6.100. In order to ensure adherence to quality standards, the Bhutan Standards Institute is to be set up in the Fifth Plan, with an outlay of Nu. 7.3 million. The Institute will be an autonomous body which will oversee the laying down of appropriate standards of quality, taking into account safety, hygiene, reliability and the requirements of outside markets. While nationals will be trained to undertake the various activities, consultant will be initially employed to determine products to be covered and the modalities and procedures of operations such as testing, supervision, etc.

CONSULTANCY TRAINING

6.101. The formulation of policies, procedures and appropriate legislation governing external trade, needs to be developed. Initially international consultants will be used to define export and import policies, to make recommendations for appropriate institutional and legislative procedures, and to specify the documentation and framework necessary for the smooth operation of the system. The programme will be undertaken as early as possible in the fifth Plan, so that the increased import requirements, and exports from new industries being set up, are channelised efficiently through well defined systems. Under the training programme, 23 persons are to be trained outside the country in the areas of business management trade promotion and marketing.

CREATION OF PHYSICAL INFRASTRUCTURE

6.102. The specialised storage capacity (including cold stores) in the public sector trading institutions--the State Trading Corporation of Bhutan and the Export Division, through which substantial trade is channelised, will be augmented. In addition, transport vehicles will be procured in 2 phases and distributed to the various organisations to strengthen their fleets. In the first phase it is intended to purchase a 400 tonne barge and about 18 heavy trucks, and the second phase a number of refrigerated and containerised trucks will be obtained.

PROMOTION AND REGULATION OF INTERNAL TRADE

6.103. In order to oversee trading activities within the country, all trading and commercial establishments have been brought under a general scheme governed by the internal trade Regulations. To strengthen the administration of the regulations, it is proposed to set up two regional trade offices at Samdrup Jongkhar and Gayleghug (both major commercial centres in southern Bhutan) in addition to the existing one at Phuntsholing.

ROADS AND BRIDGES

6.104. The main objectives of the programme in this area during the 1981-87 period, are to further develop an effective network of roads, suspension bridges and mule-tracks to connect every settlement in the country. This will assist economic integration and growth in the country by opening up the interior, and thereby also facilitate a greater exposure of the population to the development process. It will also allow greater and improved access for the transportation of marketable surpluses and the commodities and services required for the development of these areas.

6.105. In this sector, efforts will be made to further reduce the current dependence on external financial and manpower resources. To achieve this end, the following methods are to be utilised: greater use of indigenous materials and the substitution of imported construction materials with locally available materials; greater public cooperation, in particular through the supply of unskilled manpower; fuller utilisation of the technical training facilities available within the country and the development of appropriate inplant training schemes to produce the required personnel; and, the importation of suitable technology for optimising the use of available resources.

6.106. The total outlay on the roads and bridges programme is Nu. 459.17 million. In order to meet the labour shortage, a substantial mechanisation programme for road construction and maintenance is also to be undertaken.

Table 59 OUTLAYS: ROADS BRIDGES SECTOR (1981-87)

Programme	Total	Fifth Plan Outlay	
		Development	Maintenance
1. Roads	238.946	209.260	29.686
2. Machinery	26.000	26.000	--

3. Black-topping, of East-West Highway through DANTAK	105.000	105.000	--
4. Suspension Bridges	27.392	26.214	1.178
5. Mule Tracks	1.805	0.400	1.405
6. Training	4.800	4.800	--
7. Establishment	55.226	3.100	52.126
Total	459.169	374.774	84.395

ROAD CONSTRUCTION AND MAINTENANCE

6.107. During the Fifth Plan, it is planned to construct an additional 467 km. of new roads, including the construction of a network of feeder roads. Some of the new roads are to connect district centres to the existing National highways and also to open up remote areas. The Wangdi Chirang road is important in this category as it will open up a number of villages and provide a connection between western and central Bhutan. Other roads have a more directly economic purpose. Notable amongst the latter are 2 roads to connect Gedu with forest areas in the interior, and a road northwards from Samchi in the Southern plains, which could eventually be extended to connect Haa, Paro and Thimphu. A sum of Nu. 105 million has also been allocated for black topping the East-West highway between Wangdi and Tashigang. In addition to these programmes, a number of roads begun in the Fourth Plan are to be improved and completed.

MECHANISATION PROGRAMME

6.108. The mechanisation of road construction activities which was started in 1979, is to be enhanced, and the mechanised construction capability increased from the present 45 km per year to 250 km per year. The mechanisation project is to be assigned a high priority in view of the severe labour constraint and will include equipment, training of personnel in operations, repairs and maintenance.

SUSPENSION BRIDGES

6.109. Bhutan is characterised by numerous major and minor rivers and creeks which have hindered travel. To provide better communication links between villages and to link them to the road heads, the construction of 106 new suspension bridges is envisaged. This construction will enhance the tempo of the rural economy and promote the implementation of development programme in, these areas. During the Fifth Plan, the construction of 80 suspension bridges is being undertaken with assistance from UNCDF. However, the construction of new roads and the renovation of 288 km of existing roads in the plan will necessitate the construction of more suspension bridges. Accordingly, it is planned to take up another 106 bridges. In addition, WFP rations will be utilised to complement the labour supplied by the district authorities.

CONSTRUCTION TO MULE TRACKS

6.110. The overall requirement of mule tracks is estimated to be about 2500 km to connect the 4500

settlements in the country. This will of course, keep varying according to the new settlements developed. However, for the next five years, about 1000 km of tracks will be improved, upgraded and extended. The task of planning, execution and maintenance of the mule tracks has been assigned to the Dzongkhag administrations. The central directorate will mainly provide the technical assistance required.

Table 60 FIFTH PLAN TARGETS FOR THE ROAD SECTOR

Sl.No.	Programme	Unit	Target	Remarks
1.	New road construction	Km	467	Cumulative Fifth Plan target
2.	Black Topping	Km	520	-do-
3.	Renovation of existing roads	Km	288	-do-
4.	Suspension bridges	Nos.	186	-do-
5.	Improvement of existing Mule Tracks	Km	1000	-do-

TRANSPORT

6.111. The importance of developing an effective transportation system in a land locked country like Bhutan cannot be overstressed. The Government will continue to promote the expansion of this sector in the Fifth Plan, with the following objectives:

- i. to augment the rolling stock capacity for both passenger and goods transportation in order to meet the increasing demand arising out of future development activities;
- ii. to ensure cost effectiveness of the transportation system;
- iii. to develop alternative transportation systems.

6.112. As the Bhutan Government Transport Service (BGTS), the passenger transport carrier, and the Government Auto Workshops are fully commercialised and expected to run as independent business units, there is no financial allocation for them under the Fifth Plan budget. The investment plans of these units are, therefore, entirely dependent on their own internal resource generation. As goods transportation is mainly in the hands of the private sector here, again no clear idea of investment expected during the Plan period can be made. However, a project proposal has been developed for an augmentation of the passenger transport Fleet.

6.113. The Druk Air Corporation, which has been recently established as a Government under 1, has a budget of Nu. 100 million which is part of the investment plan in the Fifth Plan.

ROAD TRANSPORT

6.114. The Bhutan Government Transport Service (BGTS) was established in 1962 and commercialised in 1968. Since then, it has been running on a profitable basis and has increased its assets from Nu. 7.5 million in 1971 to Nu. 14.05 million in 1981. The expansion proposed in the Fifth Plan takes into account the necessity of maintaining a balance between economical and uneconomical routes so as to ensure overall financial viability. During the Plan, a number of routes will be opened up to connect important district towns within the country. In addition, the links between the bordering areas and important Indian centres will also be increased. A new service connecting Phuntsholing and Calcutta, is also to be established.

6.115. Truck transport has expanded substantially in recent years under the umbrella of the Bhutan Transport Corporation, which was a syndicate of private owners. To ensure that no monopolistic trends emerged in this important sector, this organisation was disbanded in 1982 to allow the formation of several small companies. For the Fifth Plan, it is envisaged that trucking will continue to expand in the private sector, particularly as the small companies get more organised and experienced. There will also be an expansion of trucks owned by the Government departments. However, this will be linked to their specific needs and to those which private companies are unable to meet.

WORKSHOPS

6.116. It is intended to streamline the working of the Government's Auto Workshops and Stores at Thimphu, Phuntsholing, Gaylephug and Samdrup Jongkhar, during the Fifth Plan. A thorough evaluation of the assets, stocks and liabilities of each unit has already been completed. A management study is also under way. Depending on the findings of this study, it is proposed that the workshops and Stores will either be made into autonomous commercial undertakings of the Royal Government, or be leased out on management contracts to private firms. What ever the final decision, it is expected that the services of the workshops and stores are expected to improve and cater more properly to the increasing number of automobiles. The Government will continue to extend assistance to these units by providing training and other facilities.

AIR TRANSPORT

6.117. The major development in this area is the establishment of the Druk Air Corporation as an undertaking of the Royal Government. The starting of air services will not only be an additional communication facility, but will also bring about substantial savings on time and the cost of travel. Druk Air has initially started a thrice weekly service between Paro (near Thimphu) where an air field already exists, from February, 1983. Due to the altitude and physical terrain of Paro, a 19 sitter Dornier, short take off and landing aircraft will be used. So far, only one aircraft has been purchased. It is proposed that the aircraft will be stationed in Calcutta until maintenance and other facilities can be developed at Paro. The recruitment and training of nationals will be an important part of the project. The establishment of ground infrastructure, such as, communication facilities, radio beacons, hangers, terminal buildings etc. will also have to be undertaken. At a later stage, it is proposed to purchase a second aircraft to ensure reliability of druck Air Corporation has been established as a commercial undertaking, therefore, in order to ensure a cost effective operation and increased aircraft utilization, arrangements to lease the aircraft to other users in the Indian region during non-service hours, are being made. The possibility of introducing internal flights within the country will also be studied.

COMMUNICATIONS

6.118. Although the development of communication facilities has been rapid over the past two decades, and at the beginning of the Fifth Plan all the urban areas and many of the larger rural population concentrations, were served by the existing network, the strong need to further increase the coverage of this system, particularly in the more remote parts of the country has existed in order to bring them into the mainstream of national economic life. The expansion of economic activity visualised in the Fifth Plan, also calls for increase in the range of services available to the people, particularly in the major commercial and urban centres of the country.

6.119. The objectives in communications development in the Fifth Plan are therefore:

- i. Expansion of the communication facilities, especially postal services in remote rural areas.
- ii. Improvement of existing operational services and introduction of new Services.
- iii. Upgradation of the handling capacity of postal, telegraph and telephone services to cater to the increasing traffic.

6.120. The total outlay in the Fifth Plan period for wireless, telephones and the postal system is Nu. 85.0 million. The financial breakdown of this expenditure is given below:

Table 61 OUTLAY: COMMUNICATIONS SECTOR (1981-1987) Nu. in million

Programme	Total	Fifth Plan Outlay	
		Development	Maintenance
1. Postal Services and their expansion	14.121	0.801	13.320
2. Construction of New G.P.O. Building at Thimphu	3.600	3.600	--
3. Philatelic Services	2.416	1.000	1.416
4. Telegraph Services	2.115	0.120	1.995
5. New W/T stations and equipment standardisation	3.352	3.352	--
6. Taking over of Telephone Exchanges	11.613	11.613	--
7. Expansion of Existing Telephone Exchanges	6.757	6.757	--
8. Installation of Telex Exchanges	6.114	6.114	--
9. Training	1.484	1.484	
10. Establishment	33.428	3.332	30.096
TOTAL	85.000	38.173	46.827

POSTAL SERVICES

6.121. Postal facilities are to be improved and expanded throughout the country. The major programmes which will be undertaken in this area are listed below:

- i. In order to provide adequate space for the progressively increasing volume of transactions in the main post office at Thimphu and also to meet the office space requirements for supervising the large postal network a General Post Office building will be constructed at Thimphu.
- ii. Five branch post offices are proposed to be upgraded during the Fifth Plan into full time post offices in order to cater to the increased volume of postal traffic in these areas. In addition, ten branch post offices, which will function on a part time basis, will also be opened.
- iii. It is proposed to introduce mobile post offices at 24 places in various dzongkhags, where at present the opening of Branch Post Offices are not justified but postal facilities are necessary. The mobile village Post Masters will be authorized to sell postage and revenue stamps and book registered letters/parcels, etc.
- iv. Mail in the rural areas is usually carried through postal runners. Since runner services are

necessary for places which have no transport facilities, it is proposed to open new runner routes at six places.

v. To keep pace with the progressively increasing volume of mail, the Posts and Telegraphs Department proposes to acquire vans equipped with special facilities, spacious enough to accommodate not only ordinary mail articles but also big or fragile parcels.

vi. At present Phuntsholing and Thimphu are the only two towns with post box facilities. It is, therefore, proposed to provide similar facilities in the towns of Gayleghug and Samdrup Jongkhar during the Fifth Plan period.

vii. A substantial amount of equipment has to be acquired for handling the large volume of postal traffic. This includes weighing and franking machines, letter boxes, mail bags, etc.

PHILATELIC DEVELOPMENT

6.122. Apart from catering to the expected increase in postal transactions, the printing of stamps as in the past, will also be of philatelic value. A comprehensive stamp programme has been chalked out by the Department for the Fifth Plan. The policy governing the production and sale of stamps, stresses the need to bring out more stamps on local themes and expand their international market to publicise Bhutan's rich culture, tradition, and flora and fauna. The focus is also to increase stamp earnings. Therefore, it has been decided to bring out two local overlapping issues annually, and a minimum of three annual issues on popular themes during the Fifth Plan. The foreign agent will bear all costs for designing, printing and selling of stamps on internationally popular themes, and remit an assured revenue to the Government, while for local and overlapping issues the cost of production will be debited to the sales proceeds of stamp.

TELEGRAPH AND WIRELESS SERVICES

6.123. In order to strengthen internal communications between the various parts of the country, and also to improve Bhutan's communications with the outside world, a number of programmes are being taken up in the Fifth Plan:

i. The possibility of setting up of new Wireless Stations is limited in view of the lack of power in most areas in Bhutan. However, during the Fifth Plan, it is proposed to set up two new stations at Lunana and Nanglam. A new programme of solar powered wireless transmission facilities in 18 remote areas has also been developed for implementation during the Fifth Plan, if additional external funding is available.

ii. In order to replace outdated equipment and also to improve the handling capacity of existing stations, powerful and compact transmitter-receivers are proposed to be imported in the Fifth Plan period.

iii. To maintain the efficiency in the operation of teleprinter services, a number of old machines will be replaced and spare parts obtained for fulfilling the normal servicing needs.

iv. An Indo-Bhutan micro-wave link project has been taken up with the technical and financial collaboration of the Government of India, outside the Fifth Plan framework. This 300 channel link, is expected to be completed by the end of 1983, will go a long way in improving international communications.

TELEPHONES

6.124. The telephone system is to be substantially expanded during the Fifth Plan period and all efforts made to indigenous the manning and maintenance of these operations. The main programmes in this area are:

- i. Various telephone exchanges in the country will be expanded to cater to additional subscribers and the increased traffic volume. The major programmes consist of expansions in the capacity of the exchanges at Phuntsholing, Samchi, Samdrup Jongkhar, Sarbhang, Wangdi and Tashigang.
- ii. The telephone exchange at Thimphu had already been taken over by national staff before the beginning of the Fifth Plan. During the Plan period, the remaining exchanges and trunk routes at Phuntsholing, Tashigang and Samdrup Jongkhar will be taken over. This will facilitate an expansion of the range of services offered to subscribers in these exchanges.
- iii. Twenty line telex exchanges are to be installed at Thimphu and Phuntsholing during the Fifth Plan. For the first time this will provide a telex link between the two major urban centres in the country and the outside world.
- iv. It is proposed to set up a trunk route between Phuntsholing and Samchi in order to introduce trunk call facilities between these two growing administrative and industrial centres.

EDUCATION

6.125. In 1980s, the broad objectives for the Education Sector remain unchanged from those followed in the first two decades. These are:

- i. to raise the literacy level of the population as a whole largely through the expansion of primary education, so as to enable the people to take full advantage of the development process;
- ii. to provide educated and trained manpower to meet the growing needs of development programmes;
- iii. to bring about a modernization of society by introducing them to science and technology and thereby enabling them to join the mainstream of contemporary civilization; and,
- iv. to preserve and promote the country's rich cultural and spiritual heritage, preventing the alienation of the educated from this heritage.

6.126. The Fifth Plan for the education sector, however, differs substantially from the earlier plans in one major respect. In the first two decades, the need was to establish and expand a modern educational system and a rapid expansion of the system was inevitable. At the threshold of the Fifth Plan, we find that a country-wide education infrastructure has been built up. Therefore a major shift in policy towards a consolidation and improvement in the quality of the education system, has emerged as an obvious direction. Such qualitative improvements are needed, in particular, in such areas as: the number of national teaching staff; the nature and extent of the physical facilities like buildings and equipment; the provision of text-books and relevant curriculum, etc. The occasion also presents an opportunity to introduce a strong national-cultural orientation to the educational content which is at the same time consistent with the needs of the modern socio-economic system. While the focus of the educational programmes is on consolidation and improvement, nevertheless, a certain degree of expansion is envisaged at the higher education and technical levels. This is to ensure that the manpower requirements of the Fifth Plan are met to the maximum extent possible.

6.127. Some of the Major Fifth Plan targets are given below:

Table 62

1980-81 level	Additional during Plan 1986-87 Target
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A. Institutions:

i. Primary Schools	119	21	140
ii. Central (High) Schools	6	2	8
iii. Degree College	--	1	1
B. Number of Teachers			
i. Primary	726	320	1,046
ii. Secondary	481	88	569
iii. Degree Level	--	16	16
C. Enrolment:			
i. Upto Class V	33,610	24,690	58,300
ii. Class XI-XII	204	132	336
iii. Degree Level	--	150	150
iv. Teachers' Training Institute	67	33	100

6.128. One of the major developments in the Fifth Plan period is a review of education policy which is being undertaken with a view to taking full account of the new approaches to development relating to economic self-reliance, the participation of people in all fields, and mobilization of internal resources. The revised National Education Policy will reflect these new planning and policy issues and will guide the development of the education sector in the future.

6.129. The total outlay for the education sector in the Fifth Plan is Nu. 340 million. Given the inevitable high recurring costs in this sector, Nu. 209 million is budgeted to meet this, and Nu. 131 million has been programme for the investment expenditure.

Table 63 OUTLAY: EDUCATION SECTOR (1981-87) Nu. in million

Programme	Fifth Plan Outlay		
	Total	Development	Maintenance
1. Primary Education	94.19	39.72	54.47
2. Secondary Education	101.17	28.40	72.77
3. Higher Education	27.14	15.68	11.46
4. Teacher Education	28.24	20.95	7.29
5. Technical Commercial Education	30.25	13.25	17.00
6. School of Fine Arts Sculpture	1.58	--	1.58
7. Buddhist Monastic studies Rigney School	4.60	1.29	3.31
8. Directorate of Education	50.65	9.34	41.31
9. National Education Policy	2.18	2.18	--
TOTAL	340.00	130.81	209.19

6.130. A comparison of the proportion of development to total expenditure in each of the sub categories above, brings out the priorities within the education plan. The emphasis is on one hand to expand the primary education facilities in order to increase literacy levels, and on the other to develop higher and technical education facilities to meet the increasing manpower requirements.

PRIMARY EDUCATION PROGRAMME

6.131. While requests for the opening of almost 90-100 new primary schools have been received from different parts of the country, the present programmes of building new schools is designed to offer educational opportunities to student populations in remote areas which have so far not been

brought under the primary education system, and also to increase the intake at the primary level where existing facilities are overcrowded and cannot be further expanded. It is expected that with an estimated average growth rate of 10% per annum in enrolment, the total student population in primary schools will increase from 33,160 in 1980-81 to 58,300 by the end of the Fifth Plan. A substantial proportion of the new students will be absorbed into existing schools, in particular where the facilities are being presently under utilised. However, to meet additional requirements, it is proposed to open 21 new primary schools and add 121 new classrooms to existing schools. While school buildings will be constructed with voluntary labour organised by the Dzongkhag Administration, the cost of supervision, construction materials, equipment and teachers will be provided for by the Government. With the new schools, the total number of primary schools will increase from 119 at the end of the Fourth Plan to 140 by the end of the Fifth Plan. A total of 320 additional teachers will be required for the expansion programme. Most of this requirement will be set through an expansion of the teachers' training facilities.

SECONDARY EDUCATION

6.132. The main emphasis at the secondary state of education pertaining to classes VI-X, is to have only the minimum necessary expansion, with enrolment in the Junior High and Central Schools being related to manpower requirements. While no new Junior High Schools will be opened, it is proposed to upgrade one Primary School in southern Bhutan to the level of a Junior High School. Similarly no new central (high) schools are to be set up, but two Junior high schools are to be upgraded to this level. The expansion in enrolment envisaged at the secondary level between 1980-81 and 1986-87 is from 1856 to 4370 for Junior high schools and 368 to 813 for the Central schools. The increased intake will be absorbed primarily through an expansion of class rooms and dormitory facilities. A total of 88 additional secondary school teachers will be required during the Plan period. These will be trained in the existing institutions.

HIGHER EDUCATION

6.133. At present there is only one junior college in the country, situated at Kanglung in eastern Bhutan, which provides education beyond the secondary stage, for a period of 2 years. For degree level education, students are sent to institutions outside Bhutan, mainly India. With the increasing demand for qualified manpower, the requirement for graduate has been steadily increasing and as a result, the economic of setting up an institution within the country to provide degree level courses has become favourable. The programme for higher education involves the expansion of the existing junior college from its intake of 204 in 1980-81 to 336 by 1986-87. In addition, the Sherubtse Degree College is to be set up, with an annual intake of 150 students 1986-87 That college will initially have three year degree courses in the humanities and sciences, and will be located on the same campus as the existing college. An increase of 16 teachers will be required for this college.

TEACHERS' TRAINING

6.134. The educational system upto now has been dependent on a high proportion of non- national teachers. During the Fifth Plan, a concerted effort is to be made to train more nationals as teachers, not only to increase their proportion but also to provide for the increased requirements of the educational system. By 1986/87, at the primary level 320 extra teachers are required, and at the

secondary level 88 more. To reach these levels, the two existing teachers' training institutions will be expanded and strengthened. The Teachers' Training Centre at Paro is to be provided with additional facilities to increase its intake from the present level of 30 to 50 students per annum. The Teachers' Training Institute at Samchi is to be expanded and upgraded to the status of a National Institute of Education (N.I.E.). Enrolment will increase from the 1980/81 level of 67 to 100 per annum by 1986/87. The N.I.E. will also award Bachelor of Education (B. Ed.) degrees and run in-service courses for primary and secondary teachers.

6.135. In order to cope with the increasing requirements for technicians and craftsmen, both in the public and private sectors, the facilities at the two existing institutions--the Royal Bhutan Polytechnic, Deothang and the Technical School, Kharbandi, are to be improved and the system of training revised. A number of new basic courses are also to be introduced. The National inplant training system started in 1978 is also to be recast and made more effective.

6.136. A Commercial Institute has been functioning in Thimphu since 1977 and has been training mainly typists and stenographers. To meet the increasing manpower requirements in the areas of office management, sales management, accountancy and book-keeping, secretaryships etc. it is proposed to upgrade the existing institution to the status of the Royal Institute of Management Studies. This is a new proposal which has emerged from the revised National Education Policy 1982, and, therefore, no financial provision for it exists in the Plan.

HEALTH

6.137. With the establishment of a widespread and modern health care network over the past four plans, and the implementation of a set of comprehensive health care programmes, Bhutan is now poised to embark upon a further development and intensification of the health care system, so as to achieve the aim of universal basic health coverage by the year 2000. In accordance with this objective, a master plan for achieving "Basic Health for All" by 2000, has been prepared by the Government. In keeping with this, during the Fifth Plan, the main emphasis in the health sector is to consolidate and improve the present facilities and widen the coverage of the health care system. The programmes for the development of health care centre around three broad strategies are discussed below.

6.138. The objectives for the development of health services in the Fifth Plan are broadly:

- i. Attaining higher health standard through health education, environmental sanitation, personal hygiene and better nutrition.
- ii. Prevention and control of common endemic and communicable diseases.
- iii. Extension of the basic facilities for the treatment and care of disease.

6.139. The total outlay on the programmes in the health sector (excluding water supply and sanitation) is Nu. 185.3 million. The major expenditure is to be on the improvement and expansion of hospitals.

Table 64 OUTLAY: HEALTH SECTOR (1981-87) Nu. in million

Programme	Total	Fifth Plan Outlay	
		Development	Maintenance

1. Hospitals	99.575	36.898	62.677
2. Dispensaries and Basic Health Units	29.625	7.580	22.045
3. Health School	6.446	3.616	2.830
4. Immunization Programme	2.105	0.375	1.730
5. Paedriatic Services	3.625	3.625	--
6. Primary Health Care	5.175	5.175	--
7. Family Welfare Programme	16.302	14.537	1.765
8. Malaria Eradication Programme	7.913	--	7.913
9. Leprosy Control Programme	1.648	0.973	0.675
10.T. B. Control Programme	0.735	--	0.735
11.General Establishment	12.166	1.806	10.360
TOTAL	185.315	74.585	110.730

HEALTH SERVICES INFRASTRUCTURE

6.140. The health services system consists of a network of vertically integrated institutions starting from the community health workers and progressing upwards through the dispensaries/ basic health units to the district and major referral hospitals. This is supported by some facilities for training a number of depots for the supply of drugs and medicines.

i. Village Volunteer Health Workers (VHW): This programme was started on an experimental basis towards the end of the Fourth Plan period in Wangdiphodrang and Jakar Dzongkhags. It is now to be expanded to cover the entire country. By the end of the Fifth Plan, it is intended that there will be 1000 health workers. Each worker will look after the preventive and simple curative needs of one or more villages and will stock simple, harmless drugs. A centre has been established at Gaylegphug to impart basic training in nutrition, sanitation, personal hygiene and the diagnosis and cure of simple illnesses.

ii. Basic Health Units: There are 43 operational basic health units, with 10 more to be added in each year of the Fifth Plan. The staff of the each BHU comprises of one health assistant, one basic health worker and one auxiliary nurse/midwife. The BHUs which at present cover a population of 4000-6000, are expected to cover a population range of 2000-3000 in the longer longterm, including the existing dispensaries which are to be upgraded to full-fledged BHUs during the Plan period, it is intended to achieve a target of establishing 50 BHUs by 1986/87. Apart from administering curative medicine. BHUs will also be the focal point for all health care activities, maternity and child welfare, immunization and the control of endemic diseases.

iii. Dzongkhag Hospitals: There are at present 16 dzongkhag hospitals. It is intended to establish 2 more during the plan in addition to 10 more sub-divisional hospitals. Each of the existing hospitals is to be upgraded to have a bed strength of 20 and to be provided with radiological and laboratory equipment and additional staff. These hospitals are designed to cater to cases requiring non-specialised attention.

iv. Referral hospitals: Three referral hospitals at Thimphu, Tashigang and Gaylegphug have been set up with specialised facilities to handle complicated cases. The bed strengths of these hospitals are to be increased during the plan, along with the provision of additional equipment and trained personnel.

PREVENTIVE HEALTH CARE

6.141. Apart from provision of protected water supply and sanitation, which are discussed in a separate section, the main activities in this area are maternity and child welfare programme

(including family welfare), and an extended programme of immunisation

i-Maternity and Child Welfare (MCH): This programme consists of MCH clinics at Thimphu, Tashigang, Gaylegphug, Phuntsholing, Samchi, Samdrup Jongkhar and Damphu to serve as a referral network for this purpose. The family welfare measures cover promotion and training activities, including the recently introduced scheme of cash incentives for family planning. In addition, the treatment of nutritional deficiencies such as lack of Vitamin A and anaemia among new and expectant mothers and children, will form a core area of work.

ii. Extended Programme of Immunisation (EPI): During the Fifth Plan, the aim will be to substantially extend the coverage of EPI. This will be done by the training of more para-medical personnel and the provision of proper storage facilities for vaccines. The latter will include the setting up of an effective 'cold chain' for the transportation of such drugs. At present the immunisation programme cover BCG, DPT, polio and measles vaccinations. The range of this programme is to be further expanded to cover tetanus and other infections. Other elements of the programme include the organisation of an effective delivery system through the health institutions and through specially organised camps. It is also intended to establish an epidemiological surveillance system, the aim of which is to bring about a self-perpetuating immunisation Programme.

CONTROL OF ENDEMIC DISEASES

6.142. A number of communicable and non-communicable endemic diseases have been identified and programmes designed for their control. These programmes have so far been independently administered. During the Fifth Plan, the control of these programmes are to be integrated with the health care delivery system. Improvements in the health information system and that for the monitoring of programmes, will also be made. The control programmes that are currently being implemented are for:

- i. Diaphorreal diseases, through the provision of re-hydration salts, the training of personnel and the implementation of better water supply and sanitation;
- ii. Malaria, through 2 annual rounds of DDT spraying, chemotherapy and surveillance;
- iii. Tuberculosis, through domiciliary treatment supported by hospitalisation where required;
- iv. Leprosy, through treatment in 4 specialised leprosy hospitals;
- v. Goitre, through the supply of iodised salts. A salt iodisation unit is also to be set up in the Fifth Plan.

SUPPORTIVE MEASURES

6.143. To support the above programmes, during the Fifth Plan enhanced facilities for training medical personnel, a strengthened supervisory system, better storage, procurement and transportation facilities for drugs and medicines, and a streamlined health data collection and monitoring system, are to be set up.

Table 65 FIFTH PLAN TARGETS: HEALTH SECTOR

Sl.No.	Programme	Unit	Target	Remarks
1.	Village Volunteer Health Works	Nos.	1000	Cumulative Fifth Plan
2.	Basic Health Units	Nos.	60	-do-
3.	Bed strength, Dzongkhag Hospitals	Nos.	360	Cumulative
4.	Bed strength, Referral Hospitals	Nos.	300	-do-

URBAN DEVELOPMENT, WATER SUPPLY AND SANITATION

6.144. The population of Bhutan is unevenly distributed over more than 4500 settlements. The distribution closely follows the character of the terrain, climatic conditions and land productivity. Of the 4500 settlements, 2 settlements have populations of over 3,000 and 10 have populations above 5000. These 20 larger settlements are classified as towns. There has been a rapid increase in the migration to the main urban centres due to increased development, trade and a growing administrative system. These urban centres have begun to show the strains of higher population connection on limited of land and under developed public utilities

6.145. While urban areas, because of the concentration of population, are particularly sensitive to health hazards, the improvement of the health environment in rural areas is equally important in view of the fact that the majority of people live there, and rural populations, especially children, are particularly vulnerable to insanitary conditions and waterborne diseases. Furthermore, basic health support is not readily available in such areas and there is a general lack of the basic understanding relating to sanitation and hygiene.

6.146. The objectives in the area of urban development, water supply and sanitation in the 1980s are:

- i. Plan and control the growth of urban areas.
- ii. Provide utilities such as roads, electricity, water supply, sanitation and drainage in identified urban centres.
- iii. Provide protected drinking water and basic sanitation facilities in the rural areas to achieve desirable environmental standards and prevent diseases.

6.147. The total outlay envisaged in this sector during the Fifth Plan is Nu.145 million. Of this, Nu. 78 million has been budgeted for in the Plan, as this covers the cost of the projects originally envisaged. However, subsequently the Royal Government committed itself to achieving the targets laid down in the "International Drinking Water Supply and Sanitation Decade". Under this programme, three additional projects have been added, and one of the programmes already included in the Plan, has been expanded. It should be noted that all the programmes in this sector are of the highest priority to the Government.

Table 66 OUTLAY: URBAN DEVELOPMENT, SANITATION AND WATER SUPPLY SECTOR (1981-87)

Programme	Total	Fifth Plan Outlay	
		Development	Maintenance
A. Regular Programmes			
1. Urban Water Supply Schemes	5.832	5.832	--
2. Rural Water Supply Schemes	51.000	51.000	--
3. Urban Development	14.168	14.168	--
4. Low Cost Housing	2.996	2.996	--
5. Establishment	3.665	1.165	2.500
Total--Regular Programmes	77.661	75.161	2.500
B. Additional Project Programmes under International Water and Sanitation Decade			
1. Augmentation of Water Supply	11.550	11.550	--
2. Solid Waste Disposal	2.300	2.300	--

3. Sewerage Schemes	41.000	41.000	--
4. Village School Sanitation	12.500	12.500	--
Total Additional Projects	67.350	67.350	--

URBAN DEVELOPMENT

6.148. The priorities which have emerged as a result of the rapidly increasing concentration in the urban areas, and the consequent need to safeguard the environment are the provision of adequate sanitation and the construction of the basic public utilities. The main programmes in urban development during the Fifth Plan are, therefore, to provide protected drinking water and sewerage and sanitation facilities as envisaged in the "International Drinking Water Supply and Sanitation Decade". These programmes will be supplemented by road construction, electrification and the construction of community facilities in urban areas. The major elements of the latter are as follows:

i. Internal roads network: In many towns, the development of internal roads has not been able to keep pace with the rapid expansion in the urban areas. In addition, the existing internal roads networks also need to be repaired regularly and maintained properly. For this purpose Nu. 10.9 million has been allocated during the Fifth Plan period. Of this, Nu. 4.8 million is for new construction.

ii. Street lighting: An outlay of Nu. 0.74 million has been allocated for this programme during the Plan.

iii. Land Development: In order to reduce the cost of construction, maximise the proper utilisation of urban land resources, and provide a healthy living environment with basic amenities such as roads, electricity and water, the pool housing system has been introduced for Government servants. The previous practice of the construction of Government housing by individual departments/ministries which resulted in disparities and a wasteful use of land resources, has been stopped. For this purpose, it is proposed to fully develop about 59 hectares of land in 7 major urban centres of the country at a cost of Nu. 2.5 million during the period of Fifth Plan.

AUGMENTATION OF WATER SUPPLY IN URBAN AREAS

6.149. Sixteen urban centres out of 20, have so far been provided with water supply. In the remaining 4 towns, only a few institutions like schools, district offices and hospitals are provided with water supply. Of the 16 towns mentioned above, basic treatment facilities are provided only in ten. On the whole, about 50% of the urban population has access to safe drinking water at present. The proposed programme, therefore, envisages the provision of this amenity to the urban population. This will in particular help to reduce the incidence of water borne diseases, which are a prime health hazard. The programme, which has been conceived of for a ten year period, is part of the "International Drinking Water Supply and Sanitation Decade". It is to be carried out in two phases: the first phase for the period 1982-87 and second phase from 1987-1992.

6.150. During the first phase (1982-87), complete systems for the provision of drinking water supply will be implemented in 6 rapidly growing urban centres--Paro, Thimphu, Tashigang, Samdrup Jongkhar, Gaylegphug and Phuntsholing. It is proposed to cover the rest of the urban areas in the second phase. All the water supply schemes would involve gravity tapping of mountain streams, water treatment and an efficient pipe distribution network. The programme is to be executed by the respective Municipal Corporations and local town committees. The overall supervision, planning, funding and monitoring will be done by the Central Town Planning Organisation with technical assistance from the Public Works Department.

SOLID WASTE DISPOSAL IN URBAN CENTRES

6.151. This programme is also part of the "International Drinking Water Supply and Sanitation Decade" and envisages the provision of hygienic waste disposal systems in all urban centres by 1992. Only 7 of the 20 urban centres have some form of garbage collection at present and even here the collection is often dumped in low lying open areas, thereby causing a constant health hazard. In some cases, waste disposal is also done by means of septic tanks. However, the maintenance of these is very unsatisfactory. The project, therefore, envisages the provision of facilities for the collection and disposal of garbage and waste from septic tanks in suitable places for conversion into compost. The first phase (1982-87) of the project will cover the major towns of Thimphu, Gaylephug, Phuntsholing, Samdrup Jongkhar, Paro and Tashigang. The second phase (1987-1992) will cover the remaining urban areas.

SEWERAGE SYSTEM FOR PHUNTSHOLING AND THIMPHU

6.152. Thimphu and Phuntsholing are the two main towns in Bhutan. At present, there is no proper sewerage system in these towns, and a further expansion of waste disposal through individual septic tanks is only likely to create serious health hazards. Under the present system, sullage is collected in open drains and flows directly into the rivers. In view of the increasing population concentrations of these two towns, it is proposed to set up comprehensive sewerage disposal systems in the next ten years. This project is also to be implemented as part of the "International Drinking Water Supply and Sanitation Decade" and will be in two phases. The first phase will consist of survey and preparation of plans, site development, and the supply of the treatment plants, machinery and equipment. The second phase which will be completed by 1992, and consist of the implementation of the entire system, installation of equipment, and full operation.

RURAL WATER SUPPLY

6.153. One of the main elements of the programme to improve environmental health in villages, is the provision of protected water supply. The programme, initiated in 1974 in Bhutan with UNICEF assistance, had by the end of the Fourth Plan resulted in 46 schemes being completed. As part of the "International Drinking Water Supply and Sanitation Decade", an ambitious plan has been devised for the Fifth Plan to cover 1164 villages with about 60% of the rural population by 1987. By 1992, it is expected to cover the entire rural population under this scheme. The programme consists of the construction of simple gravity-flow system which will tap perennial mountain streams and to guide the water to public stand-posts through polythene pipes. The survey, investigation and design is to be carried out by technical personnel and the actual construction through voluntary labour donated by the beneficiaries themselves.

VILLAGE AND SCHOOL SANITATION

6.154. The second main programme for the improvement of rural environmental health, is the provision of protected latrines. At present waste disposal (except in a few urban areas) is done through long drop latrines over streams or shallow pits, both of which are unhygienic. The programme envisages the construction of 1800 latrines in schools and basic health centres and 1150

public latrines in villages during the Fifth Plan period. This is also part of the larger programme for the improvement of health standards under "International Drinking Water Supply Sanitation Decade".

INFORMATION AND BROADCASTING

6.155. In the past, the dissemination of information in Bhutan was mainly interpersonal in character. Although the departments concerned with rural development have set up extension systems whose coverage has been gradually expanding, the Royal Government recognises the need to strengthen the basic machinery for the effective dissemination of information. Therefore, the main thrust in the area of information services in the Fifth Plan will be to strengthen the support capability for the production of the necessary materials and to develop a matching delivery system and also to increase both the frequency and coverage of news periodicals and the broadcasting system. 6.156. The objectives in the area of information development in the eighties are:

- i. To disseminate information relating to the possibilities for improving standards of living, and to motivate the population at large to adopt such improvements.
- ii. To promote people's participation in the development process in order to ensure the success of the Government's policy of decentralisation and dzongkhag self-reliance.
- iii. To preserve traditional values, while at the same time removing superstition and prejudice, and to inculcate modern development oriented values which do not conflict with the country's cultural and spiritual heritage.

Table 67 OUTLAY: INFORMATION SECTOR

Programme	Total	Fifth Plan Outlay	
		Development	Maintenance
1.Information Publicity	15.000	9.500	5.500
2.Broadcasting	6.610	3.412	3.198
TOTAL	21.610	12.912	8.698

INFORMATION

6.157. The Department of Information during the Fifth Plan period will continue to publish the official weekly bulletin Kuensel, in three languages, and the quarterly magazine Druk Losel, also in three languages. Their major responsibility however, will be the management of a Development Support Communication (DSC) system within the country to disseminate information and other messages relating to developmental activities. A compact but well-equipped DSC Centre is to be established in Thimphu with sub-centres in each of the dzongkhags. The programme calls for the use of the traditional media, as well as modern methods such as graphic works, photography, audio-visuals, films, etc. It is also proposed in due course, to build training centres and schools into the national communication infrastructure. A major part of the outlay of which is to be spent on Development Support Communication activities.

GOVERNMENT PRESSES

6.158. The printing units of the Department of Information have already been commercialised under the Government's new policy and they will have to meet their expenditure from the income

generated in their own activities. The presses will continue to undertake printing work entrusted to them by the other departments and the public. Their major activities will consist of printing the Department's bulletin and magazine, printing school text books and all Government stationery.

BROADCASTING

6.159. The emphasis in the area of Broadcasting will be to increase the existing 9 hours a week transmission, to 63 hours a week by the end of the Fifth Plan. At present, the broadcasts are limited to 3 days a week, however, the substantial expansion of broadcasting hours will allow daily transmissions of 9 hours. The existing broadcasting unit shares transmission facilities with the Civil Wireless Organisation. It is now proposed that a separate transmission set of 5 kilowatts be set up for the Broadcasting Division. The increase in broadcasting hours will require substantial increases in programmes and personnel. For this purpose a training programme will have to be undertaken.

TOURISM

6.160. Tourism development is still constrained by the lack of infrastructure and proper facilities, the absence of adequate market studies, and the high travel costs to the country. At present the annual number of tourists visiting Bhutan, is about 2000. This low number is the result of several factors including the Government's policy of slow tourism development, transport and accommodation problems and the generally high cost of operations. It is proposed that by the end of the Fifth Plan the number of tourists will be raised to the level of 5000 per annum.

6.161. The objectives of tourism development in the eighties are:

- i. to increase the contribution of tourism to the national economy;
- ii. to generate revenues, especially foreign exchange;
- iii. to bring about increasing awareness of Bhutan's rich cultural and spiritual heritage to the outside world.

6.162. The total outlay for the tourism sector during the Fifth Plan is Nu. 35.33 million. Of this, Nu. 9.75 million is the expenditure on regular programmes and the balance of Nu. 25.58 million forms part of the investment plan. Budgetary resources to the extent of Nu. 6.2 million will be provided for the investment plan and the rest will have to be met from external assistance or other institution sources.

Table 68 OUTLAY: TOURISM SECTOR (1981-87)

Programme	Total	Fifth Plan Outlay	
		Development	Maintenance
A. Regular Programmes			
1. Research Development	1.970	1.970	--
2. Training	1.500	1.500	
3. Establishment	6.280	2.030	4.250
Total: Regular Programmes	9.750	5.500	4.250
B. Investment			
1. Hotels' Development	25.579	25.579	

Total: Investment	25.579	25.579	
Grand Total	35.329	31.079	4.250

EXPANSION OF HOTELS

6.163. The development of the tourism infrastructure in this area will mainly comprise of increasing hotel accommodation in the existing hotels, improving hotel services to reflect Bhutanese traditions, the imposition of standards of hygiene and service in private cafeterias and restaurants, encouraging entrepreneurs to set up small hotels and restaurants in the private sector. In this regard, the completion of the Olathang Hotel in Paro and Motithang Hotel in Thimphu, are the major expansion programmes.

RESORT DEVELOPMENT

6.164. So far tourism has been limited to sight-seeing trips in the western region. The opening up of other parts of the country along with development of specific resorts in these areas, is therefore, to receive a high priority in the Fifth Plan. The development of such resorts and camps will be linked with activities such as trekking. The touring of cultural centres, such as Dzongs and Monasteries will receive the highest priority, followed by the development of suitable areas for fishing. In the future, hunting on a limited scale will also be developed. The primary objective of the above diversifications is to increase the duration of stay of tourists without necessarily having to increase their total number.

6.165. The strengthening of the Tourism Commercial Organisation to cater to a larger tourist flow is an important element of tourism development. While this organisation will run on commercial lines, the Department of Tourism will assist it in the area of promotion and the preparation of tourist literature. Emphasis will be given to personal visits by professional promoters, travel agents and tourism journalists. The training of personnel to man the tourism sector will be conducted both within the country and abroad. While the establishment of air services will be an important input in this sector, the development of a transportation fleet comprising of luxury mini-buses and cars, both in the private sector and the department, will also be taken up.

PRESERVATION OF MONUMENTS

6.166. The preservation and maintenance of cultural and religious monuments, especially those forming part of the tourist itinerary, is to be given importance. The maintenance of buildings, and the preservation of antiques, art and documents will be carried out by the National Museum on scientific lines. However, Monasteries and Dzongs involved in spiritual teaching and meditation by the Monk-body will be kept out of tourist itineraries.

Chapter VII DEVELOPMENT PERSPECTIVE FOR THE PERIOD 1980-2000

7.01. The major re-orientation of development strategies made in the Fifth Plan which arose from the concerns for meeting the rising expectations of the people and achieving self-reliance, ushers in a new era in Bhutan's history. These involve a considerably new experience with the development process in regard to handling large industrial investments and the decentralization of development activities. Experience gained in these two areas would be crucial in the next two decades.

7.02. No perspective plan for the post Fifth Plan period has been prepared so far. There are, therefore, no financial projections, sectoral targets or growth rates for the Sixth Plan. Given the limited data base of the country such an exercise in long term forecasting would be fraught with difficulties and also would be extremely subjective. The approach, priorities and strategies of the Sixth and subsequent Plans will be largely guided by the achievements and experience gained in the Fifth Plan. However, it is recognized that the preparatory work on the Sixth Plan must be taken up well in time. It is proposed to begin with a mid term appraisal of the Fifth Plan and definition of a perspective for the future.

7.03. Future strategy options would be circumscribed by three considerations--the necessity of preserving and extending self-reliance brought about in the Fifth Plan, the expansion of the infrastructure to open up and develop new areas, and increasing the turn out of skilled national manpower in keeping with the country's needs. As mentioned in Chapter IV, the main aim of self-reliance in the Fifth Plan would be to meet recurring expenditure from internal resources by 1986/87. Beyond this period, a progression to an increasing contribution from internal resources for capital formation would be not only desirable but a necessity. Plan investments in real terms can be expected to progressively increase in future, and the quantum of budgetary support will have to be provided at a minimum acceptable level to maintain adequate flexibility in planning. It is inevitable, therefore, that internal resources contribution must steadily increase although it is not possible at this stage to indicate a target date by which investment expenditure can be met entirely from internal resources. Although the tax base can be expected to expand, industrial investments both for increasing the tax base as well as direct revenue generation, would have to be sustained at a fairly high rate.

7.04. The issue of distributional equity, as well as expansion of the natural resource base for industrial development, determines the need to expand the present infrastructure substantially particularly roads, bridges, power, drinking water and extension services. Not only would this bring the people of remote areas into the mainstream of the country's economic activities but would open up areas with rich potential in forests, minerals etc. It would be possible also to generate marketable surpluses of the agriculture sector for industrial processing and a measure of regional balance in development, especially due to greater locational flexibility available for industrial development.

7.05. Although in the Fifth Plan large scale industries would be in the public sector (or joint sector with a minority private holding) for the reason explained earlier in this document, in the long term it is Government's intention to broad base industrial ownership as much as possible. Government is clear that its initial large holdings would be substantially disinvested over a period of time to as broad based a private ownership as possible. Free enterprise would be the norm but care will have to be taken in ensuring that monopolies, especially in the processing of natural resources and agricultural produce, do not arise. Apart from the broad principle of distributional equity, this approach would serve to prevent indiscriminate exploitation of natural resources and of provide remunerative prices for agricultural produce. This approach calls for development of a large entrepreneurial class within the country and the setting up of appropriate institutions to channelize private savings resulting from increasing incomes to remunerative industrial investment.

7.06. Rising expectations would also call for the improvement of the physical quality of life of the people in the remotest corners. A decade plan for water and sanitation has already been prepared. Supplemented by expansion of basic health facilities to meet the target of "Health for all by 2000 AD", the Plan would have to be vigorously pursued. The consolidation and improvement of existing facilities in the social services in the Fifth Plan, although a valid strategy in the short term, does not mean that expansion of these services can be curtailed in a longer time frame. However, the satisfaction of rising expectations must be consistent with the framework of the traditional institutions that characterize Bhutan as a unique national and cultural entity.

7.07. The pace of development of the modern sector would involve an expanding body of manpower equipped with technical skills. The shortage of trained national manpower has been traditionally met by the induction of expatriates. This approach cannot be viable for any length of time as there are certain levels beyond which the size of expatriate manpower would be unacceptable. The development of manpower within the country would continue to call for progressively larger investments. Government is clear that education must also serve another fundamental end, viz, that of preserving the traditional values and rich culture of the country. The development of higher skills are not in conflict with this aim and the educational system would have to be so geared that these objectives are simultaneously met.

7.08. With growing industrialization, and the tapping of natural resources, ecological and environmental considerations will progressively gain importance. Bhutan is part of the delicate Himalayan eco-system the preservation of which is vital. Specific strategies would have to be pursued, for example, the linking of forest industries with forest recycling programmes and the exploitation of renewable energy sources such a hydro electric power, to replace excessive use of non-renewable sources such as firewood.

7.09. Bhutan is an open economy and its size and location determines that the economies of scale of the modern sector would be such that it would be depend on a high level of trade as development progresses. Comparative advantages would, therefore, have to be carefully exploited in the entire development process. This open nature of the economy, however, possesses one major limitation, i.e., Bhutan would progressively become vulnerable to international economic developments, especially in trade. As the modern sector develops, the management of the economy would call for highly sophisticated skills. It is in this connection that Bhutan's technology and human skills would have to be of the highest order for Bhutan to be competitive in the world market. This would require the gradual shift to a production capacity which is highly skill intensive involving high technology rather, than one that is purely capital intensive.