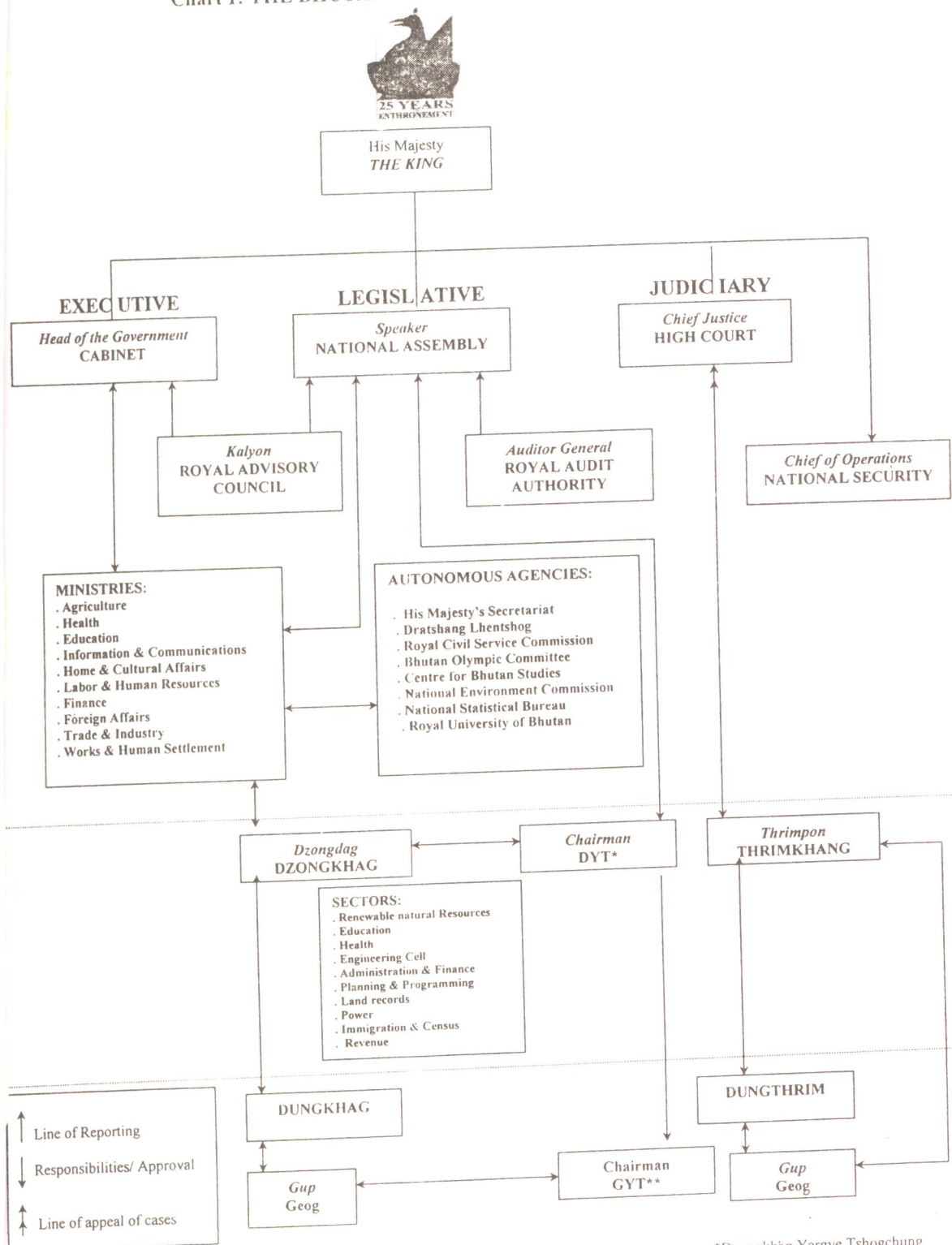


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Chart 1: THE BHUTANESE SYSTEM OF GOVERNANCE



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PREFACE

Statistical Yearbook of Bhutan 2003 is the twenty-first in the series of annual statistical publications issued by the National Statistical Bureau, previously called the (Central Statistical Office), Thimphu.

The purpose of the publication is to provide a summary of the more important statistics of Bhutan. Statistics have been presented under a number of subject headings corresponding to the major areas of statistical interest. For each subject, a short introductory text has been written providing a brief description of the statistics, as how they were obtained and if there were any existing shortcomings. Some of the more interesting features of the statistics have also been highlighted.

In preparing the publication, attempts have been made to assess the quality of each data source and wherever necessary, appropriate tables have been footnoted to highlight any shortcomings in the data.

Every endeavor has been made to ensure that the information given in the publication meets acceptable statistical standards. Though, the necessity has been felt to place strong reliance on existing data collections, it was not always possible for us to undertake the detailed assessment of any data available, as it would have been preferred. This was however, due to the wide range of data sources used and also because of the lack of detailed background information on the data collected. As a result, some shortcomings in the data presented are inevitable, although it has been considered and kept to a minimal. The NSB has always maintained continuous and close contact with all the relevant data providing sectors until the compilation was finalized for publication.

It's our responsibility to upgrade the range and the quality of statistics available on Bhutan. The improvement would be reflected and upgraded in our subsequent annual publications.

**National Statistical Bureau
Royal Government of Bhutan
Thimphu**



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BHUTAN

I. Location and Extent

Bhutan is situated in the Himalayas, landlocked between China and India comprising a land area of 38,394 square kilometers, the kingdom's longest east-west dimension, stretches around 300 kilometers and measures 170 kilometers at its maximum north-south dimension. Bhutan is situated in the eastern Himalayas and is mostly mountainous and heavily forested. It has 470 kilometers long bordered by Tibet (China's Xizang Autonomous Region) to the north and northwest and 605 kilometers with Indian state of Sikkim to the west, West Bengal to the southwest, Assam to the south and southeast, and Arunachal Pradesh to the east. Indian state of Sikkim, which measures eighty-eight-kilometer-wide territory, separates Bhutan from Nepal, while West Bengal separates Bhutan from Bangladesh by only sixty kilometers. The border with Tibet is traditional following the watershed of the Chumbi Valley in the northwest and the crest of the Himalayas in the north while, the southern border with India was established by treaty with the British in the nineteenth century and basically follows the line made by the Himalayan foothills with the plains.

Seventy two and half percent of the Kingdom is covered with forests; 10 percent with year-round snow and glaciers; nearly 6 percent is permanently cultivated or used for human habitation; another 3 percent was used for shifting cultivation (tsheri), a practice banned by the government; and 5 percent as meadows and pastures. While rest of the land is either barren, rocky areas or scrubland.

II. The Geologic Setting

The Himalayas of Bhutan consist of, from south to north, the Indian shield, the lower Himalayas, the Higher Himalayan Crystallines, and the Tibetan series. The Indian shield and its cover of sediments are separated from the lower Himalayas by the Main Boundary Thrust (MBT), which is the active thrust fault along which the rocks are being pushed up and over the Indian shield by the collision of India with Asia. The Main Central Thrust (MCT) separates the lower Himalayas from the Higher Himalayan Crystallines (HHC). This Thrust, now "dead" is the surface along which substantial displacement took place about 20 Ma ago, leading to initial thickening of the continental crust. It can be thought of as an ancient equivalent of the MBT. Above the MCT is the Kakhtang thrust, discovered by Lincoln Hollister and the 1996 expedition to Bhutan and named for the army base through which it passes; it appears to be later than the MCT and brings to the surface deep portions of the crust, which may represent deeper section of the HHC. The HHC are separated from the Tibetan series by the South Tibetan Detachment System (STD). The STD is a series of normal faults, all giving a sense of movement of the Tibetan series down to the north relative to the HHC.

The HHC appears to have been expelled out to the south in two pulses: one with the HHC carried south over the lesser Himalayas along the MCT, and the second producing a doubling of the HHC by further thrusting south along the Kakhtang thrust.

Most of the recent uplift of the Himalayas has occurred by thrusting along the MBT; movements associated with this fault causes the earthquakes occasionally felt in the Trashigang district. The uplift across the MBT set the stage for the erosion, which exhumed the deep portions of the HHC and its bounding structures, the MCT and the STD.

The MCT is slightly warped plane dipping northwards and separating the cover rocks of the underlying Indian shield from the highly deformed and thermally altered (metamorphosed) overlying wedge of the HHC. The plane intersects the rough topographic surface of the Himalayas, forming a line of intersection that can be followed across the ground surface. This line of intersection crosses the road several times near Barshong, crosses at the pass between Kanglung and Barshong, goes below the road from Kanglung to Trashigang and crosses the Gamrichu about 2km below Rolong. From there it goes along the east side of the Kurichu valley until it crosses the river, about 10 km below Lhuentse; from there it crosses back along the west side of the Kurichu valley and recrosses the road between Monggar and Sangor. It continues northwesterly through Bhutan, Sikkim, Nepal, Ladakh, Kashmir and into Pakistan. To the east it continues through the Northern Frontier of India. This incredible length of MCT is one of reasons it is one of the world's best-known geologic features.

III. Relief and Surface features

Bhutan has one of the most rugged mountain terrains in the world; it has elevations ranging from 160 meters to more than 7,000 meters above sea level. Bhutan's highest peak, at 7,554 meters above sea level, is north-central Kulha Gangri, close to the border with China; the second highest peak, Jhomo Lhari, overlooking the Chumbi Valley in the west, is 7,314 meters above sea level; nineteen other peaks exceed 7,000 meters.

In the north, the snowcapped Great Himalayan Range reaches heights of over 7,500 meters above sea level and extends along the Bhutan-China border. The northern region consists of an arc of glaciated mountain peaks with an arctic climate at the highest elevations. Watered by snow-fed rivers, alpine valleys in this region provide pasturage for livestock tended by a sparse population practicing transhumance.

The Inner Himalayas are southward spurs of the Great Himalayan Range. The Black Mountains, in central Bhutan, form a watershed between two major river systems, the Mo Chhu and the Drangme Chhu. Peaks in the Black Mountains range between 1,500 meters and 2,700 meters above sea level, and the fast-flowing rivers have carved out spectacular gorges in the lower mountain areas. The

woodlands of the central region provide most of Bhutan's valuable forest production. Eastern Bhutan is divided by yet another southward spur. Western Bhutan has fertile, cultivated valleys and terraced river basins.

In the south, the Southern Hills, or Siwalik Hills, the foothills of the Himalayas, are covered with dense deciduous forest, alluvial lowland river valleys, and mountains that reach to around 1,500 meters above sea level. The foothills descend into the subtropical Plain.

IV. Climate and Vegetation

The country can be divided into three distinct climatic zones corresponding to the three main geographical divisions. Bhutan's climate is as varied as its altitudes and, like most of Asia, it is affected by the monsoons. Western Bhutan is particularly affected by monsoons that bring between 60 and 90 percent of the region's rainfall. The climate is humid and subtropical in the southern plains and foothills, temperate in the inner Himalayan valleys of the southern and central regions, and cold in the north, with year-round snow on the main Himalayan summits.

Temperatures vary according to elevation. Temperatures in Thimphu, located at 2,200 meters above sea level in west-central Bhutan, range from approximately 15° C to 26° C during the monsoon season of June through September but drop to between about -4° C and 16° C in January. Most of the central portion of the country experiences a cool, temperate climate year round. In the south, a hot, humid climate helps maintain a fairly even temperature range of between 15° C and 30° C year-round, although temperatures sometimes reach beyond 35° C in the valleys during the summer.

Annual precipitation ranges widely in various parts of the country. In the severe climate of the north, there is only about forty millimeters of annual precipitation--primarily snow. In the temperate central regions, a yearly average of around 1,000 millimeters is more common, and 7,800 millimeters per year has been registered at some locations in the humid, subtropical south, ensuring the thick tropical forest. Thimphu experiences dry winter months (December through February) and almost no precipitation until March, when rainfall averages 20 millimeters a month and increases steadily thereafter to a high of 220 millimeters in August for a total annual rainfall of nearly 650 millimeters.

Bhutan's generally dry spring starts in early March and lasts until mid-April. Summer weather commences in mid-April with occasional showers and continues through the early monsoon rains of late June. The summer monsoon lasts from late June through late September with heavy rains from the southwest. The monsoon weather, blocked from its northward progress by the Himalayas, brings heavy rains, high humidity, flash floods and landslides, and numerous misty, overcast days. Autumn, from late September or early October to late November, follows the rainy season. It is characterized by bright, sunny days and some early

snowfalls at higher elevations. From late November until March, winter sets in, with frost throughout much of the country and snowfall common above elevations of 3,000 meters. The winter northeast monsoon brings gale-force winds down through high mountain passes.

There is a pronounced difference in the vegetation cover in three different zones of the country and it is mostly due to the prevalence of varied climatic conditions across the kingdom. The southern foothills are mostly covered by the dense and thick deciduous trees while the inner regions are dotted by an infinite variety of plants, flowers and trees including birch, pine, chestnut, oak, apples, peaches and plums are also grown in the fertile valleys. The northern part with the tundra type of climate allows the growth of coniferous trees and other alpine growths like magnolia, rhododendrons, birch, fir, spruce etc...

V. Drainage Pattern

Fed by fresh snow each winter and slow melting in the summer, the glaciers bring millions of liters of fresh water to Bhutan and downriver areas each year. Bhutan has four major river systems: the Drangme Chhu; the Puna Tsang Chhu; the Wang Chhu; and the Amo Chhu. Each flows swiftly out of the Himalayas, southerly through the Duars to join the Brahmaputra River in India. The largest river system, the Drangme Chhu, flows southwesterly from India's state of Arunachal Pradesh and has three major tributaries: the Drangme Chhu, Mangde Chhu, and Chamkhar Chhu. These rivers form the Drangme Chhu basin. In the Duars, where eight tributaries join, the Drangme Chhu is called the Manas Chhu. The 320-kilometer-long Puna Tsang Chhu rises in northwestern Bhutan as the Mo Chhu and Pho Chhu, which are fed by the snows and glaciers from the Great Himalayan Range. They flow southerly to Punakha, where they join to form the Puna Tsang Chhu, which flows southerly into India's state of West Bengal. The Wang Chhu which is 370 kilometers flows southeasterly through west-central Bhutan, drains the Ha, Paro, and Thimphu valleys, and continues through the foothills, before it finally drains into West Bengal. The smallest river system, the Torsa Chhu, known as the Amo Chhu in its northern reaches, flows swiftly through western Bhutan before broadening near Phuntsholing and then flowing into India. Glaciers in northern Bhutan, which cover about 10 percent of the total surface area, are an important renewable source of water for Bhutan's rivers.

VI. Government

On 17 December 1907, the civil and monastic representatives unanimously crowned Ugyen Wangchuck as the first hereditary monarch of Bhutan. It was as a result of the influence of the strength and the farsightedness of Ugyen Wangchuck that for the first time Bhutan was united under a central authority, which provided the country with stability and opportunity for development. In 1926 his son Jigme Wangchuck, who ruled until his death in 1952, succeeded Ugyen Wangchuck. The third Druk Gyalpo, Jigme Dorji Wangchuck began a campaign of modernization and expansion of Bhutan's

government and society based on the accomplishments of his two predecessors in uniting the country under a strong central authority. Hence, the National Assembly consisting of representatives of the people, the Monastic order and civil administration was reestablished in 1953. The present Druk Gyalpo, His Majesty King Jigme Singye Wangchuck acceded to the throne in 1972. His Majesty the king is the head of state. The head of government is nominated from among the Cabinet Ministers. There has been steady decentralization of decision-making and institute building since His Majesty the King was enthroned. The most momentous change in the structure of the government came in 1998 after the devolution of the executive power by His Majesty the King to the Council of Ministers. The change set off a process of adaptation in the relationship between the various branches of the government. **Chart 1** reflects the logical delineation in the separation of powers along with the establishment of elected Council of Ministers with full executive powers. It shows the apparatus of all the important aspects of the Bhutanese system of governance like the executive, legislative and judiciary going down from the central to the district levels.

Under the unity and farsighted leadership provided by His Majesty the King, the nation will be governed primarily through the Cabinet. The Cabinet Ministers are the heads of ministries, who will oversee that policies are formulated and programmes are carried out. The autonomous bodies have interactions primarily with the ministers, and this is denoted as such in the organogram.

VII. The National Assembly

The Tshogdu (The National Assembly) consists of 154 members; 106 are the elected representatives of the people, 10 are from the Dratshang (Clergy) and 35 are nominated representatives of the Government. The National Assembly as the legislative body is an independent institute, which elects Cabinet Ministers, approves annual budget and legislates acts governing the country, and discusses national issues. The people's representatives are directly elected by the people of their respective constituencies through secret ballot, while the representative of the clergy are elected by the Zhung Dratshang (Central Monastic Body) and the concerned Rabdeys (Dzongkhag Monastic Bodies). His Majesty the King nominates the representatives of the government from among the senior civil servants. All the members serve for a term of three years. The Speaker and the Deputy Speaker are elected by the National Assembly from among its members. The National Assembly meets once a year. The assembly enacts legislation and advises the government on all matters of national importance. Decisions are passed by a simple majority. A secret ballot is taken on all matters of national importance. Any Bhutanese over 25 years of age can be a candidate for membership.

VIII. The Royal Advisory Council

The Lodey Tshogdey (The Royal Advisory Council) was formally established in 1965 to advise the King and government ministers and to supervise the implementation of programs and policies laid down by the National Assembly. The Royal Advisory Council will continue to be consultative and advisory body. The Royal Advisory Council, as stipulated in its chatrim, will ensure the observance of

the decisions made during the National Assembly and the Cabinet meetings. Therefore, it will have links with both the Cabinet and the National Assembly. It consists of nine members. There are six representatives of the public (Measer Thuepoens) who serve for a term of three years. They are elected by the National Assembly through secret ballot from among the representatives of the Dzongkhags. Each Dzongkhag (district) deposes one representative who is elected through secret ballot from among the public. Two members represent the Monastic Body, one each from the Central Monastic Body and the Rabdeys who serve a term of one year. The chairman (Zhung Kalyon) is nominated by the king.

IX. The Monastic Body

The Monastic Body comprises the Central Monastic Body and the Rabdeys (Dzongkhag Monastic Bodies). The current strength of the Monastic Body is about 5,000 registered gelongs (monks) and is financed by an annual subsidy from the Royal Government. Punakha and Thimphu Dratshang having strength of 1,600 constitute the Central Monastic Body. The Monastic Body is the sole arbiter on religious matters. The Je Khempo who is chosen from among high-ranking gelongs is the head of the Body. He is assisted by four high-ranking Lopens of the Central Monastic Body.

X. Local Government

Local administration has been strengthened to meet the requirements of decentralized administration and development. There are twenty dzongkhags or districts each under the charge of a dzongkhag administrator or dzongda responsible for civil administration and development activities. Each dzongda is assisted by a dzongrab who is responsible for planning and development and civil administration. The larger dzongkhags are sub divided into dungkhags headed by a dungpa. A Group of villages, a gewog, the lowest administrative unit each gewog is under the charge of a gup. In each dzongkhag the dzongda is assisted in his development function by the Dzongkhag Yargye Tshogchung (Dzongkhag Development Committee), which consists of people's representatives and government officials.

XI. The Judiciary

Bhutan's Legal Code is based on that laid down by Ngawang Namgyal, the first Shabdrung who arrived Bhutan in 1616. Traditional Buddhist precepts are significantly maintained in the legal processes. The High Court consists of eight judges. There is a court in each Dzongkhag headed by a Drangpoen and assisted by Ramjams but minor disputes are settled by village gups. As the final arbiter of law, the judiciary has been independent from other branches of the government since its inception.

GENERAL INFORMATION

EXPLANATION OF SYMBOLS USED IN THE YEARBOOK

- n.a. Stands for "not available" or "not applicable".
 .. Stands for "nil" or "rounded to zero".
 * Stands for "sampling error" too high for accurate estimation or estimates less than one percent.
 () Stands for negative numbers if it appears in data cells
 CY Stands for calendar year, period from January to December.
 FY Stands for fiscal year, period from April to March up to 1985/86 and from July to June since 1986/87 unless other wise specified.

EXPLANATORY NOTES

1. In some cases, minor discrepancies may occur between sums of component items and totals because of rounding.
2. Dzongkhags given in some tables differ from those given in Annex I. This is because of changes following the creation of new Dzongkhags.
3. Names of Ministries/Agencies both in tables and footnotes may differ. This is also because of changes following the creation of new Ministries/agencies.
4. Totals of items may not add up slightly due to rounding.

SOME UNITS OF MEASUREMENT

Numbering (UK)

Hundred	= 10 ²
Thousand	= 10 ³
Million	= 10 ⁶
Billion	= 10 ¹²
Trillion	= 10 ¹⁸

A. Length Measurement

1. Metric equivalents

10 mm	= 1 cm
10 cm	= 1 dm
10 dm	= 1 m
10 m	= 1 dkm
10 dkm	= 1 hm
10 hm	= 1 km

Abbreviations

mm	= millimeter
cm	= centimeter
m	= meter
dm	= decimeter
hm	= hectometer

2. British units

12 inches	= 1 foot
3 feet	= 1 yard
5.5 yards	= 1 rod, pole
4 poles	= 1 chain
10 chains	= 1 furlong

8 furlongs	= 1 mile	
3. Conversion from British to metric units (lengths)		
1 inch	= 2.539998 cm	1 m=39.370113 inches
1 foot	= 0.3047997 m	1 m=3.280843 feet
1 yard	= 0.9143992 m	1 m=1.093614 yard
1 mile	= 1.609343 km	1 k =0.6213717 miles
1 nautical mile	= 1.853182 km	

B. Area measurements**1. British units**

144 square inches	= 1 square foot
9 square feet	= 1 square yard
30 1/4 yards	= 1 square rod, pole
40 square rod	= 1 rood
4 roods	= 1 acre
640 acres	= 1 square miles

2. Metric units

100 square mm	= 1 square cm
100 square cm	= 1 square dm
100 square dm	= 1 square m
100 square m	= 1 are
100 square areas	= 1 hectare
100 hectares	= 1 square km

3. Conversion from British to Metric units (Area)

1 square yard	= 0.836 square m
1 square feet	= 0.093 square m
1 square inch	= 6.452 square cm
1 square m	= 1.196 square yard
1 square m	= 10.764
1 square cm	= 0.155 square inch
1 square mile	= 2.590 square km
1 square km	= 0.386 square mile

C. Weight measurements**1. British units**

16 dram	= 1 ounce
16 ounces	= 1 pound
28 pounds	= 1 cwt
20 cwt	= 1 ton
14 pounds	= 1 stone

2. Metric units

10 mg	= 1 cg
10 cg	= 1 dg
10 dg	= 1 g
10 g	= 1 dkg
10 dkg	= 1 hg
10hg	= 1 kg
100 kg	= 1 quintal
200 mg	= 1 carat

3. Conversion from British to metric units

1 grain	= 0.0648 g
1 ounce	= 31.103 g
1 g	= 15.432 grains
1 pound	= 0.373 kg
1 tone	= 1.016 metric tones

D. Conversion of air temperatures

1. Degree Celsius to degree Fahrenheit.
 $(9 \times T)/5 + 32$, where T is temperature in degree Celsius.
2. Fahrenheit to degree Celsius.
 $5 \times (T - 32)/9$, where T is temperature in Fahrenheit.

KEY FACTS ABOUT BHUTAN

Land area	38,394 sq. km.
Forest cover	72.5%
Population, 2003 (estimate)	734,340
Average Household size, 2000	5.53
National Language	Dzongkha
National Currency	Ngultrum (Nu.)
Hospitals, 2002	29
Doctors, 2002	122
Civil servants, September 2003	15,050
Schools, Institutes & NFE centers, 2003	791
Teachers (including in institutes & NFE), 2003	4,746
Students (including in institutes & NFE), 2003	145,249
Economic dependency ratio, 1999	122
Unemployment rate, 1999	1.4
Telephone trunk calls, 2002	11,893
Postal infrastructure, 2003	109
Total road length, June 2003	4,007.1 km.
Registered vehicles, 2003	25,003
Electricity generation, 2001/02	2,059.4 Mn KWh
Electricity exports, 2001/02	1,477.7 Mn KWh
Tourist arrivals, 2002	5,599
Revenue earned from tourism, 2002	7.98 Mn US \$
Total establishments, June 2003	14,310
Balance of trade, 2001/02	- 3,995.5 Mn Nu.
Exchange rate, Nu. Per US \$, 2002/03	47.9
Gross international money reserves, 2002/03	373.8 Mn US \$
Total Ninth Plan budgetary outlay (2002-07)	70,000 Mn Nu.
GDP real growth, 2003(estimate)	6.5%
Inflation rate, 2003	1.6%
Purchasing Power of Nu., 2003 (base year =1979)	0.15 Nu.

CHAPTER 1: POPULATION



The main source of statistics on population is the population census. In most of the countries population censuses are undertaken on a five or ten yearly basis aimed to provide a full count of the population according to a range of characteristics such as demography, health, education and other social aspects. Censuses are

useful not only because they provide a range of current population data but also use as a benchmark for making population estimates in non-census years and for population projections. Population censuses were undertaken in Bhutan in 1969 and 1980. The population figures for those early years were large because of the large influx of migrants from neighboring countries, particularly labor migrants at the instance of construction coinciding with the large-scale development work on infrastructure expansion. With the development emphasis changing to human resource development the large migrants moved out and in 1996 the total population was found to be around 600,000. The next round of Census is scheduled for 2005.

The second major element of population statistics relates to the demographic characteristics of the population. The most common source of information on demography is the vital registration system (which usually covers the registration of births and deaths and sometimes marriages and divorces). In Bhutan, the vital registration system does not currently provide the full coverage of births and deaths and it has been necessary to undertake special sample surveys, (the first one in 1984, and second one in 1994 and 2000) to obtain the important demographic information. Statistics presented in this chapter includes estimates of current population together with data from 1984 on demographic survey and 1994 and 2000 National Health Surveys. These special surveys carried out at certain intervals provide the changes that are occurring in the population and its indicators. The population data presented in this chapter is an estimated population using the annual growth rates resulting from the National Health Surveys. The interpretations of demographic indicators are as follows:

Crude birth rate: Number of live births in a year per thousand populations.

General fertility rate: Number of live births in a year per thousand women in the childbearing age (15 to 44 or 49).

Total fertility rate: Average number of daughters born by women during their reproductive span of life.

Gross reproductive rate: Measures the extent to which a cohort of newly born girls will replace their mothers under pre-determined schedules of fertility and mortality.

Crude death rate: Number of deaths in a year per thousand populations.

Infant mortality rate: Number of deaths during first year of life per thousand live births.

Maternal mortality ratio: The annual number of deaths of women from pregnancy-related causes per thousand live births.

Rate of natural Increase: the difference between the crude birth rate and the crude death rate.

Dependency ratio: Measures the number of dependents as a percentage of population aged 15 to 64. Child dependency refers to children aged 0 to 14 years, while old age dependency refers to persons aged 65 and over.

Index of aging: It is the number of person's aged 65 and over as a percentage of the number of persons aged 0 to 14.

TABLE 1.1
POPULATION ESTIMATES BY AGE AND SEX, 2003

Age group	Person			Percent		
	Male	Female	Total	Male	Female	Total
0 - 4	56,855	56,603	113,458	7.7	7.7	15.5
5 - 9	52,813	53,549	106,362	7.2	7.3	14.5
10 - 14	45,061	43,915	88,976	6.1	6.0	12.1
15 - 19	33,491	32,536	66,027	4.6	4.4	9.0
20 - 24	28,966	29,337	58,303	3.9	4.0	7.9
25 - 29	25,033	25,012	50,045	3.4	3.4	6.8
30 - 34	22,660	22,248	44,908	3.1	3.0	6.1
35 - 39	21,253	19,886	41,139	2.9	2.7	5.6
40 - 44	17,876	16,796	34,672	2.4	2.3	4.7
45 - 49	14,464	13,414	27,878	2.0	1.8	3.8
50 - 54	13,612	12,832	26,444	1.9	1.7	3.6
55 - 59	12,092	11,306	23,398	1.6	1.5	3.2
60 - 64	11,090	10,397	21,487	1.5	1.4	2.9
65 - 69	6,379	6,580	12,959	0.9	0.9	1.8
70 - 74	4,414	4,398	8,812	0.6	0.6	1.2
75 +	4,746	4,726	9,472	0.6	0.6	1.3
All ages	370,805	363,535	734,340	50.5	49.5	100.0

Note:

Estimates based on population rate 2.5% , 2000 National Health Survey.

Source: National Statistical Bureau, Thimphu.

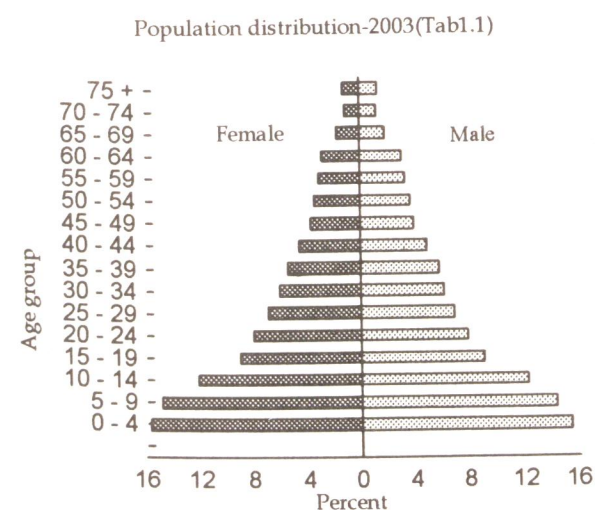


TABLE 1.2
SUMMARY OF POPULATION INDICATORS, 1998 TO 2003

Population Indicators	1998	1999	2000	2001	2002	2003
Sex Ratio						
(males per 100 females)	102.0	102.0	102.0	102.0	102	102
Age Composition (%)	100.1	100.1	100.0	100.0	100.1	100.1
0 - 14	42.1	42.1	42.1	42.1	42.1	42.1
15 - 49	44.0	44.0	44.0	44.0	44.0	44.0
50 - 59	6.8	6.8	6.8	6.8	6.8	6.8
60 +	7.2	7.2	7.2	7.2	42.1	7.2
Median age(years)	19.4	19.4	19.4	19.4	19.4	19.4
Dependency Ratio						
Child dependency	78.3	78.3	78.3	78.3	78.3	78.3
Old age dependency	8.0	8.0	7.9	7.9	7.9	7.9
Total dependency	86.3	86.3	86.2	86.2	86.2	86.2
Index of aging	10.1	10.1	10.1	10.1	10.1	10.1

Source: Estimates by National Statistical Bureau, Thimphu

TABLE 1.3
PERCENTAGE OF POPULATION BY MARITAL STATUS AND AGE, 1999

Age group	(percent)									
	Never married		Married		Divorced/ Separated		Widowed		Total	
	M	F	M	F	M	F	M	F	M	F
0-14	100.0	99.7	0.0	0.3	0.0	0.0	0.0	0.0	100.0	100.0
15-19	96.0	71.2	4.0	11.4	0.0	17.4	0.0	0.0	100.0	100.0
20-24	62.2	19.5	26.5	27.6	11.2	52.9	0.0	0.0	100.0	100.0
25-29	20.2	6.4	42.9	32.4	29.4	53.4	7.6	7.8	100.0	100.0
30-34	9.1	2.8	57.6	34.8	22.2	55.8	11.1	6.6	100.0	100.0
35-39	3.5	2.3	51.3	34.5	34.8	50.0	10.4	13.2	100.0	100.0
40-44	5.0	1.9	58.4	37.7	26.7	32.1	9.9	28.3	100.0	100.0
45-49	3.9	2.1	71.1	39.0	7.9	22.6	17.1	36.3	100.0	100.0
50-54	1.8	0.8	44.2	32.0	31.9	28.7	22.1	38.5	100.0	100.0
55-59	1.5	1.5	33.1	30.9	32.3	10.3	33.1	57.4	100.0	100.0
60-64	1.5	0.7	26.2	14.5	32.3	21.4	40.0	63.4	100.0	100.0
65+	0.7	0.3	17.5	6.7	26.4	14.7	55.4	78.4	100.0	100.0
All ages	31.6	20.4	29.0	22.2	19.9	28.6	19.4	28.9	100.0	100.0

Source: National Labour Force Survey 1998 and 1999.

TABLE 1.4
SUMMARY OF DEMOGRAPHIC INDICATORS, BHUTAN, 1984, 1994 AND 2000

Indicator	1984	1994	2000
Fertility			
Crude birth rate	39.1	39.9	34.1
General fertility rate (Per 1000 Women, 15-49 years)	169.6	172.7	142.7
Total fertility rate (per Women of 15-49 years)	5.9	5.6	4.7
Gross reproduction rate	2.9	n.a	n.a
Net reproduction rate	1.9	n.a	n.a
Rate of natural increase (%)	2.0	3.1	n.a
Mortality			
Crude death rate	19.3	9.0	8.6
Infant mortality rate	142.0	70.7	60.5
Maternal mortality rate (per 1000 live births)	..	3.8	2.6
Under age 5 mortality rate (per 1000 live births)	..	96.9	84.0
Life expectancy at birth (years)			
Males	47.5	66.1	..
Females	45.8	66.0	..
Females	49.1	66.2	..

Note:

For explanation of demographic indicators, see introduction to this chapter.

Source: 1984 Demographic Sample Survey, and 2000 National Health Survey.

CHAPTER 2: HEALTH



Efforts to establish modern medical facilities in Bhutan were begun in 1962. The Ministry of Health now has wide spread network of Health Facilities across the country, covering around 90% of the population. Institutional health facilities were earlier concentrated in the urban centers, but today the emphasis has shifted to the rural areas where the majority of the population live. Health Care is delivered in a totally integrated system through an organized structure placed at the National, Regional and District Hospitals serving as Referral Centers followed by the Basic Health Units (BHUs) at the Community Level. Basic health units (BHUs) serve remote areas staffed by well-trained paramedical personnel who are equipped to

treat minor ailments, and advise on preventive measures to avoid the spread of communicable diseases. Extended Health Centers (Outreach Clinics) and Mobile Health Units support these BHUs.

There are also a number of special health programs in Bhutan administered by the Ministry of Health. These cover Child Health and Immunization Program, Reproductive Health Program, Acute Respiratory Infection (ARI) Program, National Control of Diarrhoeal Disease Program (NCDDP), National STD/AIDS Control Program, Rural Water Supply & Sanitation Program (RWSS), Village Health Workers Program (VHW), National Leprosy Program, National Malaria Control Program (NMCP) and Mental Health Program. As of 2002, there were 29 hospitals, 166 BHUs and over 455 Outreach Clinics manned by over 2001 health personnel of different categories.

Besides the allopathic system, there exists a well established network of Indigenous Medical Facilities under the Institute of Traditional Medical Services that has basically three functions; medical services for out patients; collection and manufacturing of indigenous medicines; and research and training of the Physicians (Drungtsho) and Compounders (Menpas). As of 2002, there were 13 Dzongkhag Level Indigenous Medical Units attached to Dzongkhag Hospitals, each run by a Drungtsho or Menpa. There were 32 Physicians (Drungtsho) and 23 Menpas working in indigenous medical service units.

The main indicators of the health status of the population are morbidity and mortality. Morbidity refers to the type of illness people suffer from, while mortality relates to death rates and causes of death. The Department of Health has been conducting the National Health Surveys every five years and this is the source for

mortality statistics. Over all level of mortality have been estimated from the Demographic Sample Surveys, but causes of death data have not yet become available. Efforts are under way to improve the vital registration system. Morbidity data are obtained from the patients' records in hospitals and Basic Health Units whose data are presented in the annual publication of Health Department the "Annual Health Bulletins". The available morbidity statistics are based on patients treated by hospitals, basic health units and dispensaries.

General health conditions in Bhutan are affected by low nutrition intake, poor sanitation, high prevalence of parasitic infections and contagious diseases. Acute Respiratory Infection continues to dominate entire morbidity situation. There is also a rising condition of the non-communicable diseases.

TABLE 2.1
SUMMARY OF HEALTH FACILITIES AND PERSONNEL, BHUTAN, 1998 TO 2002

Facilities	1998	1999	2000	2001	2002
Number of hospitals	28	28	29	29	29
Number of basic health units	145	145	160	168	166
Number of dispensaries/outreach clinic	n.a	n.a	n.a	461	455
Number of indigenous hospitals	1	1	1	1	1
Number of indigenous dispensaries	11	13	18	19	19
Number of doctors	98	103	109	114	122
Persons per doctor	6,510	6,384	6,220	7,476	6019
Number of hospital beds	1,001	1,023	1,023	1,023	1,023
Persons per hospital bed	599	643	663	833	696
Doctors per 10,000 persons	1.5	2	2	1	1.7
Hospital bed per 10,000 persons	17	16	15	12	14
Population covered by health care (%)	90	90	90	90	n.a
Population access to safe drinking water (%)	58	63	78	68	n.a
Women attended by trained personnel during child birth (%)	34	15	24	n.a	24

Note:

Includes doctors in administrative services, non-nationals and expatriates.

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.2
TYPE OF HEALTH FACILITIES IN DZONGKHAGS, 2002
(Number)

Dzongkhag	Hospitals	Basic health unit	Outreach clinic
Bumthang	1	3	14
Chhukha	3	5	38
Dagana	..	7	9
Gasa	..	3	3
Haa	1	4	15
Lhuntse	1	6	32
Mongar	1	11	44
Paro	1	3	24
Pemagatshel	1	4	20
Punakha	1	5	7
Samtse	3	8	2
Samdrup Jongkhar	2	9	29
Sarpang	2	10	12
Thimphu	4	6	19
Trashigang	3	10	72
Trashi Yangtse	1	3	23
Trongsa	1	6	23
Tsirang	1	4	5
Wangdue Phodrang	1	8	23
Zhemgang	1	7	41
			455
Bhutan	29	166	455

Note:

BHU's figure excludes those centres which are not functioning.

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.3
HEALTH PERSONNEL BY CATEGORY, 1997 TO 2002
(Number)

Health personnel	1997	1998	1999	2000	2001	2002
Doctors	101	98	103	109	114	122
District Health Supervisory Officer(DHSO)	n.a	n.a	n.a	n.a	23	27
Health Assistants	111	115	151	148	163	173
Basic health workers	154	152	182	178	176	175
Sister and nurses	355	386	467	443	569	500
B.Sc Nurses	n.a	n.a	n.a	n.a	n.a	5
General Nurse Midwife/Staff Nurses(GNM)	n.a	n.a	n.a	n.a	n.a	174
Auxiliary Nurse Midwife(ANM)	n.a	n.a	n.a	n.a	n.a	145
Assistant Nurses	n.a	n.a	n.a	n.a	n.a	176
Other technicians	183	211	253	244	259	252
Indigenous physicians	19	28	31	31	31	32
Indigenous compounders/Menpas	17	17	17	17	23	23
Malaria workers	n.a	n.a	n.a	n.a	59	66
Village Health workers (VHW)	1093	1,245	1,012	1327	n.a	n.a

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.4

MORBIDITY CASES REPORTED FROM BASIC HEALTH UNITS, BHUTAN, 2002

Disease Name	Under 5 years		5 years & older		Total	%	CRO*
	Male	Female	Male	Female			
Cough and cold	12,198	12,713	53,655	61,016	139,582	27.4	40
All Other New Cases	4,738	4,859	45,563	56,376	111,536	21.9	629
Skin diseases (other than scabies)	4,876	5,097	19,504	18,368	47,845	9.4	68
Diarrhoea	5,359	5,222	12,318	11,976	34,875	6.9	98
Eye Diseases (Conjunctivitis)	2,151	2,413	12,072	16,160	32,796	6.5	43
Peptic ulcer syndrome	110	162	11,688	15,847	27,807	5.5	57
Injuries/Fractures	862	769	12,568	5,310	19,509	3.8	200
Dysentery (bacillary or amoebic)	2,712	2,693	6,978	6,397	18,780	3.7	80
Worms	2,149	2,211	6,205	7,086	17,651	3.5	29
Diseases of Teeth and Gums	195	286	5,223	6,323	12,027	2.4	52
Ear Diseases	1,692	1,738	3,873	4,271	11,574	2.3	27
Pneumonia	2,126	2,086	1,436	1,654	7,302	1.4	56
UTI (other than STD)	152	222	1,999	3,928	6,301	1.2	58
Anaemia	67	85	1,156	3,301	4,609	0.9	38
Scabies	352	419	1,955	1,509	4,235	0.8	6
Hypertension	0	0	1,666	2,182	3,848	0.8	32
Malaria	197	217	1,504	1,069	2,987	0.6	25
Bites/Stings	218	195	1,277	1,011	2,701	0.5	17
Urethral Discharge (susp.STD)	3	3	460	198	664	0.1	5
Genital Ulcer(susp.STD)	5	9	197	325	536	0.1	5
Vaginal Discharge(susp.STD)	0	5	0	443	448	0.1	8
Hepatitis(jaundice)	24	23	162	170	379	0.1	16
Cirrhosis	18	13	146	166	343	0.1	13
Other Mental Disorders	1	3	70	49	123	0.0	7
Cervical Cancer	0	0	0	30	30	0.0	3
Other Musculo-skeletal Disease	0	1	21	5	27	0.0	0
Other Eye Diseases	0	0	14	6	20	0.0	0
Dental Caries	0	0	11	8	19	0.0	0
Other Ear Problems	0	0	7	6	13	0.0	0
Other Respiratory Diseases	1	0	8	4	13	0.0	0
Arthritis	0	0	5	5	10	0.0	0
Pelvic Inflammatory Disease	0	0	0	9	9	0.0	0
Other Disease of Digestive System	1	0	4	3	8	0.0	0
Burns and Scalds	1	2	1	2	6	0.0	0
Menstrual Disturbances	0	0	0	5	5	0.0	0
Other Nutritional Deficiencies	0	0	3	1	4	0.0	0
Diseases of Breast	0	0	0	2	2	0.0	0
Epilepsy	0	0	1	0	1	0.0	0
Total	40,208	41,446	201,751	225,221	508,626	100.0	1,612

Note:

*Cases referred out

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.5(a)

PATIENTS TREATED IN BASIC HEALTH UNITS BY DISEASE, BHUTAN, 1998 TO 2002

Disease	Persons('000)				
	1998	1999	2000	2001	2002
Diarrhoea/Dysentery	67	66	67	71	110
Diarrhoea	n.a	n.a	n.a	n.a	61
Dysentery	n.a	n.a	n.a	n.a	50
Cough & cold	n.a	n.a	n.a	n.a	25
Respiratory tract infection	135	14	15	133	0
Worms	34	31	25	10	18
Skin infection	60	53	52	25	42
Malaria/P.U.O	5	77	4	62	0
Conjunctivitis	34	30	27	4	27
Otitis media	11	11	11	20	n.a
Nutritional Deficiency	16	14	14	31	0
Fever of Unknown Origin	n.a	n.a	n.a	n.a	0
Peptic Ulcer Syndrome	28	32	34	12	35
Disease of teeth and gum	12	13	15	16	32
Urinary tract infection & Nephritis	7	68	8	37	5
Headache	n.a	n.a	n.a	18	n.a
Injuries/Fractures	20	28	23	9	124
Sexually transmitted Diseases	1	1	1	25	n.a
Disease of female genital tract and childbirth peuperum	2	2	2	58	n.a
Ear Diseases	n.a	n.a	n.a	n.a	17
Childhood diseases	3	3	3	3	n.a
Pneumonia	n.a	n.a	n.a	n.a	35
UTI(other than STD)	n.a	n.a	n.a	n.a	36

Contd...

TABLE 2.5(a)(contd.)

PATIENTS TREATED IN BASIC HEALTH UNITS BY DISEASE, BHUTAN, 1998 TO 2002

Disease	Persons('000)				
	1998	1999	2000	2001	2002
Anaemia	n.a	n.a	n.a	n.a	24
Scabies	n.a	n.a	n.a	n.a	4
Hypertention	n.a	n.a	n.a	n.a	20
Bites/Stings	n.a	n.a	n.a	n.a	11
Urethral Discharge(susp.STD)	n.a	n.a	n.a	n.a	3
Genital Ulcer(susp.STD)	n.a	n.a	n.a	n.a	3
Vaginal Discharge(susp.STD)	n.a	n.a	n.a	n.a	5
Hepatitis(Jaundice)	n.a	n.a	n.a	n.a	10
Cirrhosis	n.a	n.a	n.a	n.a	8
Other Mental Disorders	n.a	n.a	n.a	n.a	4
Cervical Cancer	n.a	n.a	n.a	n.a	2
Other Musculo-skeletal Disease	n.a	n.a	n.a	n.a	0
Other Eye Diseases	n.a	n.a	n.a	n.a	0
Dental Caries	n.a	n.a	n.a	n.a	0
Other ear problems	n.a	n.a	n.a	n.a	0
Arthritis	n.a	n.a	n.a	n.a	0
Pelvic Inflammatory Disease	n.a	n.a	n.a	n.a	0
Other Disease of Digestive System	n.a	n.a	n.a	n.a	0
Burns & Scalds	n.a	n.a	n.a	n.a	0
Menstrual Disturbances	n.a	n.a	n.a	n.a	0
Other Nutritional Deficiencies	n.a	n.a	n.a	n.a	0
Disease of Breast	n.a	n.a	n.a	n.a	0
Epilepsy	n.a	n.a	n.a	n.a	0
Depression	n.a	n.a	n.a	n.a	0
All other new cases	34	46	6	77	390
Total	34	46	6	77	484

Source: "Annual Health Bulletin 2002", Department of Health Service, MoHE, Thimphu.

TABLE 2.5(b)

PATIENTS TREATED IN BASIC HEALTH UNITS BY DISEASE, BHUTAN, 1998 TO 2002

Disease	(Percent)				
	1998	1999	2000	2001	2002
Diarrhoea/Dysentery	10	12	12	12	11
Diarrhoea	n.a	n.a	n.a	n.a	6
Dysentery	n.a	n.a	n.a	n.a	5
Cough & cold	n.a	n.a	n.a	n.a	2
Respiratory tract infection	31	27	26	22	0
Worms	2	6	4	4	2
Skin infection	9	9	9	10	4
Malaria/P.U.O	0	1	1	1	2
Conjunctivitis	10	5	3	3	n.a
Otitis media	3	2	5	5	n.a
Nutritional Deficiency	2	3	2	2	0
Fever of Unknown Origin	0	4	3	3	n.a
Peptic Ulcer Syndrome	7	6	6	6	4
Disease of teeth and gum	4	2	3	3	3
Urinary tract infection & Nephritis	1	1	1	1	n.a
Headache	15	9	10	4	n.a
Injuries/Fractures	3	4	4	0	12
Sexually transmitted Diseases	0	0	0	1	n.a
Disease of female genital tract and childbirth peuperum	0	0	0	10	n.a
Ear Diseases	n.a	n.a	n.a	n.a	2
Childhood diseases	0	1	1	1	n.a
Pneumonia	n.a	n.a	n.a	2	3
UTI(other than STD)	n.a	n.a	n.a	n.a	4

Contd...

TABLE 2.5(b)(contd.)

PATIENTS TREATED IN BASIC HEALTH UNITS BY DISEASE, BHUTAN, 1998 TO 2002

(Percent)

Disease	1998	1999	2000	2001	2002
Anaemia	n.a	n.a	n.a	n.a	2
Scabies	n.a	n.a	n.a	n.a	0
Hypertention	n.a	n.a	n.a	n.a	2
Bites/Stings	n.a	n.a	n.a	n.a	1
Urethral Discharge(susp.STD)	n.a	n.a	n.a	n.a	0
Genital Ulcer(susp.STD)	n.a	n.a	n.a	n.a	0
Vaginal Discharge(susp.STD)	n.a	n.a	n.a	n.a	0
Hepatitis(Jaundice)	n.a	n.a	n.a	n.a	1
Cirrhosis	n.a	n.a	n.a	n.a	1
Other Mental Disorders	n.a	n.a	n.a	n.a	0
Cervical Cancer	n.a	n.a	n.a	n.a	0
Other Musculo-skeletal Disease	n.a	n.a	n.a	n.a	0
Other Eye Diseases	n.a	n.a	n.a	n.a	0
Dental Caries	n.a	n.a	n.a	n.a	0
Other ear problems	n.a	n.a	n.a	n.a	0
Arthritis	n.a	n.a	n.a	n.a	0
Pelvic Inflammatory Disease	n.a	n.a	n.a	n.a	0
Other Disease of Digestive System	n.a	n.a	n.a	n.a	0
Burns & Scalds	n.a	n.a	n.a	n.a	0
Menstrual Disturbances	n.a	n.a	n.a	n.a	0
Other Nutritional Deficiencies	n.a	n.a	n.a	n.a	0
Disease of Breast	n.a	n.a	n.a	n.a	0
Epilepsy	n.a	n.a	n.a	n.a	0
Depression	n.a	n.a	n.a	n.a	0
All other new cases	4	8	11	13	24
Total	4	8	11	13	31

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.6

HOSPITAL MORBIDITY CASES REPORTED FOR BHUTAN, 2002

Disease	Under 5 years		5 years & older		Total	%	CRO*
	Male	Female	Male	Female			
Cough and Colds	14,394	14,819	47,484	42,804	119,501	20.83	12
All other new cases	6,050	6,658	39,984	37,267	89,959	15.68	134
Skin Diseases(other than scabies)	5,483	5,501	23,473	17,335	51,792	9.03	17
Diarrhoea	5,746	5,135	13,403	9,482	33,766	5.89	3
Other Respiratory Diseases	3,013	3,043	13,577	13,150	32,783	5.71	16
Peptic Ulcer Syndrome	158	268	12,103	13,304	25,833	4.50	61
Dysentery(bacillary or amoebic)	3,067	2,935	8,014	5,644	19,660	3.43	2
Diseases of teeth and gums	584	603	8,807	7,451	17,445	3.04	21
Injuries/Fractures	698	759	10,535	3,894	15,886	2.77	40
Other Musculo-skeletal Disease	280	294	8,815	6,461	15,850	2.76	9
Other Disease of Digestive system	824	858	7,094	7,012	15,743	2.74	9
Eye Diseases(Conjunctivitis)	1,355	1,433	6,610	5,712	15,110	2.63	83
Dental Caries	404	427	6,648	6,133	13,612	2.37	104
Ear Diseases	1,578	1,457	4,785	4,078	11,898	2.07	8
Worms	1,325	1,323	4,026	3,372	10,046	1.75	11
UTI(other than STD)	193	230	3,518	5,521	9,462	1.65	30
Hypertension	0	0	4,359	4,656	9,015	1.57	34
Other Eye diseases	351	390	4,070	3,503	8,314	1.45	15
Anaemia	122	194	2,212	3,999	6,527	1.14	28
Scabies	635	844	2,587	1,884	5,950	1.04	0
Pneumonia	1,643	1,548	1,104	927	5,222	0.91	18
Other Nutritional Deficiencies	551	594	1,884	1,624	4,653	0.81	3
Arthritis	14	43	1,813	1,729	3,599	0.63	3
Malaria	175	203	2,015	1,185	3,578	0.62	17
Industrial/Occupational Injuries	85	77	2,302	1,016	3,480	0.61	3
Bites/Stings	219	174	1,539	949	2,881	0.50	4
Other Ear Problems	201	230	1,194	1,036	2,661	0.46	6

Contd...

TABLE 2.6(contd.)
HOSPITAL MORBIDITY CASES REPORTED FOR BHUTAN, 2002

Disease	(Number)						
	Under 5 years		5 years & older		Total	% CRO*	
	Male	Female	Male	Female			
Protein Energy Malnutrition	222	222	876	831	2,151	0.37	0
Menstrual Disturbances	0	0	0	1,768	1,768	0.31	2
Other Circulatory Diseases	36	37	746	763	1,582	0.28	2
Genital Ulcer(susp.STD)	3	2	488	790	1,283	0.22	2
Urethral Discharge(susp.STD)	6	7	779	407	1,199	0.21	0
Burns & Scalds	147	125	509	367	1,148	0.20	0
Other Disorders of Nervous System	9	20	524	523	1,076	0.19	2
Diseases of Breast	0	1	0	1,008	1,009	0.18	5
Rheumatic Heart Diseases	5	18	465	512	1,000	0.17	5
Motor Vehicle Injuries	20	14	624	273	931	0.16	6
Vaginal Discharge(susp.STD)	0	6	0	894	900	0.16	1
Cerebro-vascular Diseases	6	4	443	377	830	0.14	0
Epilepsy	18	21	471	309	819	0.14	4
Hepatitis(Jaundice)	78	56	351	246	731	0.13	3
Pelvic Inflammatory Disease	0	9	0	707	716	0.12	1
Diabetes	0	1	396	304	701	0.12	0
Other Mental Disorders	22	25	130	110	287	0.05	1
Cirrhosis	0	1	100	137	238	0.04	1
Cataract	1	2	126	98	227	0.04	0
Anxiety	0	0	64	99	163	0.03	1
Depression	1	0	58	98	157	0.03	0
Congenital deformities	4	7	106	40	157	0.03	1
Psychosis	0	2	72	58	132	0.02	1
Other Neoplasms	7	5	72	58	132	0.02	2
Gall Bladder Disease	1	1	46	49	97	0.02	0
Other Blood Disorders	1	0	20	24	45	0.01	0
Cervical Cancer	0	0	0	21	21	0.00	0
Meningitis/Encephalitis	0	2	6	6	14	0.00	0
Total	49,735	50,628	251,427	222,005	795,745	100.00	731

Note:

* CRO-Cases referred out

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.7
NUMBER OF PATIENTS REPORTED IN DIFFERENT HOSPITALS, 1997 TO 2001

Hospital	Persons('000)				
	1997	1998	1999	2000	2001
Government hospitals					
Bumthang	8.1	6.7	13.2	9.2	12.5
Geylegphug	15.2	18.6	52.6	45.9	59.8
Lhuntse	n.a	n.a	n.a	n.a	10.3
Mongar	n.a	n.a	n.a	n.a	23.2
Paro	25.0	24.0	22.2	21.1	25.8
Pemagatshel	7.5	8.2	15.3	12.0	15.6
Phuentsholing	39.0	79.2	19.9	58.2	60.0
Punakha	n.a	n.a	n.a	n.a	43.7
Samdrup Jongkhar	18.4	15.7	62.0	16.8	18.4
Samtse	17.1	15.9	37.5	19.3	35.9
Sarpang	16.6	12.9	21.9	15.4	27.8
Sibsoo	9.0	9.1	11.7	8.6	11.7
Tashi Yangtse	n.a	n.a	n.a	n.a	11.6
Thimphu	7.0	8.6	197.0	125.3	78.2
Trashigang	15.4	16.1	22.0	10.7	23.4
Trongsa	9.9	6.5	10.3	8.7	14.1
Tshimalakha	18.1	19.4	19.3	15.9	21.4
Tsirang	14.2	11.7	20.9	17.9	28.0

Contd...

TABLE 2.7(contd..)

NUMBER OF PATIENTS REPORTED IN DIFFERENT HOSPITALS, 1997 TO 2001

Hospital	Patients('000)				
	1997	1998	1999	2000	2001
Leprosy mission hospitals	40.2	47.8	70.9	47.1	52.9
Gidakom	9.9	9.4	14.6	9.6	5.2
Lhuntshi	6.2	6.3	9.4	8.1	10.3
Mongar	9.4	18.1	23.2	18.5	23.2
Riserboo	9.7	7.8	15.2	1.9	3.6
Yebilaptsa(Zhemgang)	5.0	6.2	8.5	9.0	10.6
Army hospitals					
Lungtenphug	n.a	n.a	n.a	n.a	n.a
Wangdiphodrang	34.3	40.1	15.9	14.5	16.7
Yonphula	11.6	13.1	n.a	n.a	n.a
Imtrat (Haa)	19.8	20.4	n.a	n.a	n.a
Others					
Dantak (Deothang)	n.a	17.6	n.a	n.a	18.3
IBFH (Thimphu)	64.3	46.7	n.a	n.a	n.a
Project hospitals					
Gomtu	24.0	25.0	33.1	25.7	30.4
Indigenous hospital	48.3	48.1	32.4	n.a	35.6
Indigenous dispensary	n.a	46.6	59.1	n.a	62.5
All hospitals(b)	728	916	634	262	649

Note:

Comparisons over time may be affected by different coverage in each year

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.8

EPI COVERAGE IN PERCENTAGE BY DZONGKHAG, 2002

Dzongkhag	BCG	MEASLES	DPT3	OPV3	HEPB3	TT2+
Bumthang	89	87	93	94	93	58
Chhukha	77	90	97	97	99	61
Dagana	79	93	91	89	91	47
Gasa	92	80	85	78	85	35
Haa	88	80	97	97	95	45
Lhuntse	94	91	91	91	91	64
Mongar	89	82	89	91	91	61
Paro	98	89	88	98	95	70
Pemagatshel	89	85	94	94	94	54
Punakha	96	89	94	94	95	89
Samdrup Jongkhar	93	82	87	90	90	51
Samtse	94	90	81	92	93	80
Sarpang	87	78	89	90	91	73
TashiYangtse	80	70	99	71	74	38
Thimphu	100	77	82	85	88	81
Trashigang	89	87	90	90	91	70
Trongsa	81	92	92	98	93	75
Tsirang	94	88	90	89	96	68
Wangdue Phodrang	89	99	96	99	97	74
Zhemgang	96	83	87	84	86	79
Bhutan	1,794	1712	1,812	1,811	1,828	1,273

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.9

INCIDENCE OF E.P.I DISEASES FOR CHILDREN BELOW AGE 15, BHUTAN,
1994 TO 1999

Year	1994	1995	1996	1997	1998	1999
Diphtheria	0	0	0	0	0	1
Deaths	0	0	0	0	0	0
Incidence	0	0	0	0	0	1
Measles	683	148	9	169	205	84
Deaths	0	0	0	0	0	0
Incidence	683	148	9	169	205	84
Pertussis	0	5	0	0	7	96
Deaths	0	0	0	0	0	0
Incidence	0	5	0	0	7	96
Poliomyelitis	0	0	0	0	0	0
Deaths	0	0	0	0	0	0
Incidence	0	0	0	0	0	0
Tetanus	0	0	0	0	0	1
Deaths	0	0	0	0	0	0
Incidence	0	0	0	0	0	1
Neonatal tetanus	2	0	0	0	0	1
Deaths	1	0	0	0	0	0
Incidence	1	0	0	0	0	1
Tuberculosis	311	274	3	10	342	625
Deaths	0	5	0	0	5	0
Incidence	311	269	3	10	337	625
All EPI diseases	996	427	12	179	554	1,615
Deaths	1	5	0	0	5	0
Incidence	995	422	12	179	549	1,615

Notes:

EPI stands for Expanded Program on Immunisation

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.10

DETAILS OF CHILD GROWTH MONITORING IN IMMUNIZATION CLINICS
BHUTAN, 1997 TO 2001

Details	1997	1998	1999	2000	2001
Children weighed(nos)	16,473	16,528	12,276	87,390	27,068
Child malnutrition(nos)	4,201	4,001	2,006	3,021	4,192
Degree I	2,965	2,940	616	2,336	2,261
Degree II	890	800	177	553	1,746
Degree III	346	261	23	132	185
Child malnutrition(%)	26	24	n.a	4	13.4

Source: "Annual Health Bulletin 2002", Department of Health Service, MoHE, Thimphu.

TABLE 2.11

DETAILS OF MATERNAL AND CHILD HEALTH CARE SERVICES, 1997 TO 2001

Type of care	1997	1998	1999	2000	2001
Maternal health care attendance(a)	54,053	19,860	66,159	66,626	68,719
Antenatal	44,692	10,516	45,611	44,166	47,351
Postnatal	9,361	9,344	20,548	22,460	21,368
Deliveries attended	9,361	9,344	7,117	7,040	n.a
Home	1,348	1,140	873	941	n.a
Hospital/Basic Health Units	5,083	3,777	6,244	6,099	6,028
Child health care attendance	n.a	n.a	104,931	n.a	6,028
First visit	n.a	n.a	n.a	n.a	107,211
Re-visit	n.a	n.a	n.a	n.a	15,776
Malnourished children (b)	n.a	4,261	2,023	3,153	4,377
All malnourished	n.a	4,001	2,006	3,021	4,192
Third degree	n.a	261	23	132	185

Notes:

(a) Refers to total attendance, not a comprehensive cases

(b) Children attending health units are classified according to three degrees of malnourishment;

Third degree malnourishment refers to the most severe cases.

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.12
DETAILS OF MATERNAL HEALTH CARE ACTIVITIES BY DZONGKHAG, 1997 TO 2001
(Number)

Dzongkhag	1997	1998	1999	2000	2001
Bumthang					
Antenatal	723	244	307	833	981
Postnatal	466	225	12	439	556
Reported deliveries	n.a	116	184	166	..
Trained deliveries	135	51	136	161	205
Chhukha					
Antenatal	6,451	1,617	1,976	8,178	7,083
Postnatal	1,561	1,496	61	3,608	3,007
Reported deliveries	n.a	690	755	813	..
Trained deliveries	720	643	688	733	632
Dagana					
Antenatal	560	281	258	463	549
Postnatal	415	315	44	453	599
Reported deliveries	n.a	118	92	122	..
Trained deliveries	174	61	78	114	60
Gasa					
Antenatal	55	47	39	53	81
Postnatal	13	19	5	10	9
Reported deliveries	n.a	15	19	13	..
Trained deliveries	3	11	22	13	21
Haa					
Antenatal	410	184	126	334	295
Postnatal	199	165	29	172	181
Reported deliveries	n.a	152	93	29	..
Trained deliveries	13	119	83	26	58
Lhuntse					
Antenatal	677	382	422	775	855
Postnatal	276	421	200	924	727
Reported deliveries	n.a	165	330	257	..
Trained deliveries	218	147	279	250	246
Mongar					
Antenatal	2,087	975	1,311	2,609	1,939
Postnatal	858	2,142	136	3,887	3,632
Reported deliveries	n.a	365	1,173	1,193	n.a
Trained deliveries	749	278	1,111	928	700

Contd...

TABLE 2.12 (contd.)
DETAILS OF MATERNAL HEALTH CARE ACTIVITIES BY DZONGKHAG, 1997 TO 2001
(Number)

Dzongkhag	1997	1998	1999	2000	2001
Trashigang					
Antenatal	1,825	1,026	801	2,562	2,389
Postnatal	747	705	105	1,471	969
Reported deliveries	n.a	642	780	793	..
Trained deliveries	393	506	706	762	556
Trashiyangtse					
Antenatal	504	260	227	622	818
Postnatal	144	108	14	449	510
Reported deliveries	n.a	69	171	113	..
Trained deliveries	34	57	131	93	132
Trongsa					
Antenatal	760	88	321	818	855
Postnatal	212	65	48	594	590
Reported deliveries	n.a	117	255	464	..
Trained deliveries	227	56	212	276	234
Tsirang					
Antenatal	759	315	332	1,202	1,015
Postnatal	332	368	7	534	283
Reported deliveries	n.a	69	111	81	..
Trained deliveries	107	69	98	81	37
Wangduephodrang					
Antenatal	1,640	706	563	2,075	2,361
Postnatal	572	578	90	1,597	2,111
Reported deliveries	n.a	347	464	454	..
Trained deliveries	251	251	358	393	655
Zhemgang					
Antenatal	1,230	530	450	652	1,566
Postnatal	375	113	26	1,229	557
Reported deliveries	n.a	167	318	178	..
Trained deliveries	360	127	298	186	322

Note:

Trained delivery refer to deliveries attended by trained health personnels in hospitals/BHUs and at home

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.13

DETAILS OF COMPLICATIONS DURING PREGNANCY, DELIVERY
AND PUERPERIUM, BHUTAN, 2002

Complications	Numbers	Percent
Pregnancy of mothers	2,577	100
Abortions	311	12.1
Antepartum haemorrhage	100	3.8
Hypertensive diseases	56	2.2
Anaemia	2,101	81.5
Hepatitis	n.a	n.a
Malaria	n.a	n.a
Others	9	0.3
Labour/delivery	240	18.1
Obstructed labour	100	12.7
Transverse lie	0.0	0.0
Breech	52	2.0
Ruptured uterus	2	0.1
Hypertensive diseases	11	0.4
Prematurity	34	1.3
Others	41	1.6
Puerperium	471	524.8
Postpartum haemorrhage	49	1.9
Retained Placenta	288	36.8
Pyrexia	10	0.4
PPH RP	113	14.3
Others	11	0.4
All complications	3,288	642.9

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu

TABLE 2.14

FAMILY PLANNING ACCEPTORS BY TYPE OF METHOD, BHUTAN, 1997 TO 2002

Method	1997	1998	1999	2000	2001	2002
Tubectomy	n.a	n.a	n.a	n.a	1,941	320
Vasectomy	74	4,451	6,835	8,204	9,884	1,230
Minilap	806	478	1,374	1,510	n.a	n.a
Intra uterine device(IUD)	1,582	1,977	2,549	1,582	2,881	836
Pills	6,483	7,104	3,697	4,227	6,126	n.a
Condoms	6,309	7,599	11,310	3,393	6,016	n.a
Injection DMPA	12,024	15,746	15,184	8,498	14,740	8,077
All methods	27,278	37,355	40,949	27,414	41,588	10,463

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.15

NUMBER OF USERS OF FAMILY PLANNING METHODS BY TYPE, BY
DZONGKHAG, 2001

Dzongkhag	Family planning methods						Total
	Vasec.	Tubec.	IUD	DMPA	Pills	Condom	
Bumthang	197	22	103	409	83	39	853
Chhukha	1,442	547	653	1,961	1,205	1,081	6,889
Dagana	282	13	26	673	680	640	2,314
Gasa	0	0	0	234	92	51	377
Haa	64	30	8	153	183	150	588
Lhuntse	309	23	96	560	106	71	1,165
Mongar	430	31	180	1,214	292	328	2,475
Paro	249	110	186	1,620	664	521	3,350
Pemagatshel	291	4	52	286	29	162	824
Punakha	331	171	61	477	108	94	1,242
Samdrup Jongkhar	1,285	116	127	862	260	338	2,988
Samtse	1,883	239	122	453	308	379	3,384
Sarpang	1,022	282	402	852	509	239	3,306
Thimphu	305	133	124	550	413	226	1,751
Trashigang	445	13	259	270	28	235	1,250
Trashigang	330	4	69	1,450	176	485	2,514
Trongsa	170	80	70	340	62	82	804
Tsirang	100	44	41	356	210	130	881
Zhemgang	356	66	225	785	220	125	1,777
Wangdue Phodrang	151	6	39	571	339	448	1,554
Bhutan	9,642	1,934	2,843	14,076	5,967	5,824	40,286

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.16

NUMBER OF BLOOD SLIDE EXAMINATIONS FOR MALARIA AND MALARIOMETRIC
INDICES, BHUTAN, 1996 TO 2000

Details	1996	1997	1998	1999	2000
Total blood films examined (numbers)	80,777	68,153	58,086	79,589	76,445
Blood film detected negative	n.a	n.a	n.a	n.a	n.a
Blood films detected positive	17,446	9,029	6,995	40,590	5,935
Plasmodium vivax	10,601	5,044	n.a	n.a	3,197
Plasmodium falciparum	6,845	3,614	n.a	n.a	2,738
Mixed infections	n.a	n.a	n.a	n.a	n.a
Malariometric indices					
Annual blood slide examination rate	23.1	19.4	n.a	n.a	22.0
Slide positive rate	22.0	13.2	12.0	n.a	8.0
Annual parasite incidence	49.8	25.7	n.a	n.a	17.0
Slide falciparum rate	8.5	5.3	n.a	n.a	4.0
Positive falciparum rate (%)	39.0	40.8	n.a	n.a	46.0
Deaths due to malaria (numbers)	n.a	n.a	n.a	n.a	15

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.17

NUMBER OF TUBERCULOSIS CASES BY TYPE, BHUTAN, 1993 TO 2000

Year	(Person)				Fertility Rate/ 1000 cases
	Cases diagnosed and treated				
	Pulmonary	Extra Pulmonary	Total cases	Total deaths	
1993	1,014	257	1,271	62	49
1994	942	329	1,271	51	40
1995	n.a	n.a	1,211	33	27
1996	924	368	1,292	55	43
1997	778	396	1,174	40	34
1998	777	363	1,140	25	22
1999	874	342	1,216	51	42
2000	758	293	1,051	41	39

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.18

WATER AND SANITATION FACILITY TYPE BY DZONGKHAG, 2001

Dzongkhag	(Number)				
	Percentage Coverage				
	Sanitary Latrine	Houses with piped water	Animal shed	Garbage pit	Smokeless Stove
Bumthang	94	94	63	86	94
Chhukha	76	59	24	39	42
Dagana	79	38	70	56	4
Gasa	89	43	89	82	10
Haa	94	93	39	42	77
Lhuntse	88	84	63	45	6
Mongar	87	68	62	51	7
Paro	81	73	33	55	59
Pemagatshel	81	89	67	36	0
Punakha	85	76	62	68	39
Samdrupjongkhar	89	69	63	51	14
Samtse	82	53	60	52	19
Sarpang	82	52	59	58	26
Shemgang	79	62	39	55	9
Thimphu	92	96	55	53	67
Trashigang	90	71	54	43	8
Trashiyangtse	90	76	74	44	2
Trongsa	87	82	85	64	27
Tsirang	80	67	85	45	27
Wangduephodrar	95	77	57	85	19
Bhutan	1,720	1,422	1,203	1,110	556

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

TABLE 2.19
NUMBER OF PATIENTS REFERRED OUTSIDE BHUTAN BY SEX AND
CASUALTIES, 1994/95 TO 2001/02

Year	(Number)				Total
	Recovered		Dead		
	Male	Female	Male	Female	
1994-95	126	114	2	1	3
1995-96	194	188	1	1	2
1996-97	215	201	2	..	2
1997-98	221	213	8	3	11
1998-99	292	238	8	7	15
1999-00	288	236	524	9	17
2000-01	298	286	584	3	9
2001-02	..	..	..	..	..
Total	1,634	1,476	1,129	24	59

Source: "Annual Health Bulletin 2002", Department of Health Services, MoHE, Thimphu.

CHAPTER 3: EDUCATION



The development of a comprehensive education system in Bhutan was initiated in 1961. Prior to that time there were virtually no modern education facilities inside Bhutan, apart from the traditional education given in the monasteries. Today there is an extensive network of Schools and other educational institutions spread throughout the country. The present formal educational structure consists of one-year pre-primary (PP), six years primary, two years Lower Secondary School, two years Middle Secondary School, two years Higher

Secondary School and three years degree programme.

Entry into the formal education system starts at the age of six when the children are admitted into preprimary classes. The medium of instruction in the schools is both Bhutan's National language 'Dzongkha' and English. School curricula also include training in traditional arts, crafts, and agriculture. Besides the modern education system, there is large number of traditional institutions offering education to children in monasteries, Drupdas and Shedras, for which data are not maintained by the Education Department. Non-formal education first began formally in 1992, although that existed in disorganized traditional forms earlier. The division of education maintains an extensive range of data on students; schools and teaching personnel and the summary data are presented in this chapter.

The gross Primary enrolment rate in 2003 was estimated at 81 %. There were 1,45,249 students enrolled in 426 schools/institute and 365 Non-formal education centers. Of 426 schools and institute only 18 were privately run while the rest was government run. In 2003, there were 90 community primary schools catering to small and far-flung communities. A community primary school is the basic level in primary school system, which caters to a specific community, a village or a cluster of defined villages. Number of Non Formal Education centers expanded from 6 in 1992 with 300 learners to 365 centers with 12838 learners in 2003. The NFE centers provide only basic literacy courses of reading and writing.

The size of enrolment was highest in Thimphu Dzongkhag followed by Trashigang, Chukha, Mongar and Paro. Many schools provide boarding facilities for students living in areas far from the nearest school. Children from communities who do not have their own schools enroll in the more distant school either as day scholar or as a boarder. This is made possible largely through the provision of meals through world Food Programme (WFP). In 2003, 26 community schools and 54 primary schools, 41 Lower Secondary Schools, 12 Middle Secondary Schools, 15 Higher Schools benefited from the WFP programme. A total of 20759 children studied as boarders in 2003.

TABLE 3.1
NUMBER OF SCHOOLS AND INSTITUTIONS, STAFF AND STUDENTS, BHUTAN, 2003

Details	CPS	PS	LSS	MSS	HSS	Pvt.	Other Inst.	NFE Centre	Total
Number of school and Institution	188	90	77	23	16	18	14	365	791
Teaching staff	592	701	1,388	623	466	235	313	428	4,746
National	586	679	1,178	426	287	154	239	428	3,977
Non-Bhutanese	6	22	210	197	179	81	74	0	769
Number of students	22,502	26,168	46,856	17,735	11,268	4,631	3,251	12,838	145,249
Male	11,949	13,850	23,968	9,319	6,388	2,363	..	4,164	..
Female	10,553	12,318	22,888	8,416	4,880	2,268	..	8,674	..
Student to teacher ratio	1:38	1:37	1:34	1:28	1:24	1:20	1:10	1:30	1:31

Note:

CPS-Community School, PS-Primary School, LSS-Lower Secondary School, MSS-Middle Secondary School,
HSS-Higher Secondary School, Pvt-Private School.

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.2
NUMBER OF EDUCATIONAL INSTITUTIONS, TEACHERS AND STUDENTS, BHUTAN,
1991 TO 2003

Year	Infrastructure			Teacher			Student		
	School	Inst.	Total	School	Inst.*	Total	School	Inst.*	Total
1991	244	8	252	2,153	184	2,337	50,412	1,693	52,105
1992	261	7	268	2,146	187	2,333	55,850	1,520	57,370
1993	267	7	274	2,084	197	2,281	62,138	1,524	63,662
1994	279	7	286	2,208	210	2,418	69,154	1,732	70,886
1995	281	7	288	2,224	199	2,423	75,504	1,772	77,276
1996	292	8	300	2,314	203	2,517	82,362	1,795	84,157
1997	302	10	312	2,242	293	2,535	90,378	1,889	92,267
1998	312	10	322	2,570	215	2,785	96,509	2,004	98,513
1999	333	10	343	2,632	224	2,856	102,746	2,124	104,870
2001	354	7	361	2,867	159	3,026	110,517	1,824	112,341
2002	397	11	408	3,668	282	3,950	123,283	3,096	126,379
2003	412	14	426	4,005	313	4,318	129,160	3,251	132,411

Note:

*Excludes NFE

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.3

NUMBER OF EDUCATIONAL FACILITIES BY TYPE AND DZONGKHAG, 2003

Dzongkhag	Pvt.	CPS	PS	LSS	MSS	HSS	Inst.	NFE	Total
Bumthang	1	11	1	2	1	1	n.a	22	39
Chhukha	2	14	4	6	4	2	1	10	43
Dagana	n.a	9	2	1	1	n.a	n.a	22	35
Gasa	n.a	3	n.a	1	n.a	n.a	n.a	2	6
Haa	n.a	1	3	3	n.a	1	n.a	11	19
Lhuntse	n.a	10	7	2	1	n.a	n.a	22	42
Mongar	n.a	22	10	5	n.a	2	n.a	22	61
Paro	1	4	2	8	1	1	1	18	36
Pemagatshel	n.a	9	3	3	1	1	n.a	17	34
Punakha	1	5	2	4	n.a	1	1	6	20
Samdrup Jongkhar	1	9	7	6	1	n.a	n.a	14	38
Samtse	n.a	5	3	4	2	n.a	1	18	33
Sarpang	2	7	2	2	2	n.a	2	19	36
Thimphu	10	7	6	8	4	1	4	19	59
Trashigang	n.a	31	12	10	2	2	3	40	100
Trashy Yangtse	n.a	12	5	1	1	1	1	25	46
Trongsa	n.a	11	3	3	1	n.a	n.a	23	41
Tsirang	n.a	3	2	1	n.a	1	n.a	14	21
Wangdue Phodrang	n.a	9	5	4	n.a	1	n.a	17	36
Zhemgang	n.a	6	11	3	1	1	n.a	24	46
Bhutan	18	188	90	77	23	16	14	365	791

Note:

CPS-Community School, PS-Primary School, LSS-Lower Secondary School,

MSS-Middle Secondary School, HSS-Higher Secondary School, Pvt-Private School.

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.4

NUMBER OF TEACHERS IN EDUCATIONAL INSTITUTIONS BY NATIONALITY, BHUTAN, 2002 TO 2003

Institution	2002			2003		
	Bht	N/Bht	Total	Bht	N/Bht	Total
Schools	3000	668	3668	3310	695	4005
Community Primary	527	2	529	586	6	592
Primary	724	31	755	679	22	701
Lower Secondary	948	205	1153	1178	210	1388
Middle Secondary School	456	214	670	426	197	623
Higher Secondary School	201	145	346	287	179	466
Private School	144	71	215	154	81	235
Specialised/Professional Institutes	472	66	538	453	238	691
Sherubtse College	19	40	59	23	39	62
National Institute of Education, Paro	24	5	29	25	7	32
National Institute of Education, Samtse	49	1	50	51	3	54
Institute of Language and Cultural Affairs	26	1	27	22	2	24
Dhoban Sanskrit Patshala	2	..	2	1	..	1
Survey Sanskrit Patshala	2	..	2	1	..	1
National Institute for the Disabled (NID)	7	1	8	7	1	8
Institute for Zorig Chusum	22	..	22	10	1	11
Royal Bhutan Institute of Technology	58	18	76	39	20	59
Rigney Institute(Tyangtse)	7	..	7	11	..	11
Non Formal Education Programme	256	..	256	263	165	428
Total	3472	734	4206	3763	933	4696

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.5
NUMBER OF EDUCATIONAL FACILITIES AND STUDENTS BY
DZONGKHAG, 2003

Dzongkhag	Educational facilities	Student		
		Total	Girl	Boy
Bumthang	17	3,992	1,935	2,057
Chhukha	32	12,720	5,958	6,762
Dagana	13	3,040	1,435	1,605
Gasa	4	488	229	259
Haa	8	3,203	1,590	1,613
Lhuntse	20	3,339	1,582	1,757
Mongar	39	8,008	3,619	4,389
Paro	17	7,697	3,853	3,844
Pemagatshel	17	3,920	1,693	2,227
Punakha	13	4,928	2,448	2,480
Samdrup Jongkhar	24	7,697	3,456	4,241
Samtse	14	6,929	3,061	3,868
Sarpang	15	7,063	3,363	3,700
Thimphu	36	21,807	11,034	10,773
Trashigang	57	12,729	5,833	6,896
Trashy Yangtse	20	4,292	1,976	2,316
Trongsa	18	3,259	1,616	1,643
Tsirang	7	3,296	1,511	1,785
Wangdue Phodrang	19	6,073	3,056	3,017
Zhemgang	22	4,680	2,075	2,605
Bhutan	412	129,160	61,323	67,837

Note:

In the above table, the Institutes and NFE centres are excluded though they fall under educational facilities

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.6
NUMBER OF ENROLMENT IN EDUCATIONAL INSTITUTIONS, 2002 TO 2003

Institutions	2002	2003
Schools	123283	129160
Community	20978	22502
Primary	28849	26168
Lower Secondary	41985	46856
Middle Secondary	19194	17735
Higher Secondary	8464	11268
Private	3813	4631
Other institutions	3096	3251
National Institute for the Disabled (NID)	37	35
National Institute of Education, paro	633	656
National Institute of Education, Samtse	381	344
National Institute of Zorig Chusum, Kawajangsa	139	122
Royal Bhutan Institute of Technology	560	429
Sherubtse college	625	828
Dhoban Sanskrit patsala	35	13
Jigmecholing (Surey) Sanskrit patshala	n.a	30
Trashiyangtse Institute of Zorigchusum	46	52
Construction Training Centre, kawajangsa	n.a	234
Institute of Language and Culutural Affairs	225	225
Vocational Training Institute, Khuruthang	n.a	72
Vocational Training Institute, Ranngjung	n.a	112
Vocational Training Institute, Samthang	n.a	99
Non-formal Education Centres	9798	12838

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.7

NUMBER OF STUDENTS IN HIGH SCHOOLS AND BELOW BY DZONGKHAG AND TYPE OF SCHOOL, 2002

Dzongkhag	Private school			Community school			Primary school		
	Boy	Girl	Total	Boy	Girl	Total	Boy	Girl	Total
Bumthang	60	27	87	423	481	904	89	89	178
Chhukha	392	368	760	1,164	1,008	2,172	826	607	1,433
Dagana	0	0	0	522	483	1,005	229	238	467
Gasa	0	0	0	97	83	180	0	0	0
Haa	0	0	0	22	21	43	782	794	1,576
Lhuntse	0	0	0	306	267	573	794	617	1,411
Mongar	0	0	0	1,554	1,264	2,818	955	718	1,673
Paro	0	0	0	275	266	541	623	578	1,201
Pemagatshel	0	0	0	494	408	902	279	200	479
Punakha	0	0	0	161	166	327	1,051	1,037	2,088
Samtse	0	0	0	670	456	1,126	1,271	901	2,172
Samdrup Jongkhar	0	0	0	138	70	208	832	569	1,401
Sarpang (a)	0	0	0	1,084	954	2,038	1,026	950	1,976
Thimphu	1,088	1,005	2,093	183	153	336	2,351	2,213	4,564
Trashigang				1,500	1,165	2,665	1,775	1,321	3,096
Trashy Yangtse	0	0	0	387	354	741	517	434	951
Trongsa	0	0	0	369	321	690	595	598	1,193
Tsirang	0	0	0	379	246	625	182	148	330
Wangdue Phodrang	0	0	0	364	339	703	1,006	924	1,930
Zhemgang	0	0	0	169	165	334	1,441	1,150	2,591
Bhutan	1,540	1,400	2,940	10,261	8,670	18,751	16,624	14,086	30,710

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.7(contd.)

NUMBER OF STUDENTS IN HIGH SCHOOLS AND BELOW BY DZONGKHAG AND TYPE OF SCHOOL, 2002

Dzongkhag	High school			All school		
	Boy	Girl	Total	Boy	Girl	Total
Bumthang	645	663	1,308	590	508	1,098
Chhukha	1,929	1,691	3,620	1,989	1,633	3,622
Dagana	300	271	571	208	168	376
Gasa	113	97	210	..	..	..
Haa	373	364	737	425	414	839
Lhuntse	354	307	661	345	203	548
Mongar	1,220	983	2,203	605	334	939
Paro	1,943	1,975	3,918	963	938	1,901
Pemagatshel	1,077	787	1,864	297	182	479
Punakha	530	526	1,056	480	302	782
Samtse	1,578	1,074	2,652	533	512	1,045
Samdrupjongkhar	1,327	985	2,312	622	599	1,221
Sarpang (a)	332	294	626	684	513	1,197
Thimphu	5,129	5,098	10,227	1,332	1,401	2,733
Trashigang	2,307	2,089	4,396	1,019	638	1,657
Trashiyangtse	599	425	1,024	519	438	957
Trongsa	425	410	835	254	180	434
Tsirang	551	513	1,064	320	225	545
Wangduephodrang	1,475	1,517	2,992	257	223	480
Zhemgang	581	415	996	374	217	591
Bhutan	22,788	20,475	43,263	11,816	9,628	21,444

Note:

(a) Total figure excludes 60 students of Surrey Sanskrit Patsala

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.8
NUMBER OF STUDENTS BY GRADE AND TYPE OF SCHOOL, BHUTAN, 2003

Grade	Private			Community Pry.			Lower Secondary		
	Boy	Girl	Total	Boy	Girl	Total	Boy	Girl	Total
Nursery	243	230	473	..	..	..	..	..	..
Pre primary	287	285	572	2,533	2,398	4,931	2,460	2,491	4,951
I	198	185	383	2,564	2,243	4,807	2,604	2,526	5,130
II	112	106	218	1,973	1,814	3,787	2,615	2,437	5,052
III	98	89	187	1,667	1,482	3,149	2,690	2,535	5,225
IV	67	61	128	1,409	1,171	2,580	2,670	2,555	5,225
V	46	52	98	1,050	849	1,899	2,455	2,450	4,905
VI	29	40	69	682	596	1,278	72,516	2,360	74,876
VII	2	6	8	..	..	..	3,408	3,271	6,679
VIII	8	4	12	..	..	..	2,536	2,263	4,799
IX	..	..	..	..	..	..	..	..	..
X	18	14	32	..	..	..	..	..	..
XI	627	613	1,240	..	..	..	..	..	..
XII	628	583	1,211	..	..	..	..	..	..
Total	2,365	2,258	4,623	11,878	10,553	22,431	88,902	22,888	111,790

Contd...

TABLE 3.8(contd.)
NUMBER OF STUDENTS BY GRADE AND TYPE OF SCHOOL, BHUTAN, 2003

Grade	Middle Secondary			Higher Secondary		
	Boy	Girl	Total	Boy	Girl	Total
Nursery	..	..	..	..	..	..
Pre primary	635	563	1,198	71	65	136
I	579	592	1,171	47	48	95
II	616	558	1,174	38	40	78
III	586	512	1,098	37	38	75
IV	592	555	1,147	61	36	97
V	475	458	933	26	37	63
VI	472	478	950	26	30	56
VII	935	991	1,926	202	278	480
VIII	961	850	1,811	219	273	492
IX	2,076	1,782	3,858	1,724	1,659	3,383
X	1,392	1,077	2,469	1,511	1,284	2,795
XI	..	..	..	1,180	571	1,751
XII	..	..	..	1,081	521	1,602
Total	9,319	8,416	17,735	6,223	4,880	11,103

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.9
NUMBER OF STUDENTS BY GRADE, 2000 TO 2003

Grade	2000	2001	2002	2003
Primary grade	81,150	88,382	44,958	93,841
Pre-primary	15,818	15,166	15,604	15,977
I	14,258	15,006	14,828	15,517
II	13,324	13,846	14,526	14,268
III	12,240	12,494	12,947	13,616
IV	11,389	12,253	12,594	12,939
V	9,712	10,255	10,954	11,251
VI	4,409	9,392	9,491	10,273
Junior high grade	18,734	15,128	15,988	16,207
VI(a)	4,305	n.a	n.a	n.a
VII	7,999	8,439	8,859	9,093
VIII	6,430	6,689	7,129	7,114
High school grade	8,872	10,508	11,423	12,537
IX	5,506	5,890	6,613	7,241
X	3,366	4,618	4,810	5,296
Higher secondary school		2,719	4,432	5,804
XI	..	1,631	2,749	2,991
XII	..	1,088	1,683	2,813
Total students	108,756	105,353	72,369	122,585

Note:

High school excludes students of class XI and XII; excludes private schools
(a) grade vi is in junior level as well. Figures now included under primary level.

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.10
NUMBER OF STUDENTS ENROLED, PROMOTERS, REPEATERS AND
DROPOUTS BY SEX AND GRADE, 2003

Details	All students	Enrolment	Promoters	Dropouts
PP	15,991	13,673	1,993	(62)
I	15,569	12,551	1,896	381
II	14,313	12,238	1,762	526
III	13,616	11,149	1,378	420
IV	12,939	10,050	1,790	754
V	11,273	9,177	1,223	554
VI	10,273	7,972	1,096	423
VII	9,161	6,881	1,189	789
VIII	7,185	6,355	304	470
IX	7,241	5,209	886	518
X	5,296	2,963	87	1,760
Total	122,857	98,218	13,604	6,533

Note:

Promotees and dropout figures are imputations

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.11

MONTHLY STIPEND FOR BOARDERS IN SCHOOLS/INSTITUTIONS, 2003

School/Institute	Boarders (persons)	Monthly stipend (Nu/person)	Total (Nu.)
Lower/Middle Secondary School	4038	3600	7268400
Bidung Lower Secondary School	194	180	349200
Chapchha Middle Secondary School	359	180	646,200
Chhumey Middle Secondary School	240	180	432,000
Daga Middle Secondary School	335	180	603000
Dremetse Lower Secondary School	195	180	351000
Drujeygang Lower Secondary School	202	180	363,600
Gasa Lower Secondary School	38	180	68400
Khuruthang Lower Secondary School	327	180	588,600
Lhuentse Lower Secondary School	80	180	144,000
Martshala Lower Secondary School	226	180	406,800
Nobding Lower Secondary School	150	180	270000
Panbang Lower Secondary School	34	180	61200
Paro Lower Secondary School	155	180	279,000
Pemagatshel Middle Secondary School	181	180	325,800
Samtengang Lower Secondary School	130	180	234,000
Thungkhar Lower Secondary School	163	180	293400
Trashigang Middle Secondary School	156	180	280,800
Tsenkharla Middle Secondary School	389	180	700,200
Yebilaptsha Middle Secondary School	364	180	655,200
Yurung Lower Secondary School	120	180	216,000

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.11(contd.)

MONTHLY STIPEND FOR BOARDERS IN SCHOOLS/INSTITUTIONS, 2003

School/Institute	Boarders (persons)	Monthly stipend (Nu/person)	Total (Nu.) 10 Months
High schools	5973	2340	10751400
Bajothang Higher Secondary School	300	180	540000
Bjkar Higher Secondary School	326	180	586800
Bunarangjung Higher Secondary School	393	180	707400
Chhukha Higher Secondary School	376	180	676800
Damphu Higher Secondary School	420	180	756000
Drugyel Higher Secondary School	399	180	718200
Gyelpozhing Higher Secondary School	663	180	1193400
Jigme Sherubling Higher Secondary School	599	180	1078200
Mongar Higher Secondary School	329	180	592200
Nangkhor Higher Secondary School	399	180	718200
Punakha Higher Secondary School	608	180	1094400
Ugyen Dorji Higher Secondary School	545	180	981000
Zhemgang Higher Secondary School	616	180	1108800
Other institutions	1913	5280	15754300
Sherubtse College	568	700	3976000
Royal Bhutan Institute of Technology	429	700	300300
Inst. for Language & Cultural Studies	225	700	1575000
NIE, Samtse	328	1500	4920000
NIE, Paro	328	1500	4920000
National Institute for the			
Disabled (NID)	35	180	63000

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

TABLE 3.12

NUMBER AND EDUCATIONAL LEVELS OF TEACHERS IN THE SCHOOLS
AND INSTITUTES, 2003

Education Level	CPS	PS	LSS	MSS	HSS	Pvt.	Total
All Teachers	593	701	1388	623	466	235	4006
Trained	579	683	1313	555	424	161	3715
Untrained	14	18	75	68	42	74	291
Masters	4	0	58	113	111	55	341
Trained	0	0	44	91	90	49	274
Untrained	4	0	14	22	21	6	67
Bachelors	2	23	167	163	185	45	585
Trained	1	7	118	124	173	28	451
Untrained	1	16	49	39	12	17	134
Higher Sec./Matric	424	472	827	245	103	84	2155
Trained	418	470	817	238	94	43	2080
Untrained	6	2	10	7	9	41	75
Under Matric	35	51	81	9	1	11	188
Trained	35	51	81	9	1	6	183
Untrained	0	0	0	0	0	5	5
ZLT	128	155	258	93	66	40	737
Trained	125	155	253	93	66	35	727
Untrained	3	0	2	0	0	5	10

Note:

CPS-Community School, PS-Primary School, LSS-Lower Secondary School,

MSS-Middle Secondary School, HSS-Higher Secondary School, Pvt-Private School.

Source: "General Statistics 2003", Policy & Planning Division, MoE, Thimphu.

CHAPTER 4: HUMAN RESOURCES



The economy of Bhutan is characterized by the predominance of people engaged in self-employment, particularly those working on their own land. There is also a good deal of small cottage industry often undertaken in the home. The number of person working for wages is relatively small. Statistics on human resources are designed to measure the involvement of people in economic activities. Economic activities refer to the production of economic goods and services and include the people who are self-employed (e.g. farmers operating their own land) as well as persons who work for wages (i.e. employees). Broadly, a statistical system for human resources should cover topics such as size and characteristics of the labor force, employment, wage rate and conditions of work. Labor statistics usually presented in this chapter are from sample surveys and the national Labor Force Survey conducted annually since 1998. The National Statistical Bureau conducted the two consecutive Labor Force Surveys in 1998 and 2000. The Department of Employment and Labour conducted the third round of Labor Force Survey in 2001 since its creation in 2000.

Although Share of primary sector in GDP is gradually decreasing, agriculture is still the predominant sector providing employment to around 75% of the labor force. Labor force is marred by high dependency ratio of around 70%. Younger age dependency ratio of 61.4%, besides having a momentary burden yet promises of an expanding work force for the future on the other hand. The old dependency ratio of 9% is an indication of growing number of old age people that'll have a bearing on the socio economic condition in the future. The private sector is emerging as the important sector generating employment opportunities for increasing labor market. Unemployment rate in 1999 was estimated to around 1.4 %. It was also observed that 68% of all the unemployed were those in ages between 15 and 29.

TABLE 4.1
PERCENTAGE OF POPULATION ACCORDING TO ECONOMIC ACTIVITY BY
AGE AND SEX, 1984

Age group	Agriculture	Service	Business	Others	Occupation
Male					
Less than 15	7.0	..	..	1.0	92.0
15-19	54.7	2.0	..	3.5	39.7
20-24	70.9	11.1	1.5	4.0	12.5
25-29	76.7	13.8	2.0	4.4	3.1
30-34	82.0	11.1	1.7	4.3	0.8
35-39	84.4	7.7	2.4	4.7	..
40-44	87.7	5.9	2.3	3.6	..
45-54	90.5	3.3	1.6	3.6	1.0
55-64	88.1	1.0	0.9	4.0	6.0
65 and over	71.1	1.5	..	0.9	26.0
All ages	52.5	3.9	0.9	2.8	39.9
Age 15-64	78.4	6.5	1.4	4.0	9.6
Female					
Less than 15	9.2	..	..	0.2	90.7
15-19	87.8	..	..	0.4	11.0
20-24	95.7	1.0	1.1	..	2.1
25-29	98.0	..	..	..	0.7
30-34	98.4	..	..	..	..
35-39	99.1	..	..	..	..
40-44	99.2	..	..	..	..
45-54	98.4	..	..	..	1.2
55-64	91.1	..	..	..	8.5
65 and over	73.2	..	..	..	26.1
All ages	61.5	0.3	0.3	0.2	37.8
Age 15-64	95.4	0.4	0.5	0.2	3.6
Total persons					
Less than 15	8.2	..	..	0.6	91.3
15-19	72.4	1.2	..	1.9	24.4
20-24	83.9	5.8	1.3	2.0	7.0
25-29	88.0	6.8	1.1	2.2	1.8
30-34	90.8	5.4	1.1	2.1	0.6
35-39	91.7	3.9	1.4	2.5	0.5
40-44	93.5	3.0	1.4	1.9	..
45-54	94.4	1.7	1.0	1.9	1.1
55-64	89.6	0.6	0.6	2.0	7.2
65 and over	72.1	1.0	..	0.5	26.0
All ages	57.2	2.0	0.6	1.4	38.8
Age 15-64	87.2	3.4	0.9	2.0	6.5

Source: Demographic Sample survey, CSO, Thimphu.

TABLE 4.2
EMPLOYMENT IN CIVIL SERVICE, BHUTAN, 1999 TO 2003

Ministry/Division	1999	2000	2001	2002*	2003**
All Ministries	12,587	12,245	13,119	12,906	14,224
Ministry of Agriculture	2,401	2,457	2,399	2,445	2,493
Ministry of Communications	1,385	1,286	1,278	1,267	287
Ministry of Education	..	..	..	..	5,112
Ministry of Home & Cultural affairs	1,556	1,143	1,382	1,498	1,764
Home & Cultural Affairs	387	349	458	499	614
Dzongkhags	1,169	794	924	999	1,150
Ministry of Finance	608	602	636	624	664
Ministry of Foreign Affairs	109	122	112	109	121
Ministry of Health	..	..	..	..	1,954
Ministry of Health & Education	5,409	5,504	6,135	6,436	..
Ministry of Labour & Human Resources	..	..	..	..	221
Ministry of Trade & Industry	1,119	1,131	1,177	527	468
Ministry of Works & Human Settlement	..	..	..	..	1,140
Other Non-Ministerial Organization	1,058	1,098	1,365	1,359	826
His Majesty's Secreteriat	47	48	37	33	33
Dratshang Lhentshog	..	..	26	26	28
National Assembly	15	17	20	23	22
Cabinet Secreteriat	6	9	9	9	7
Royal Civil Service Commission	47	48	45	44	39
Royal Court of Justice	..	..	..	..	296
Centre for Bhutan Studies	..	..	..	10	11
Bhutan Olympic Committ	20	21	19	8	9
Office of the Legal Affairs	..	..	..	12	13
National Environment Commission	29	33	37	37	37
Royal Institute of Management	88	111	109	89	71
Royal Audit Authority	134	134	143	139	141
Royal University of Bhutan	..	..	..	..	5
National Pension and Provident Fund Bureau	..	..	1	1	1
Planning commission Secreteriat	48	45	56	54	..
Royal Advisory Council	18	16	15	15	15
National Commission for Cultural Affairs	139	128	104	108	..

Contd...

TABLE 4.2(Contd.)
EMPLOYMENT IN CIVIL SERVICE, BHUTAN, 1999 TO 2003

Ministry/Division	1999	2000	2001	2002*	2003**
Other Non-Ministerial Organization	1,058	1,098	1,365	1,359	826
National Women's Association of Bhutan	1	..	..	..	..
National Technical Training Authority	141	161	178	191	..
Judiciary	274	272	286	276	..
Dzongkhag Development Commission	17	23	24	23	..
Royal Monetary Authority	..	..	2	..	..
Department of Legal Affairs	11	11	13	..	..
Centre for Bhutan Studies	8	8	8	..	..
National Employment Board	9	13	17	22	..
Corporations	..	..	..	..	38
Financial Institutes (Corporations)	..	..	..	..	3
Defence	..	..	..	..	23
Others	6	..	216	239	34
All Civil Servants	13,645	13,343	14,484	14,265	15,050
Seconded to Intl., Corporations, Private Organizations	..	..	..	..	46
GSC & ESP Personnel(Number of Approved Posts)	..	..	..	..	..
Corporations/ Agencies outside the civil service	..	..	..	..	2,151

Note:

*As of 31 September 2002. ** As of 31 September 2003.

Source: Royal Civil Service Commission, Thimphu.

TABLE 4.3
PERCENTAGE OF POPULATION AGED 15 YEARS AND OVER BY SEX AND PRINCIPLE ECONOMIC ACTIVITY IN THIMPHU AND PHUNTSHOLING TOWNS, 1991

Economic Activity	Male		Female		Total	
	Person	%	Person	%	Person	%
Thimphu Town						
All persons 15 years & over	5,350	100.0	4,410	100.0	9,760	100.0
All persons not employed	1,250	23.4	2,330	52.9	3,580	76.3
All persons employed	4,110	76.8	2,080	47.2	6,190	124.0
Agriculture	280	5.2	850	19.3	1,130	24.5
Self employed	..	..	530	19.8	530	19.8
Paid or unpaid employee	230	4.3	..	..	230	4.3
Non Agro organised business	3,780	70.7	1,220	27.7	5,000	98.4
Self employed	720	13.5	210	4.8	930	18.3
Paid or unpaid employee	3,070	57.4	1,020	23.2	4,090	80.6
Cottage activities	..	..	600	13.6	600	13.6
Phuntsholing Town						
All persons 15 years and over	1,970	100.0	2,120	100.0	4,090	100.0
All persons not employed	270	13.7	1,150	54.2	1,420	67.9
All persons employed	1,700	86.5	970	45.8	2,670	132.3
Agriculture	150	7.6	330	15.6	480	23.2
Self employed	..	..	330	15.6	330	15.6
Paid or unpaid employee	..	..	..	..	147	..
Non Agro organised business	1,500	76.3	270	12.7	1,770	89.0
Self employed	220	11.2	..	..	220	11.2
Paid or unpaid employee	1,280	65.1	220	10.4	1,500	75.5
Cottage activities	..	..	380	17.9	380	17.9

Note:

Preliminary estimates

Source: Household Income and Expenditure Survey, CSO, Ministry of Planning, Thimphu.

TABLE 4.4
PERCENT DISTRIBUTION OF EMPLOYED AND UNEMPLOYED PERSONS
AGE, SEX AND REARESIDENCE, BHUTAN, 1998

Age group	Employed			Unemployed		
	Total	Urban	Rural	Total	Urban	Rural
Both sexes	100.0	13.3	86.7	100.0	37.2	62.8
15-19	10.8	0.6	10.2	20.4	5.9	14.5
20-24	12.6	1.7	10.8	25.1	9.6	15.5
25-29	13.3	2.9	10.4	13.1	6.9	6.2
30-34	11.7	2.4	9.3	10.5	4.5	6.1
35-39	10.8	2.0	8.8	13.0	3.3	9.7
40-44	9.7	1.4	8.3	4.1	1.8	2.3
45-49	8.5	1.0	7.4	4.1	3.2	0.9
50-54	8.1	0.5	7.5	4.8	0.5	4.4
55-59	6.1	0.3	5.8	4.4	1.0	3.4
60-64	4.7	0.2	4.5	0.5	0.5	0.0
65+	3.8	0.1	3.7	0.0	0.0	0.0
Male	55.8	9.8	46.0	55.6	14.7	40.9
15-19	4.8	0.3	4.5	9.4	2.3	7.2
20-24	6.3	1.0	5.3	17.5	3.4	14.0
25-29	6.8	2.0	4.8	6.4	2.5	3.9
30-34	6.9	1.9	5.0	4.8	1.6	3.3
35-39	6.4	1.6	4.9	8.1	1.6	6.5
40-44	5.4	1.1	4.3	2.1	0.8	1.3
45-49	5.0	0.9	4.2	2.0	1.2	0.9
50-54	4.7	0.4	4.2	1.1	0.3	0.9
55-59	3.8	0.3	3.5	3.8	0.7	3.1
60-64	3.0	0.1	2.9	0.3	0.3	0.0
65+	2.6	0.1	2.4	0.0	0.0	0.0
Female	44.2	3.5	40.8	44.4	22.5	21.9
15-19	6.0	0.3	5.7	11.0	3.6	7.4
20-24	6.3	0.7	5.6	7.6	6.2	1.4
25-29	6.4	0.9	5.6	6.6	4.3	2.3
30-34	4.8	0.6	4.3	5.7	2.9	2.8
35-39	4.4	0.4	4.0	4.9	1.7	3.2
40-44	4.3	0.3	4.0	2.0	1.1	1.0
45-49	3.4	0.2	3.3	2.1	2.1	0.0
50-54	3.4	0.1	3.3	3.7	0.2	3.5
55-59	2.3	0.1	2.3	0.5	0.3	0.3
60-64	1.7	0.0	1.6	0.2	0.2	0.0
65+	1.3	0.0	1.3	0.0	0.0	0.0

Source: National Labour Force Survey 1998 and 1999, Bhutan.

TABLE 4.5
PERCENTAGE DISTRIBUTION OF EMPLOYED PERSONS BY AGE, SEX AND
AREA OF RESIDENCE, BHUTAN, 1999

Age group	Employed			Unemployed		
	Total	Urban	Rural	Total	Urban	Rural
Both sexes	100.0	11.0	89.0	100.0	26.2	73.8
15-19	7.2	0.4	6.8	18.9	5.8	13.1
20-24	9.1	1.3	7.8	30.5	8.4	22.1
25-29	8.3	2.4	6.0	18.9	4.7	14.2
30-34	6.5	2.1	4.4	3.5	2.3	1.2
35-39	6.1	1.8	4.3	3.4	2.0	1.4
40-44	5.3	1.1	4.1	5.1	1.3	3.8
45-49	5.0	0.9	4.1	11.7	0.8	10.9
50-54	3.1	0.4	2.6	4.4	0.8	3.6
55-59	3.1	0.3	2.9	2.1	0.0	2.1
60-64	1.3	0.1	1.1	1.4	0.1	1.3
65+	1.4	0.1	1.3	0.0	0.0	0.0
Male	54.5	7.7	46.8	47.1	10.4	36.7
15-19	5.6	0.2	5.4	5.2	2.2	2.9
20-24	6.6	0.7	5.9	14.6	3.8	10.8
25-29	6.8	1.5	5.2	9.1	1.6	7.4
30-34	5.8	1.5	4.3	2.0	0.8	1.2
35-39	5.4	1.3	4.1	0.8	0.8	0.0
40-44	5.6	0.9	4.7	2.5	0.3	2.2
45-49	4.7	0.8	4.0	9.6	0.3	9.4
50-54	4.3	0.3	4.0	3.2	0.5	2.7
55-59	4.1	0.2	3.9	0.0	0.0	0.0
60-64	3.0	0.1	2.9	0.0	0.0	0.0
65+	2.6	0.1	2.5	0.0	0.0	0.0
Female	45.5	3.3	42.2	52.9	15.8	37.2
15-19	6.8	0.3	6.5	13.7	3.6	10.1
20-24	7.8	0.6	7.2	15.9	4.6	11.3
25-29	6.0	0.8	5.2	9.8	3.0	6.8
30-34	4.4	0.6	3.8	1.5	1.5	0.0
35-39	4.3	0.5	3.9	2.6	1.2	1.4
40-44	4.1	0.2	3.9	2.6	1.0	1.7
45-49	4.1	0.2	3.9	2.1	0.5	1.6
50-54	2.6	0.1	2.6	1.2	0.3	0.9
55-59	2.9	0.1	2.8	2.1	0.0	2.1
60-64	1.1	0.0	1.1	1.4	0.1	1.3
65+	1.3	0.0	1.3	0.0	0.0	0.0

Source: National Labour Force Survey 1998 and 1999, Bhutan.

TABLE 4.6
PERCENT DISTRIBUTION OF ECONOMICALLY ACTIVE AND INACTIVE POPULATION
BY AGE, AREA OF RESIDENCE AND PARTICIPATION RATE, BHUTAN 1998

Age group	Total Percent	Economi- cally Inactive	Economically active population		Rate		
			Employed	Unemployed	LFPR	Employ- ment Rate	Unemploy- ment Rate
Both areas	100.0	41.1	58.1	0.8	58.9	98.6	1.4
15-19	17.0	10.6	6.3	0.2	37.8	97.5	2.5
20-24	13.2	5.7	7.3	0.2	56.7	97.3	2.7
25-29	11.2	3.3	7.7	0.1	70.1	98.6	1.4
30-34	9.3	2.4	6.8	0.1	74.2	98.8	1.2
35-39	8.6	2.2	6.3	0.1	74.3	98.4	1.6
40-44	7.8	2.1	5.6	0.0	72.8	99.4	0.6
45-49	7.1	2.1	4.9	0.0	70.2	99.3	0.7
50-54	6.9	2.2	4.7	0.0	68.6	99.2	0.8
55-59	5.8	2.2	3.6	0.0	62.4	99.0	1.0
60-64	5.2	2.5	2.7	0.0	52.5	99.8	0.2
65+	8.0	5.8	2.2	0.0	28.0	99.5	0.5
Urban	14.9	6.9	7.7	0.3	53.9	96.2	3.8
15-19	2.5	2.1	0.4	0.0	16.1	88.2	11.8
20-24	2.3	1.3	1.0	0.1	46.1	92.8	7.2
25-29	2.7	1.0	1.7	0.1	63.6	96.8	3.2
30-34	2.1	0.7	1.4	0.0	68.1	97.5	2.5
35-39	1.7	0.5	1.1	0.0	69.8	97.7	2.3
40-44	1.2	0.3	0.8	0.0	72.3	98.2	1.8
45-49	0.9	0.2	0.6	0.0	72.2	95.9	4.1
50-54	0.5	0.2	0.3	0.0	64.7	98.8	1.2
55-59	0.3	0.1	0.2	0.0	61.7	96.2	3.8
60-64	0.3	0.2	0.1	0.0	34.7	95.3	4.7
65+	0.4	0.3	0.1	0.0	21.9	98.7	1.3
Rural	85.1	34.2	50.4	0.5	59.8	99.0	1.0
15-19	14.5	8.5	5.9	0.1	41.5	98.1	1.9
20-24	10.9	4.5	6.3	0.1	59.0	98.1	1.9
25-29	8.4	2.3	6.0	0.0	72.2	99.2	0.8
30-34	7.2	1.7	5.4	0.0	76.1	99.1	0.9
35-39	6.9	1.7	5.1	0.1	75.4	98.5	1.5
40-44	6.6	1.8	4.8	0.0	72.9	99.6	0.4
45-49	6.2	1.9	4.3	0.0	69.9	99.8	0.2
50-54	6.4	2.0	4.4	0.0	68.9	99.2	0.8
55-59	5.4	2.0	3.4	0.0	62.4	99.2	0.8
60-64	4.9	2.3	2.6	0.0	53.3	100.0	0.0
65+	7.6	5.5	2.1	0.0	28.3	99.6	0.4

Source: National Labour Force Survey 1998 and 1999, Bhutan.

TABLE 4.7
PERCENT DISTRIBUTION OF ECONOMICALLY ACTIVE AND INACTIVE POPULATION
BY AGE, AREA OF RESIDENCE AND PARTICIPATION RATE, BHUTAN 1999

Age group	Total Percent	Economi- cally Inactive	Economically active population		Rate		
			Employed	Unemployed	LFPR	Employ- ment Rate	Unemploy- ment Rate
Both areas	100.0	30.4	68.7	1.0	69.6	98.6	1.4
15-19	18.1	9.4	8.5	0.2	48.0	97.9	2.1
20-24	14.6	4.4	9.9	0.3	69.9	97.1	2.9
25-29	10.9	2.0	8.7	0.2	82.0	97.7	2.1
30-34	8.6	1.5	7.0	0.0	82.0	99.5	0.5
35-39	8.1	1.4	6.6	0.0	82.8	99.5	0.5
40-44	8.1	1.3	6.7	0.1	83.4	99.3	0.7
45-49	7.5	1.3	6.1	0.1	82.8	98.2	1.8
50-54	6.0	1.1	4.8	0.0	81.1	99.1	0.9
55-59	6.1	1.3	4.8	0.0	79.0	99.6	0.4
60-64	4.5	1.6	2.8	0.0	63.6	99.5	0.5
65+	7.6	5.0	2.7	0.0	35.0	100.0	0.0
Urban	13.5	5.7	7.6	0.3	57.8	96.7	3.3
15-19	2.4	2.0	0.3	0.1	14.9	83.9	16.1
20-24	2.0	1.0	0.9	0.1	49.2	91.6	8.4
25-29	2.4	0.8	1.6	0.0	68.1	97.3	2.7
30-34	2.0	0.5	1.5	0.0	74.1	98.5	1.5
35-39	1.6	0.4	1.2	0.0	75.1	98.4	1.6
40-44	1.1	0.3	0.8	0.0	73.9	98.4	1.6
45-49	0.8	0.2	0.6	0.0	76.9	98.8	1.2
50-54	0.4	0.1	0.3	0.0	72.9	97.4	2.6
55-59	0.3	0.1	0.2	0.0	67.0	100.0	0.0
60-64	0.2	0.1	0.1	0.0	52.8	99.3	0.7
65+	0.3	0.2	0.1	0.0	28.5	100.0	0.0
Rural	86.5	24.7	61.1	0.7	71.5	98.8	1.2
15-19	15.8	7.4	8.2	0.1	52.9	98.5	1.5
20-24	12.6	3.4	9.0	0.2	73.2	97.7	2.3
25-29	8.5	1.2	7.1	0.1	86.0	98.1	1.9
30-34	6.6	1.0	5.6	0.0	84.4	99.8	0.2
35-39	6.4	1.0	5.4	0.0	84.7	99.8	0.2
40-44	7.0	1.1	5.9	0.0	84.8	99.4	0.6
45-49	6.6	1.1	5.4	0.1	83.5	98.1	1.9
50-54	5.6	1.0	4.5	0.0	81.7	99.2	0.8
55-59	5.8	1.2	4.6	0.0	79.6	99.5	0.5
60-64	4.3	1.5	2.7	0.0	64.1	99.5	0.5
65+	7.4	4.8	2.6	0.0	35.3	100.0	0.0

Source: National Labour Force Survey 1998 and 1999, Bhutan.

TABLE 4.8

PERCENT DISTRIBUTION OF ECONOMICALLY ACTIVE AND INACTIVE POPULATION AND SPECIFIC PARTICIPATION RATE, BHUTAN 1998

Age group	Total Percent	Economically Inactive	Economically active population		Rate		
			Employed	Unemployed	LFPR	Employment Rate	Unemployment Rate
Both sexes	100.0	41.1	58.1	0.8	58.9	98.6	1.4
15-19	17.0	10.6	6.3	0.2	37.8	97.5	2.5
20-24	13.2	5.7	7.3	0.2	56.7	97.3	2.7
25-29	11.2	3.3	7.7	0.1	70.1	98.6	1.4
30-34	9.3	2.4	6.8	0.1	74.2	98.8	1.2
35-39	8.6	2.2	6.3	0.1	74.3	98.4	1.6
40-44	7.8	2.1	5.6	0.0	72.8	99.4	0.6
45-49	7.1	2.1	4.9	0.0	70.2	99.3	0.7
50-54	6.9	2.2	4.7	0.0	68.6	99.2	0.8
55-59	5.8	2.2	3.6	0.0	62.4	99.0	1.0
60-64	5.2	2.5	2.7	0.0	52.5	99.8	0.2
65+	8.0	5.8	2.2	0.0	28.0	99.5	0.5
Male	50.3	17.4	32.4	0.4	65.3	98.6	1.4
15-19	8.4	5.6	2.8	0.1	34.1	97.4	2.6
20-24	6.6	2.8	3.7	0.1	57.7	96.3	3.7
25-29	5.2	1.2	4.0	0.1	76.6	98.7	1.3
30-34	4.7	0.6	4.0	0.0	86.8	99.0	1.0
35-39	4.3	0.5	3.7	0.1	87.4	98.3	1.7
40-44	3.9	0.7	3.1	0.0	81.1	99.5	0.5
45-49	3.4	0.5	2.9	0.0	85.9	99.4	0.6
50-54	3.5	0.8	2.7	0.0	78.0	99.7	0.3
55-59	3.1	0.9	2.2	0.0	72.2	98.6	1.4
60-64	2.9	1.1	1.8	0.0	61.0	99.9	0.1
65+	4.2	2.7	1.5	0.0	35.4	100.0	0.0
Female	49.7	23.6	25.7	0.4	52.5	98.6	1.4
15-19	8.6	5.1	3.5	0.1	41.4	97.5	2.5
20-24	6.6	2.9	3.6	0.1	55.7	98.3	1.7
25-29	5.9	2.1	3.7	0.1	64.3	98.6	1.4
30-34	4.6	1.8	2.8	0.0	61.6	98.4	1.6
35-39	4.2	1.7	2.5	0.0	60.8	98.5	1.5
40-44	3.9	1.4	2.5	0.0	64.5	99.4	0.6
45-49	3.6	1.6	2.0	0.0	55.3	99.2	0.8
50-54	3.4	1.4	2.0	0.0	59.1	98.5	1.5
55-59	2.6	1.3	1.3	0.0	50.8	99.7	0.3
60-64	2.3	1.3	1.0	0.0	41.9	99.8	0.2
65+	3.8	3.0	0.7	0.0	19.7	98.6	1.4

Notes:

Crude activity = 38. Employment rate = 98.6. General activity = 59.

Unemployment rate = 1.4. Economic dependency ratio = 166.

LFPR = Labour Force Participation Rate.

Source: National Labour Force Survey 1998 and 1999, Bhutan.

TABLE 4.9

PERCENT DISTRIBUTION OF ECONOMICALLY ACTIVE & INACTIVE POPULATION BY SEX AND SPECIFIC PARTICIPATION RATE, BHUTAN 1999

Age group	Total Percent	Economically Inactive	Economically active population		Rate		
			Employed	Unemployed	LFPR	Employment Rate	Unemployment Rate
Both sexes	100.0	30.4	68.7	1.0	69.6	98.6	1.4
15-19	1801.0	9.4	8.5	0.2	48.0	97.7	2.1
20-24	1406.0	4.4	9.9	0.3	69.9	97.1	2.9
25-29	10.9	2.0	8.7	0.2	82.0	97.9	2.1
30-34	8.6	1.5	7.0	0.0	82.0	99.5	0.5
35-39	8.1	1.4	6.6	0.0	82.8	99.5	0.5
40-44	8.1	1.3	6.7	0.1	83.4	99.3	0.7
45-49	7.5	1.3	6.1	0.1	82.8	98.2	1.8
50-54	6.0	1.1	4.8	0.0	81.1	99.1	0.9
55-59	6.1	1.3	4.8	0.0	79.0	99.6	0.4
60-64	4.5	1.6	2.8	0.0	63.6	99.5	0.5
65+	7.6	5.0	2.7	0.0	35.0	100.0	0.0
Male	49.4	11.5	37.4	0.5	76.7	98.8	1.2
15-19	8.8	5.0	3.8	0.1	44.0	98.7	1.3
20-24	6.9	2.2	4.6	0.1	67.7	97.0	3.0
25-29	5.2	0.5	4.6	0.1	90.5	98.1	1.9
30-34	4.2	0.2	4.0	0.0	95.0	99.5	0.5
35-39	3.9	0.3	3.7	0.0	93.5	99.8	0.2
40-44	4.0	0.1	3.9	0.0	98.3	99.4	0.6
45-49	3.5	0.1	3.3	0.1	95.8	97.2	2.8
50-54	3.3	0.3	3.0	0.0	91.5	98.9	1.1
55-59	3.0	0.2	2.8	0.0	94.2	100.0	0.0
60-64	2.6	0.5	2.1	0.0	80.4	100.0	0.0
65+	4.0	2.2	1.8	0.0	44.5	100.0	0.0
Female	50.6	18.8	31.3	0.5	62.8	98.4	1.6
15-19	9.3	4.5	4.7	0.1	51.8	97.2	2.8
20-24	7.6	2.1	5.3	0.2	71.9	97.2	2.8
25-29	5.7	1.5	4.1	0.1	74.1	97.7	2.3
30-34	4.4	1.3	3.0	0.0	69.5	99.5	0.5
35-39	4.1	1.1	3.0	0.0	72.5	99.2	1.8
40-44	4.2	1.3	2.8	0.0	69.2	99.1	0.9
45-49	4.0	1.1	2.8	0.0	71.3	99.3	0.7
50-54	2.7	0.8	1.8	0.0	68.3	99.4	0.6
55-59	3.1	1.1	2.0	0.0	64.4	99.0	1.0
60-64	1.9	1.1	0.8	0.0	41.4	98.3	1.7
65+	3.7	2.8	0.9	0.0	24.7	100.0	0.0

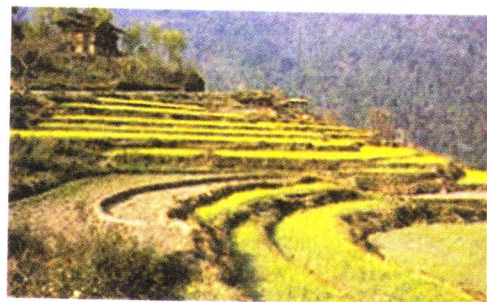
Notes:

Crude activity = 45, Employment rate = 98.6, General activity = 70, Unemployment rate = 1.4

Economic dependency ratio = 122. Note: - LFPR = Labour Force Participation Rate.

Source: National Labour Force Survey 1998 and 1999, Bhutan

CHAPTER 5: LAND USE AND AGRICULTURE



The ministry of Agriculture, over the past four decades, was concerned about "how to grow" by establishing various agriculture infrastructures to produce and distribute the inputs. Currently the Ministry of Agriculture established 4 main RNR research centers. The Ministry of Agriculture with the accumulated experience having

accomplished one five year plan to the other maintains the three basic objectives that is to conserve the environment, enhance the rural income and attain the self reliance in cereals and essential oil crops. In 2001, Agriculture contributed 36.7% of share to the total economy i.e., as measured by the Gross Domestic Product. It was also the single largest sector that provides livelihood to 79% of the population. The agricultural practice has changed tremendously over the years. Until a decade ago, agriculture was practiced on a subsistence basis. What ever was produced on the farm was consumed having no marketable surplus. The farm production is supplemented by keeping different kinds of domestic animals such as cattle for draught and milking purpose, chicken for eggs and pigs for meat etc. At higher altitudes, herds of yaks and sheep are also kept for draught and milking. Owing to the improved communication facilities in the country, there is an increasing tendency to go for cash crops like apples in the temperate north; oranges, areca nut and cardamom in the subtropical south. Other cash crops that are exported include ginger, chilies and vegetables. Strategies to increase livestock and the cereal production, includes the propagation and practice of double cropping of the paddy production and distribution of high yield varieties. In the livestock sector the artificial insemination covers not only for the Jersey breeds that are high yielding but also for the production of Jatsha and Jatsam that are local high yield varieties. As a result, increasing number of farms is mechanized with sizable investment on the machinery and other inputs that are subsidized by the government. The issue is not only to formulate well-balanced agricultural policies and the response shown by the farmers to designed policies but also to monitor the progress. To do this, a good statistical database giving the trends or time series is required. Back in 1988/89, the National Agronomic Survey was carried out in collaboration with the then Department of Agriculture. The Ministry of Agriculture conducts a nation wide sample surveys and the major source of Agricultural data is now available from the National Agricultural Census that was conducted in 2000. These surveys and censuses besides the regular administrative data are the sources of data on the sector.

TABLE 5.1
LAND-USE AND VEGETATION TYPES AS PERCENTAGE
OF TOTAL AREA OF BHUTAN, 1996

Land-use and vegetation types	Percent
Forests	72.5
Conifer forest	26.5
Fir	8.6
Mixed conifer	12.1
Blue pine	3.2
Chir pine	2.5
Broadleaf forest	37.7
Broadleaf + conifer	3.4
Broadleaf forest	34.3
Forest plantation	0.2
Conifer plantation	0.1
Broadleaf plantation	0.1
Scrub forest	8.1
Pasture	3.9
Natural pastures	3.9
Improved pastures	0.0
Agriculture	7.7
Wetland cultivation	1.0
Irrigated wetland	1.0
Rainfed wetland	0.0
Dryland cultivation	2.4
Terraced dryland	0.3
Unterraced dryland	2.2
Tseri (Shifting cultivation)	2.2
Mixed cultivated land	2.1
Horticulture	0.1
Orchards	0.1
Apple orchards	0.0
Citrus orchard	0.0
Horticulture plantations	0.1
Cardamom plantation	0.1
Arecanut plantation	0.0
Ginger plantation	0.0
Settlement	0.1
Others	15.7
Snow/glaciers	7.5
Rock outcrops	5.0
Water spreads	0.8
Marshy areas	0.1
Landslips/erosion	2.4
Total	100.0

Note:

Horticulture areas might be underestimated as they were too small to be mapped at a scale 1:50,000 and because they were under forest cover.

Source: Ministry of Agriculture, Thimphu.

TABLE 5.2
AREA OF DZONGKHAGS AS A PERCENTAGE OF TOTAL AREA OF BHUTAN BY
TYPE OF LAND COVER, 1995

Dzongkhag	(Percent)						Total area
	Forest	Pasture	Agri- culture	Horti- culture	Settle- ment	Others	
Bumthang	4.5	0.6	0.1	0.0	0.0	1.6	6.8
Chhukha	3.9	0.1	0.4	0.0	0.0	0.1	4.5
Dagana	2.8	0.0	0.4	0.0	0.0	0.1	3.5
Gasa	3.6	0.6	0.0	..	0.0	6.8	11.0
Haa	3.4	0.3	0.1	0.0	0.0	0.5	4.3
Lhuntse	5.4	0.2	0.3	..	0.0	1.2	7.2
Mongar	4.3	0.0	0.5	..	0.0	0.0	4.9
Punakha	2.2	0.0	0.1	0.0	0.0	0.1	2.4
Paro	2.1	0.2	0.2	0.0	0.0	0.7	3.2
Pemagatshel	0.7	0.0	0.6	0.0	0.0	0.0	1.3
Samdrup Jongkhar	4.5	0.0	1.1	0.0	0.0	0.2	5.8
Samtse	3.2	0.0	0.6	0.0	0.0	0.1	3.9
Sarpang	4.8	0.0	0.7	0.0	0.0	0.2	5.7
Thimphu	2.7	0.8	0.1	0.0	0.0	1.2	4.8
Trashigang	4.5	0.3	0.8	..	0.0	0.1	5.7
Trashy Yangtse	2.7	0.1	0.3	..	0.0	0.4	3.6
Trongsa	3.9	0.2	0.3	0.0	0.0	0.1	4.5
Tsirang	1.2	0.0	0.3	0.0	0.0	0.0	1.6
Wangdue Phodrang	7.4	0.4	0.2	0.0	0.0	2.1	10.1
Zhemgang	4.6	0.0	0.6	0.0	0.0	0.1	5.3
Bhutan	72.5	3.9	7.7	0.0	0.0	15.7	100.0

Source: Ministry of Agriculture, Thimphu.

TABLE 5.3
ALTITUDE ZONES OF DZONGKHAGS AS PERCENTAGE OF THEIR TOTAL AREA, 1995
(Percent)

Dzongkhag	Altitude at Dzongkhag centre (metres)	Altitude zones (metres)						Total
		0- 600	600- 1200	1200- 1800	1800- 2400	2400- 3000	3000- 3600	
Bumthang	2,690	0.0	0.0	0.0	0.4	10.6	26.2	37
Chhukha	2,220	7.7	17.2	20.8	20.4	18.7	11.8	97
Dagana	1,520	4.0	15.7	22.0	24.3	20.7	8.7	95
Gasa	3,659	0.0	0.0	0.1	0.9	2.5	4.8	8
Haa	2,712	0.0	0.8	3.6	7.3	16.1	24.0	52
Lhuntse	1,460	0.0	0.9	6.8	14.3	19.6	17.0	59
Mongar	1,620	3.1	17.9	27.1	23.3	16.0	11.2	99
Paro	2,280	0.0	0.0	0.0	6.3	25.3	24.8	56
Pemagatshel	1,200	7.9	39.0	39.7	13.2	0.2	0.0	100
Punakha	1,220	0.0	0.0	17.8	26.5	21.8	15.5	82
Samdrup Jongkhar	160	25.6	27.6	23.1	14.4	6.5	2.4	100
Samtse	390	17.0	25.5	24.3	18.8	11.0	2.5	99
Sarpang	210	31.1	29.4	21.1	14.6	2.9	0.7	100
Thimphu	2,320	0.0	0.0	1.0	5.0	16.3	18.8	41
Trashigang	1,040	0.2	4.9	15.8	22.2	20.6	18.0	82
Trashy Yangtse	1,830	0.0	2.3	6.7	16.5	23.4	18.8	68
Trongsa	2,180	0.0	2.9	10.4	19.5	28.8	21.2	83
Tsirang	1,620	7.3	31.4	30.1	19.8	7.6	3.2	99
Wangdue Phodrang	1,260	0.1	3.0	9.0	13.5	17.8	19.2	63
Zhemgang	1,916	9.5	27.1	28.0	17.9	9.7	5.1	97

Contd...

TABLE 5.3 (contd.)
ALTITUDE ZONES OF DZONGKHAGS AS PERCENTAGE OF THEIR TOTAL AREA, 1995
(Percent)

Dzongkhag	Altitude zones (meters)							Total area(%)
	0-3600	3600-4200	4200-4800	4800-5400	5400-6000	6000-6600	6600	
Bumthang	37.2	25.7	18.4	16.3	2.2	0.2	0.0	100
Chhukha	96.6	3.1	0.1	0.0	0.1	0.0	0.0	100
Dagana	95.4	3.7	1.0	0.0	0.0	0.0	0.0	100
Gasa	8.3	11.2	21.9	28.6	21.1	7.4	1.4	100
Haa	51.8	27.9	17.6	2.6	0.1	0.0	0.0	100
Lhuntse	58.6	15.7	16.7	8.4	0.5	0.0	0.0	100
Mongar	98.6	1.5	0.0	0.0	0.0	0.0	0.0	100
Paro	56.4	18.6	21.3	3.5	0.1	0.0	0.0	100
Pemagatshel	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100
Punakha	81.6	12.6	5.7	0.1	0.0	0.0	0.0	100
Samdrup Jongkhar	99.6	0.3	0.0	0.0	0.0	0.0	0.0	100
Samtse	99.1	0.7	0.0	0.0	0.1	0.0	0.0	100
Sarpang	99.8	0.2	0.0	0.0	0.0	0.0	0.0	100
Thimphu	41.1	18.6	27.3	10.9	1.4	0.5	0.1	100
Trashigang	81.7	16.0	2.3	0.0	0.0	0.0	0.0	100
Trash Yangtse	67.7	15.5	13.4	3.2	0.2	0.0	0.0	100
Trongsa	82.8	12.4	4.7	0.1	0.0	0.0	0.0	100
Tsirang	99.4	0.5	0.0	0.0	0.0	0.0	0.0	100
Wangdue Phodrang	62.6	12.7	12.5	11.1	1.1	0.0	0.0	100
Zhemgang	97.3	2.1	0.5	0.0	0.0	0.0	0.0	100

Source: Ministry of Agriculture, Thimphu

TABLE 5.4
AREA OF DZONGKHAGS AS A PERCENTAGE OF TOTAL AREA OF BHUTAN BY ALTITUDE ZONES, 1995
(Percent)

Dzongkhag	Area	Altitude zones (metres)						
		0-600	600-1200	1200-1800	1800-2400	2400-3000	3000-3600	3600
Bumthang	6.8	0.0	0.0	0.0	0.0	0.7	1.8	2.5
Chhukha	4.5	0.3	0.8	0.9	0.9	0.8	0.5	4.3
Dagana	3.5	0.1	0.5	0.8	0.8	0.7	0.3	3.3
Gasa	11.0	0.0	0.0	0.0	0.1	0.3	0.5	0.9
Haa	4.3	0.0	0.0	0.2	0.3	0.7	1.0	2.2
Lhuntse	7.2	0.0	0.1	0.5	1.0	1.4	1.2	4.2
Mongar	4.9	0.2	0.9	1.3	1.1	0.8	0.5	4.8
Punakha	2.4	0.0	0.0	0.4	0.6	0.5	0.4	2.0
Paro	3.2	0.0	0.0	0.0	0.2	0.8	0.8	1.8
Pemagatshel	1.3	0.1	0.5	0.5	0.2	0.0	0.0	1.3
Samdrup Jongkhar	5.8	1.5	1.6	1.3	0.8	0.4	0.1	5.7
Samtse	3.9	0.7	1.0	1.0	0.7	0.4	0.1	3.9
Sarpang	5.7	1.8	1.7	1.2	0.8	0.2	0.0	5.7
Thimphu	4.8	0.0	0.0	0.0	0.2	0.8	0.9	2.0
Trashigang	5.7	0.0	0.3	0.9	1.3	1.2	1.0	4.7
Trash Yangtse	3.6	0.0	0.1	0.2	0.6	0.8	0.7	2.4
Trongsa	4.5	0.0	0.1	0.5	0.9	1.3	1.0	3.7
Tsirang	1.6	0.1	0.5	0.5	0.3	0.1	0.1	1.6
Wangdue Phodrang	10.1	0.0	0.3	0.9	1.4	1.8	1.9	6.3
Zhemgang	5.3	0.5	1.4	1.5	0.9	0.5	0.3	5.2
Bhutan	100.0	5.3	9.8	12.6	13.4	14.3	13.2	68.6

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TABLE 5.4 (contd.)

AREA OF DZONGKHAGS AS A PERCENTAGE OF TOTAL AREA OF BHUTAN BY ALTITUDE ZONES, 1995

Dzongkhag	Area	(Percent)							Total area (%)
		Altitude zones (metres)							
		0-3600	3600-4200	4200-4800	4800-5400	5400-6000	6000-6600	>6600	
Bumthang	6.8	2.5	1.7	1.2	1.1	0.1	0.0	0.0	6.8
Chhukha	4.5	4.3	0.1	0.0	0.0	0.0	0.0	0.0	4.5
Dagana	3.5	3.3	0.1	0.0	0.0	0.0	0.0	0.0	3.4
Gasa	11.0	0.9	1.2	2.4	3.1	2.3	0.8	0.2	11.0
Haa	4.3	2.2	1.2	0.7	0.1	0.0	0.0	0.0	4.3
Lhuntse	7.2	4.2	1.1	1.2	0.6	0.0	0.0	0.0	7.2
Mongar	4.9	4.8	0.1	0.0	0.0	0.0	0.0	0.0	4.9
Punakha	2.4	2.0	0.3	0.1	0.0	0.0	0.0	0.0	2.4
Paro	3.2	1.8	0.6	0.7	0.1	0.0	0.0	0.0	3.2
Pemagatshel	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3
Samdrup Jongkhar	5.8	5.7	0.0	0.0	0.0	0.0	0.0	0.0	5.8
Samtse	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	3.9
Sarpang	5.7	5.7	0.0	0.0	0.0	0.0	0.0	0.0	5.7
Thimphu	4.8	2.0	0.9	1.3	0.5	0.1	0.0	0.0	4.8
Trashigang	5.7	4.7	0.9	0.1	0.0	0.0	0.0	0.0	5.7
Trash Yangtse	3.6	2.4	0.6	0.5	0.1	0.0	0.0	0.0	3.6
Trongsa	4.5	3.7	0.6	0.2	0.0	0.0	0.0	0.0	4.5
Tsirang	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1.6
Wangdue Phodrang	10.1	6.3	1.3	1.3	1.1	0.1	0.0	0.0	10.1
Zhemgang	5.3	5.2	0.1	0.0	0.0	0.0	0.0	0.0	5.3
Bhutan	100.0	68.6	10.9	9.9	6.8	2.7	0.9	0.2	99.9

Source: Ministry of Agriculture, Thimphu.

TABLE 5.5

AVERAGE MONTHLY TEMPERATURE AT VARIOUS STATIONS BY DZONGKHAG, 2002

Dzongkhag & station	Temperature	(Degree Celsius)											
		Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bumthang													
Chamkhar	Max	11.1	14.2	15.7	17.9	19.4	20.9	21.6	21.7	20.9	17.6	14.4	11.0
	Min	-6.6	-1.4	1.9	5.1	9.2	14.1	16.3	16.3	14.8	7.4	2.3	-2.8
Chhume	Max	..	..	..	..	..	..	..	..	..	..	..	..
	Min	..	..	..	..	..	..	..	..	..	..	..	..
Ura	Max	..	..	..	..	..	..	..	..	..	..	..	..
	Min	..	..	..	..	..	..	..	..	..	..	..	..
Chhukha													
Chhukha	Max	11.7	14.6	16.6	19.4	22.6	22.2	21.6	23.6	20.1	18.9	16.1	12.3
	Min	8.3	11.7	12.7	14.7	18.2	17.6	16.2	17.7	15.5	12.5	4.8	3.2
Gedu	Max	9.3	12.5	14.6	16.3	19.1	23.4	26.2	26.5	27.2	20.6	16.6	11.8
	Min	4.5	5.5	8.5	11.2	13.6	15.9	16.9	16.6	15.5	12.5	10.5	9.1
Tala	Max	14.3	16.4	19.4	19.9	21.7	22.9	23.4	23.6	23.3	21.4	18.7	15.3
	Min	6.6	8.7	11.2	11.6	16.2	18.0	18.5	17.2	15.3	14.3	11.9	7.5
Dagana													
Drujeygang	Max	17.1	19.7	21.3	23.5	27.9	28.0	28.7	27.8	26.1	24.6	21.5	17.4
	Min	8.5	10.5	11.8	14.5	16.2	20.5	21.2	18.7	18.9	16.7	12.6	10.4
Haa													
Namjeyling	Max	9.7	11.6	12.9	14.9	18.1	19.1	20.1	20.1	18.8	16.0	15.0	13.6
	Min	-5.6	-2.1	3.7	5.1	7.5	10.8	13.8	12.1	12.4	6.5	-0.5	-4.5
Lhuntse													
Dungkhar	Max	14.1	16.4	18.6	22.0	24.3	26.6	26.5	26.7	25.4	23.2	21.1	17.0
	Min	4.7	5.3	9.7	10.2	12.9	15.4	16.7	16.0	14.4	11.5	6.3	3.9
Tangmachhu	Max	14.3	15.7	18.1	25.1	30.3	30.4	30.2	27.1	24.6	20.6	17.2	14.3
	Min	5.6	4.7	11.9	12.1	13.9	17.1	18.5	17.2	15.5	11.8	7.8	5.5
Mongar													
Yadi	Max	16.7	19.8	21.2	23.6	25.6	25.7	26.8	26.3	26.4	23.4	21.0	18.2
	Min	7.8	10.8	11.1	14.1	19.3	21.1	21.4	22.0	19.0	14.4	11.1	8.3
Tsakaling	Max	..	..	..	..	..	..	..	..	..	..	..	..
	Min	..	..	..	..	..	..	..	..	..	..	..	..
Lingmethang	Max	23.5	27.2	28.0	30.1	32.0	32.3	31.5	32.2	32.0	30.9	27.4	23.7
	Min	8.7	10.9	14.7	17.1	19.7	23.7	23.8	22.8	21.5	17.5	14.1	11.0
Punakha													
Punakha Dzong	Max	16.4	19.7	19.7	22.1	27.1	27.9	27.0	27.9	25.3	25.2	18.1	15.9
	Min	5.8	9.4	11.9	14.4	16.3	17.2	17.1	17.3	16.6	14.7	11.0	5.6
Shelgana	Max	19.1	22.3	24.7	26.2	29.0	29.9	29.6	30.1	28.6	26.7	24.3	20.3
	Min	1.9	9.0	11.1	12.4	13.8	16.7	18.0	16.7	14.8	11.7	6.2	3.9
Paro													
Drugyel Dzong	Max	14.6	14.5	17.7	19.1	23.3	24.0	25.3	24.6	21.9	26.7	15.9	12.4
	Min	-5.2	-1.9	3.1	5.5	10.2	15.4	14.9	13.9	12.7	6.5	-0.4	-3.5

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TABLE 5.5(contd.)
AVERAGE MONTHLY TEMPERATURE AT VARIOUS STATIONS BY DZONGKHAG, 2002
(Degree Celsius)

Dzongkhag & station	Temperature	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pemagatshel													
P/Gatshel	Max	20.7	21.6	22.8	24.4	26.9	27.4	25.4	26.6	26.0	22.8	20.5	18.0
	Min	5.6	8.1	12.4	12.1	15.9	16.5	16.4	14.9	13.0	11.0	10.2	8.8
Dungmein	Max	7.6	10.9	21.9	23.4	25.9	27.1	27.6	28.4	27.6	23.7	17.4	15.7
	Min	2.2	5.0	14.5	14.7	16.0	18.1	18.8	18.1	16.0	13.2	9.5	7.1
Yurung	Max	..	..	..	..	..	..	..	..	..	..	..	..
	Min	..	..	..	..	..	..	..	..	..	..	..	..
Samdrup Jongkhar													
Airong	Max	15.0	16.6	20.0	20.9	23.1	24.5	24.1	25.4	27.0	22.4	19.9	15.2
	Min	7.7	9.9	13.9	16.8	18.3	19.5	20.5	20.3	20.3	14.6	11.4	8.4
Dechheling	Max	16.0	17.9	21.6	22.4	25.0	25.2	25.6	26.0	25.8	24.5	22.3	16.5
	Min	8.7	9.9	13.2	15.1	18.1	20.5	20.3	19.5	17.7	11.8	10.1	7.5
Nganglam	Max	11.9	11.9	20.1	25.2	26.5	29.8	28.4	28.0	28.2	26.1	25.9	20.0
	Min	6.1	8.1	12.1	14.7	16.9	19.4	22.3	23.3	22.3	19.9	17.3	12.5
Samtse													
NIE	Max	23.3	25.2	27.7	27.6	29.6	29.3	27.9	29.5	30.1	29.4	27.6	23.5
	Min	14.8	17.2	19.9	19.6	21.7	24.1	21.3	22.1	22.5	20.7	18.4	16.5
Sarpang													
Bhur	Max	21.9	23.9	25.8	26.4	29.4	28.6	28.2	29.8	30.1	29.7	27.2	23.7
	Min	12.4	15.1	17.4	18.5	22.5	23.7	23.6	24.3	22.7	20.0	17.4	14.6
Sarpang	Max	20.9	26.7	29.2	29.6	31.7	31.2	30.5	31.9	32.2	29.6	28.6	22.6
	Min	12.3	15.3	17.2	18.6	20.3	22.6	23.2	22.5	21.6	20.1	18.6	13.8
Thimphu													
Gidakom	Max	16.4	18.2	21.1	23.8	25.4	26.7	25.9	26.6	25.9	24.2	22.7	20.3
	Min	-2.7	0.4	8.5	7.1	10.4	14.3	16.0	15.1	13.0	7.5	2.4	-0.5
Kawangjangsa	Max	13.4	15.9	17.7	18.7	21.8	23.7	22.7	23.5	21.4	19.7	19.1	14.5
	Min	-3.4	1.2	4.5	8.1	10.5	15.2	16.9	15.3	13.0	8.2	1.5	-0.6
Taba	Max	10.1	12.4	11.2	13.9	19.6	20.1	24.1	23.4	25.8	17.1	14.7	9.4
	Min	1.4	2.0	5.1	8.1	9.7	15.0	16.4	15.8	13.7	9.5	4.4	1.6
Trashigang													
Khaling	Max	14.1	13.1	14.4	18.2	23.8	26.3	26.5	25.9	24.1	22.9	19.6	13.4
	Min	5.9	6.6	7.2	8.7	11.9	13.9	15.7	15.5	15.5	13.0	7.6	4.7
Radhi	Max	20.3	23.0	25.5	27.8	28.1	28.2	27.5	27.6	27.0	24.8	23.0	19.4
	Min	7.1	8.6	12.0	14.2	17.3	20.3	20.7	19.8	17.4	14.4	11.0	8.5
Thrimshing	Max	12.6	15.5	18.7	22.9	26.5	27.6	27.6	24.7	24.4	21.7	16.7	14.3
	Min	7.5	10.9	13.3	14.0	17.3	18.6	19.0	20.8	18.0	15.9	12.4	8.9
Wamrong	Max	11.4	11.5	14.0	16.0	19.3	21.4	24.6	21.9	21.4	19.8	17.2	10.9
	Min	2.0	3.0	5.3	7.8	10.3	12.9	13.9	13.6	12.8	9.3	7.4	3.4

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TABLE 5.5(contd.)
AVERAGE MONTHLY TEMPERATURE AT VARIOUS STATIONS BY DZONGKHAG, 2002
(Degree Celsius)

Dzongkhag and station	Temperature	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Trashigang													
Trashigang	Max	7.3	10.4	12.7	15.1	22.2	22.7	21.0	22.1	20.3	17.6	14.5	8.7
	Min	5.4	7.9	9.4	11.4	14.1	16.7	18.1	17.5	15.8	12.3	8.6	5.7
Yallang	Max	13.2	13.9	16.7	20.4	21.8	22.3	21.7	22.2	20.1	19.3	14.4	11.1
	Min	5.8	6.4	9.0	9.7	11.8	12.8	15.3	16.8	15.1	13.2	9.4	5.9
Trongsa													
Bjizam	Max	13.3	16.3	18	19.4	21.9	23.8	24.7	24.1	23.4	21.8	19.0	15.1
	Min	1.1	5.2	8.4	10.5	12.8	16.7	18.0	16.6	14.9	11.5	6.3	3.3
Chendebji	Max	15.8	16.2	16.0	16.3	20.7	18.9	15.6	18.5	19.0	11.7	16.9	16.2
	Min	5.2	7.3	9.1	12.4	13.9	11.5	8.7	9.1	8.8	6.3	8.9	6.2
Kuenga Rabten	Max	17.3	18.0	20.8	22.9	24.7	24.5	25.1	26.8	25.0	22.6	20.5	19.5
	Min	5.7	6.3	9.0	11.1	13.8	16.1	17.4	17.4	15.7	12.4	8.8	8.1
Langthel	Max	18.5	20.6	22.2	26.1	28.5	30.0	30.4	30.3	28.7	26.9	24.0	20.0
	Min	9.9	10.6	13.0	15.0	17.7	19.0	22.0	21.0	19.5	15.8	13.5	10.3
Trongsa	Max												
	Min												
Tsirang													
Sunkosh Dobani	Max	21.6	25.8	28.4	30.0	30.1	30.4	29.9	30.8	31.0	28.1	28.2	24.4
	Min	9.1	10.9	15.0	18.1	19.2	23.0	22.9	21.3	20.4	16.6	13.1	11.1
Wangdue Phodrang													
Basochhu	Max	12.9	20.4	24.5	26.3	27.6	29.0	28.9	28.9	28.2	26.2	21.9	16.4
	Min	8.0	10.6	13.1	14.1	17.6	19.0	18.7	17.0	18.5	15.5	12.5	8.6
Nobding	Max	10.0	9.5	15.4	19.6	22.9	22.9	24.4	24.8	23.5	21.9	18.6	11.7
	Min	2.4	2.1	4.3	6.3	9.6	13.1	13.9	13.6	12.4	9.1	4.2	2.5
Phobjekha	Max	10.0	11.2	12.8	15.4	16.0	19.3	19.8	19.9	18.6	16.6	14.4	11.0
	Min	-3.5	-4.3	-0.1	3.5	4.2	10.3	12.3	10.8	8.9	3.7	-0.7	-4.8
Samtengang	Max	14.5	18.6	22.0	24.4	25.6	26.2	28.0	27.5	26.7	24.3	20.4	16.2
	Min	4.1	5.5	7.4	11.8	14.3	16.9	18.0	17.9	15.4	12.8	8.1	4.7
Wangdue CARD	Max	17.8	20.5	22.6	24.0	26.7	27.8	26.8	27.7	25.9	25.2	22.7	18.3
	Min	4.9	8.2	12.0	14.7	17.4	20.7	21.6	20.6	19.0	14.3	9.4	7.6
Zhemgang													
Yebilaptsa	Max	20.0	23.2	26.2	30.2	32.8	33.2	32.6	32.2	32.8	30.1	27.9	24.2
	Min	8.9	10.5	12.6	16.1	18.7	21.2	22.1	21.3	20.0	16.1	12.3	9.8

Source: Meteorology Unit, Division of Power, Thimphu.

TABLE 5.6
TOTAL MONTHLY RAINFALL AT EXISTING STATIONS IN EACH DZONGKHAG, 2002
(Millimeter)

Dzongkhag and station	Month												Total rain fall
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Bumthang													
Chamkhar	0.4	0.3	29.8	40.1	100.4	108.6	158.4	178.4	56.7	31.6	18.5	0.0	723.2
Chhumey	..	..	..	..	..	..	..	..	..	..	..	..	..
Ura	..	..	..	..	..	..	..	..	..	..	..	..	..
Chhukha													
Chhukha	29.8	2.0	77.1	167.4	118.3	121.9	368.7	169.0	125.7	50.4	6.4	0.4	1,237.1
Gedu	48.2	32.0	148.2	45.4	26.9	36.2	1,199.4	336.6	374.2	132.6	13.0	20.2	2,412.9
Tala	17.7	55.1	181.9	476.0	296.0	409.8	1,244.7	333.2	153.7	124.2	15.0	19.4	3,326.7
Dagana													
Dagadzong	..	..	..	..	..	..	..	..	..	..	..	..	..
Drujeygang	8.0	0.0	23.0	122.6	164.5	298.5	682.0	275.0	149.8	10.6	3.8	4.5	1,742.3
Tashithang	..	..	..	..	..	..	..	..	..	..	..	..	..
Haa													
Namjeyleing	27.4	5.0	31.9	57.7	71.7	113.4	215.7	197.6	146.9	28.4	0.0	0.0	895.7
Lhuntse													
Dungkhar	0.0	0.0	68.1	175.4	76.8	90.5	116.2	275.4	27.8	36.0	2.2	13.6	882.0
Tangmachu	9.2	1.0	89.1	91.4	101.7	128.2	142.4	188.0	60.9	43.0	27.4	10.3	892.6
Mongar													
Lingmethang	0.0	0.0	14.6	133.8	76.8	157.2	258.6	218.8	87.4	9.0	1.0	4.0	961.2
Tsakaling	..	..	..	..	..	..	..	..	..	..	..	..	..
Yadi	0.3	0.5	10.8	81.7	83.1	155.7	282.7	244.6	127.8	34.5	19.2	9.4	1,050.3
Paro													
Drugyal Dzong	0.0	0.0	0.0	0.0	47.1	123.0	229.0	206.2	114.0	16.0	0.0	0.0	735.3
Pemagatshel													
Pemagatshel	0.0	8.8	62.9	129.0	71.8	352.2	611.5	161.5	183.4	24.2	20.2	13.1	1,638.6
Dungmain	0.0	0.0	76.0	143.6	203.0	333.0	864.9	247.0	39.9	11.0	30.0	0.0	1,948.4
Yurung	..	..	..	..	..	..	..	..	..	..	..	..	..
Punakha													
Punakha	15.4	0.0	3.2	46.5	56.0	73.8	84.6	291.4	158.1	42.1	2.8	14.5	788.4
Shelgana	8.5	0.0	9.0	81.0	105.5	284.5	306.5	330.0	171.0	49.5	3.0	15.5	1,364.0
Samdrup Jongkhar													
Airong	7.8	15.0	122.6	219.2	289.0	574.2	1,877.4	418.2	278.4	47.0	44.4	25.0	3,918.2
Dechenling	11.6	0.0	116.0	262.2	302.8	559.0	878.0	261.4	412.0	10.1	15.2	7.8	2,836.1
Nanglam	45.2	26.0	81.5	251.4	281.1	631.3	1,439.9	511.5	364.7	154.0	384.5	0.0	4,171.1
Samtse													
Dorokha	..	..	..	..	..	..	..	..	..	..	..	..	..
NIE	70.0	20.2	123.7	148.4	216.6	519.8	1,148.6	551.0	373.6	142.8	16.2	24.8	3,355.7

Contd...

TABLE 5.6 (contd.)
TOTAL MONTHLY RAINFALL AT EXISTING STATIONS IN EACH DZONGKHAG, 2002
(Millimeters)

Dzongkhag and station	Month												Total rain fall
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Thimphu													
Gidakom	15.5	0.0	14.2	25.5	84.8	80.3	125.1	127.2	87.5	12.4	0.0	0.0	572.5
Kawang Jangsa	19.2	0.3	9.8	48.9	72.7	103.6	156.5	197.7	89.2	27.3	0.0	0.0	725.2
Taba	13.4	2.4	0.0	46.5	105.1	129.1	237.8	268.0	96.5	56.4	0.2	0.4	955.8
Sarpang													
Bhur	10.0	0.0	96.2	260.0	246.2	891.0	1,005.6	691.4	524.4	116.0	45.8	77.2	3,963.8
Sarpang	9.0	0.0	60.6	263.9	384.6	845.4	1,438.8	616.4	467.0	55.6	0.0	0.0	4,141.3
Trashigang													
Khaling	0.0	0.0	60.0	171.8	168.0	429.0	475.8	366.0	316.0	101.0	46.2	15.0	2,148.8
Radhi	0.0	0.9	14.6	105.6	133.9	194.3	330.4	389.8	181.9	21.8	23.5	1.5	1,398.2
Thrimshing	2.0	4.0	43.2	127.4	93.6	181.8	487.9	178.6	142.8	12.2	24.2	0.0	1,297.7
Wamrong	5.1	1.2	36.0	171.4	157.0	232.0	537.1	216.5	156.7	17.5	0.0	25.1	1,555.6
Tashi Yangtse													
Tashi Yangtse	3.8	0.0	55.4	130.2	170.4	92.1	186.5	234.5	147.2	13.0	0.0	0.0	1,033.1
Yallang	15.2	1.0	48.7	99.3	132.8	101.2	71.6	128.1	150.8	24.8	0.0	3.2	776.7
Trongsa													
Bjizam	5.5	3.5	45.8	64.1	129.2	165.9	195.3	233.9	78.6	53.0	13.8	5.3	993.9
Kuengarabten	76.0	3.0	17.9	44.5	126.5	185.0	292.0	123.6	104.0	22.5	4.0	4.0	1,003.0
Langthel	0.0	0.0	0.0	60.5	23.0	26.0	203.0	85.0	10.9	73.8	19.0	0.0	501.2
Chendebji	30.5	29.5	7.3	90.5	234.6	187.9	313.9	433.2	220.1	16.5	1.0	0.0	1,565.0
Trongsa	..	..	..	..	..	..	..	..	..	..	..	..	..
Tsirang													
Damphu	..	..	..	..	..	..	..	..	..	..	..	..	..
Sunkosh Dobani	6.5	0.0	11.8	46.4	5.3	218.4	487.0	280.4	148.5	86.7	7.6	5.1	1,303.7
Wangdue													
Basochhu	6.0	0.0	15.1	58.9	41.4	140.1	270.5	250.4	64.3	9.2	1.4	0.0	857.3
Nobding	3.0	42.9	30.0	106.0	130.0	271.5	487.5	352.0	272.0	61.5	0.0	3.0	1,759.4
Phobjikha	3.0	12.0	56.9	98.4	79.5	163.4	310.2	266.9	137.3	39.3	0.0	5.5	1,172.4
Samtengang	4.2	0.0	6.0	68.8	38.7	107.5	179.2	172.8	73.4	45.7	9.5	0.0	705.8
Wangdue CARD	3.6	0.0	1.6	52.6	88.4	249.7	156.1	186.6	90.2	21.0	0.0	0.0	849.8
Zhemgang													
Panbang	..	..	..	..	..	..	..	..	..	..	..	..	..
Yebilaptsa	44.0	12.0	153.7	113.4	105.2	330.8	576.8	246.4	185.0	9.8	2.0	11.0	1,790.1

Source: Meteorology Unit, Division of Power, Thimphu.

TABLE 5.7
NUMBER OF AGRICULTURE RESEARCH AND EXTENSION FACILITIES,
BHUTAN, MARCH 2000

Infrastructure	Numbers
RNR (Common services)	
RNR centres	35
National Resource Training Institute (NRTI)	1
RNR Research Centres	4
RNR Research sub-stations	6
Soil and Plant Analytical Laboratory	1
Agriculture	
Agriculture Extension Centres	159
Agriculture Seed Production Farms	11
Plant Protection Centres	3
Farm Mechanization Centres	3
Farm Mechanization Training Centres	1
National Mashroom Centres	1
Animal Husbandry	
Veterinary Hospital (including Thimphu Hospital)	21
Livestock Extension Centres	110
Regional Veterinary Laboratories	4
Satellite Veterinary Laboratories	2
Livestock Farms	11
Fodder Seed Production Centres	2
Sub-Tropical Fodder Seed Production sub-centres	n.a
National Artificial Insemination programme	1
Vaccine Production Centres	1
Royal Veterinary Epidemiology Centre	1
Pheasant Rearing Centre	1
Forestry	
Territorial Division HQs(DFO)	11
Range Offices	36
Beat Offices	53
Forest Training Institute	1
Nature Study Centre	1

Source: Ministry of Agriculture, Thimphu.

TABLE 5.8
IRRIGATION CHANNEL CONSTRUCTED IN DZONGKHAGS FROM 1991 TO 1999

Dzongkhag	New Construction (km)	Renovation (km)	Total (km)
Bumthang	4.00	10.00	14.00
Chhukha	4.00	23.00	27.00
Dagana	4.00	29.00	33.00
Gasa	0.00	3.00	3.00
Haa	3.00	4.00	7.00
Lhuntse	1.00	24.00	25.00
Mongar	3.00	25.00	28.00
Paro	2.00	4.00	6.00
Pemagatshel	1.00	0.20	1.20
Punakha	0.00	34.00	34.00
Samdrup Jongkhar	0.00	20.00	20.00
Samtse	0.00	14.00	14.00
Sarpang	3.00	25.00	28.00
Thimphu	5.00	14.00	19.00
Trashigang	2.00	38.00	40.00
Trashy Yangtse	0.00	30.00	30.00
Trongsa	0.00	24.00	24.00
Tsirang	3.00	76.00	79.00
Wangdue Phodrang	4.00	12.00	16.00
Total	39.00	409.00	448.00

Source: Ministry of Agriculture, Thimphu.

TABLE 5.9
QUANTITY OF PESTICIDES SUPPLIED TO FARMERS, BHUTAN 1986/87 TO 1999/00
(Kilogram or Litre)

Period	Insect-icide	Fungi-icide	Weedi-icide	Acari-icide	Rodenti-icide	Others	Total
1986/87	11,656	2,964	228	0	18	47	14,913
1987/88	23,610	5,741	1,355	0	515	500	31,721
1988/89	33,440	5,214	271	0	347	1,128	40,400
1989/90	57,843	5,259	14,785	0	144	3,473	81,504
1990/91	30,841	2,538	58,180	95	90	140	91,884
1991/92	20,498	2,868	60,400	26	195	2,329	86,316
1992/93	16,066	1,405	57,389	50	113	48	75,071
1993/94	6,435	923	88,046	44	205	531	96,184
1994/95	6,128	563	89,554	12	63	6,846	103,166
1995/96	1,881	2,058	93,244	9	28	7,687	104,907
1996/97	10,883	236	90,730	50	..	10,490	112,389
1997/98	3,493	1,196	117,040	..	..	1,400	123,129
1998/99	1,484	591	512	..	30	10,150	12,767
1999/00	2,752	1,290	137,421	35	1751	53,401	1,240,294

Source: Ministry of Agriculture, Thimphu.

TABLE 5.10
LAND UNDER AGRICULTURAL USE BY DZONGKHAG, 1995
('000 Acres)

Dzongkhag	Wet land	Dry land	Tsheri pangshing	Orchard & plantation	Mixed plantation	Total area
Bumthang	0.20	13.63	0.05	0.02	0.05	13.96
Chhukha	3.80	14.05	4.50	1.04	18.97	42.36
Dagana	5.24	11.81	11.53	3.78	14.94	47.30
Gasa	0.37	0.37	0.32	..	0.82	..
Haa	0.25	5.51	1.95	0.27	0.20	8.18
Lhuntse	2.32	5.51	8.13	..	15.31	..
Mongar	1.56	17.49	14.57	..	13.36	..
Paro	5.80	9.04	0.07	1.28	3.14	19.34
Pemagatshel	..	7.85	49.25	0.02	0.74	..
Punakha	8.03	1.04	0.02	0.07	2.27	11.44
Samdrup Jongkhar	5.41	33.37	47.52	0.25	17.71	104.26
Samtse	15.51	17.54	6.64	3.43	21.71	64.84
Sarpang	11.19	17.12	8.72	1.43	30.78	69.23
Thimphu	3.98	2.82	..	1.63	2.42	..
Trashigang	4.10	39.99	23.24	..	12.67	..
Trash Yangtse	4.99	11.51	2.89	..	8.35	..
Trongsa	4.87	4.72	9.04	0.57	7.19	26.38
Tsirang	5.66	10.65	4.62	0.17	13.41	34.51
Wangdue Phodrang	9.76	8.55	0.20	0.02	4.00	22.53
Zhemgang	2.74	8.47	24.87	0.07	19.54	55.70
Bhutan	95.76	241.02	218.15	14.08	207.58	776.59

Source: LUPP, Ministry of Agriculture, Thimphu.

TABLE 5.11
HOLDERS BY SIZE OF HOLDING IN EACH DZONGKHAG, 1988/89(a)

Dzongkhag	Size of land holding (hectares)							Land holders	All holders
	0.01-0.50	0.50-0.99	1.00-1.49	1.50-1.99	2.00-2.99	3.00-4.99	5 & over		
Bumthang	110	160	150	..	180	180	260	1,130	1,170
Chhukha	170	230	580	350	550	600	790	3,270	3,290
Dagana	*	240	240	220	360	480	190	1,790	1,790
Gasa(b)									
Haa	120	190	170	*	110	*	220	920	930
Lhuntse	410	570	410	250	300	340	200	2,480	2,480
Mongar	570	1,220	1,020	660	450	270	100	4,300	4,300
Paro	170	400	440	360	440	360	130	2,280	2,320
Pemagatshel	230	750	680	420	260	110	*	2,490	2,500
Punakha	250	420	480	280	230	*	120	1,850	1,860
Samdrup Jongkhar(c)	170	590	550	610	1,010	820	350	4,100	4,110
Samtse	390	860	1,020	920	1,790	1,590	1,060	7,640	7,640
Sarpang	200	400	710	900	1,610	1,010	730	5,570	5,580
Thimphu	490	540	320	160	150	110	*	1,800	1,830
Trashigang	1,730	3,190	2,440	1,450	1,790	990	970	12,560	12,600
Trashhi Yangtse(d)									
Trongsa	150	240	300	120	160	170	150	1,290	1,320
Tsirang	140	750	1,040	750	1,420	1,180	440	5,710	5,710
Wangdue Phodrang	600	780	540	270	210	*	*	2,470	2,590
Zhemgang	*	*	180	270	400	480	400	1,830	1,830
Bhutan	5,300	10,750	10,550	7,450	10,810	8,210	5,710	59,180	59,430

Notes:

(a) See footnote (a) on Table 5.7. (b) Figures included with Punakha (c) For Samdrupjongkhar, size data were not available for an estimated 920 holders. These have been excluded from the table. (d) Figures included with Trashigang

Source: Agronomic Survey(1988,1989), CSO, Ministry of Planning, Thimphu.

TABLE 5.12
CULTIVATED AREA, PRODUCTION AND YIELD FOR MAJOR CROPS BY DZONGKKHAG, 2002

Dzongkhag	Wheat			Barley		
	Area (acre)	Product. (kg)	Yield (Kg/acre)	Area (acre)	Product. (kg)	Yield (Kg/acre)
Bumthang	810	323,107	399	416	254,242	611
Chhukha	739	504,180	683	206	109,827	534
Dagana	65	20,977	322	72	19,479	271
Gasa	16	6,808	424	130	68,876	529
Ha	832	356,649	429	65	37,761	585
Lhuentse	81	72,243	891	*	*	*
Mongar	610	721,960	1,184	369	156,920	426
Paro	1,999	734,213	367	145	61,100	421
Pemagatshel	102	25,922	254	91	33,134	378
Punakha	841	325,502	387	3	743	277
S/Jongkhar	88	33,209	378	91	33,134	378
Samtse	546	110,641	203	86	8,030	94
Sarpang	45	12,055	266	65	13,644	210
Thimphu	554	363,613	657	139	57,226	412
Trashigang	125	64,996	521	59	29,150	490
Trongsa	576	279,608	485	390	191,177	490
Tsirang	197	31,047	157	11	957	87
Wangdue	1,600	513,130	321	322	80,556	250
Yangtse	68	31,978	469	262	104,158	398
Zhemgang	193	69,495	361	277	92,963	336
Bhutan	10,086	4,601,333	456	3,119	1,353,077	442

Source: "Renewal Natural Resources Selected Statistics 2002", MoA, Thimphu

TABLE 5.12(contd.)
CULTIVATED AREA, PRODUCTION AND YIELD FOR MAJOR CROPS BY
DZONGKKHAG, 2002

Dzongkhag	Paddy			Maize		
	Area (acre)	Product. (kg)	Yield (Kg/acre)	Area (acre)	Product. (kg)	Yield (Kg/acre)
Bumthang**	74	47,510	645	9	4,552	491
Chhukha	2,015	1,168,954	580	4,058	1,710,866	422
Dagana	2,985	1,660,071	556	4,913	1,002,753	204
Gasa	307	197,131	642	*	*	*
Ha	101	40,393	398	122	46,215	380
Lhuentse	1,545	1,435,418	929	2,409	2,129,529	884
Mongar	1,552	1,318,119	849	8,471	8,833,773	1,043
Paro	2,902	3,895,391	1,343	42	16,633	398
Pemagatshel	78	22,973	296	3,030	2,176,676	718
Punakha	4,262	4,966,304	1,165	280	132,572	474
S/jongkhar	2,784	1,773,877	637	7,556	4,530,277	600
Samtse	6,923	2,187,012	316	7,564	1,241,429	164
Sarpang	4,836	3,324,363	687	5,359	1,885,676	352
Thimphu	1866	2,167,816	1,162	99	65,159	659
Trashigang	2,857	4,056,410	1,420	9,636	10,749,543	1,116
Trongsa	1,649	1,348,834	818	895	710,807	794
Tsirang	3,877	1,875,502	484	4,996	1,065,165	213
Wangdue	3,529	3,950,847	1,120	160	69,208	432
Yangtse	1,532	1,628,628	1,063	2,852	3,064,002	1,074
Zhemgang	1,033	802,170	776	2,557	2,256,197	882
National	46,708	37,867,724	811	65,007	41,691,050	641

Note:

** No paddy is actually grown in Bumthang but some Bumthaps have wet land onwership in other dzongkhags.

Source: "Renewal Natural Resources Selected Statistics 2002", MoA, Thimphu

TABLE 5.13
ANNUAL CROPS, NUMBER OF HOLDERS HARVESTING EACH
CROP AND AREA HARVESTED, BHUTAN, 1988/89

Crop	Number of holder	Percent holder	Crop area (hectare)
Cereals	62,490	96.5	93,060
Rice	43,070	66.5	26,030
Maize	51,470	79.5	41,890
Wheat	20,860	32.2	6,420
Buckwheat	27,170	41.9	7,190
Barley	12,150	18.8	2,580
Millet	27,210	42.0	7,570
Other Cereals	6,620	10.2	1,370
Legumes	17,810	27.5	3,870
Soya beans	11,060	17.1	1,960
Other bean	6,690	10.3	690
Pulses	6,200	9.6	1,220
Oil seeds	21,110	32.6	4,120
Roots and tubers	22,070	34.1	3,720
Potatoes	16,310	25.2	2,460
Ginger	3,550	5.5	360
Radishes	4,700	7.3	240
Turnips	1,950	3.0	150
Tapioca	2,980	4.6	390
Vegetables	8,610	13.3	630
Other crops	1,730	2.7	130
All annual crops	..	..	105,540
Holders with annual crops	62,920	97.1	..
All holders	64,770	100.0	..

Source: Agronomic Survey(1988,1989), CSO, Ministry of Planning, Thimphu.

TABLE 5.14

QUANTITY OF POTATO SEED PLANTED AND PRODUCTION BY VARIETY AND REGION, 1992/1994/95

Location/region	(Metric ton)								
	Desiree			K. Jyoti			Yusikap		
	1992-1993	1993-1994	1994-1995	1992-1993	1993-1994	1994-1995	1992-1993	1993-1994	1994-1995
Quantity planted	161.1	156.4	156.1	95.2	82.5	75.4	90.7	86.3	86.1
Phujikha farm	8.2	6.7	6.7	4.4	4.7	1.3	4.7	4.8	4.1
Trashigang	18.4	20.3	20.2	35.0	34.5	33.3	45.5	35.2	35.1
Pemagatshel	4.0	4.0	4.0	14.0	14.0	13.8	10.0	10.0	10.0
Bumthang	32.6	31.7	31.7	22.0	18.9	17.0	21.4	20.0	20.0
Phubjikha	98.0	93.7	93.5	19.9	10.5	10.2	9.2	16.4	16.2
Quantity produced	414.2	414.9	447.0	216.7	188.8	156.6	238.0	237.9	240.1
Phujikha farm	33.5	33.5	36.0	11.4	11.4	15.8	34.0	34.0	28.3
Trashigang	15.7	15.7	41.6	42.9	42.9	67.7	95.4	95.3	93.1
Pemagatshel	10.7	10.7	8.2	28.7	28.7	30.9	22.1	22.1	21.1
Bumthang	74.1	74.1	86.1	84.9	57.1	13.3	53.2	53.2	56.6
Phubjikha	280.2	281.0	275.3	48.8	48.8	29.0	33.4	33.4	41.5
Seed to production ratio	2.6	2.7	2.9	2.3	2.3	2.1	2.6	2.8	2.8
Phujikha farm	4.1	5.0	5.3	2.6	2.4	12.4	7.2	7.1	5.9
Trashigang	0.9	0.8	2.1	1.2	1.2	2.0	2.1	2.7	2.7
Pemagatshel	2.7	2.7	2.0	2.1	2.1	2.2	2.2	2.2	2.1
Bumthang	2.3	2.3	2.7	3.9	3.0	0.8	2.5	2.7	2.8
Phubjikha	2.9	3.0	2.9	2.5	4.7	2.9	3.6	2.0	2.6

Source: Ministry of Agriculture, Thimphu.

TABLE 5.15

PERENNIAL CROPS BY ZONE, 1988/89

Crop	('000 trees)					
	Thimphu	Zone I	Zone II	Zone III	Zone IV	Total
Temperate fruits	55.3	109.2	65.2	59.9	104.0	393.6
Apples	49.7	93.6	13.4	47.0	31.8	235.5
Apricots	0.8	1.5	4.9	0.7	3.2	11.1
Peaches	2.0	7.6	29.3	5.9	32.4	77.2
Pears	1.1	2.8	13.0	3.5	7.8	28.2
Plums	0.5	0.8	3.4	0.8	5.6	11.1
Walnut	..	..	..	1.9	17.4	19.3
Mangosteen	..	..	..	..	2.4	2.4
Sub-tropical fruits	6.9	1,328.5	729.2	1,112.9	466.8	3,644.3
Oranges	4.6	1,148.3	504.8	762.1	175.4	2,595.2
Lemons	0.3	74.5	9.1	23.5	3.1	110.5
Bananas	1.1	86.7	182.8	286.6	258.2	815.4
Guavas	0.7	9.3	25.2	10.4	15.6	61.2
Mangoes	..	3.3	2.3	9.9	3.2	18.7
Jackfruit	..	3.1	3.0	4.0	2.2	12.3
Litchi	..	..	..	3.8	0.7	4.5
Papaya	..	..	..	3.1	2.1	5.2
Persimmons	..	..	..	..	1.9	1.9
Other tree crops	..	5,883.7	5,400.7	4,407.1	60.1	15,751.6
Cardamom(b)	..	5,610.4	5,318.3	4,054.5	20.5	15,003.7
Areconut	..	262.9	..	347.3	34.6	644.8
Tea	..	8.0	2.8	5.3	0.5	16.6

Source: Agronomic Survey(1988,1989), CSO, Ministry of Planning, Thimphu.

TABLE 5.16
HOLDERS BY SIZE OF LIVESTOCK HOLDING, 1988/89
(^{'000 holders})

Number of livestock	Cattle	Yak	Buffalo	Pig	Goat	Sheep	Horse	Donkey/ mule	Chicken
Zero	9.2	62.5	62.7	29.6	47.7	57.7	46.9	60.7	12.7
1 - 2	8.2	*	0.6	24.9	7.5	2.4	14.3	3.0	14.6
3 - 4	10.9	0.2	0.3	7.0	5.7	1.2	2.0	0.1	13.2
5 - 9	23.1	0.1	0.3	2.2	2.6	1.3	0.6	*	13.7
10 - 14	8.1	*	*	0.2	0.2	0.4	*	*	5.1
15 - 19	2.4	0.2	*	*	*	*	*	*	2.1
20 - 29	1.5	0.1	*	*	*	0.2	*	*	1.6
30 & Over	0.5	0.5	*	*	*	0.1	*	*	0.8
Total	63.9	63.6	63.9	63.9	63.7	63.3	63.8	63.8	63.8
(percentage of all holders)									
Zero	14.4	97.8	98.1	46.3	74.6	90.3	73.4	95.0	19.9
1 - 2	12.8	*	0.9	39.0	11.7	3.8	22.4	4.7	22.8
3 - 4	17.1	0.3	0.5	11.0	8.9	1.9	3.1	0.2	20.7
5 - 9	36.2	0.2	0.5	3.4	4.1	2.0	0.9	*	21.4
10 - 14	12.7	*	*	0.3	0.3	0.6	*	*	8.0
15 - 19	3.8	0.3	*	*	*	*	*	*	3.3
20 - 29	2.3	0.2	*	*	*	0.3	*	*	2.5
30 & Over	0.8	0.8	*	*	*	0.2	*	*	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Agronomic Survey(1988,1989), CSO, Ministry of Planning, Thimphu.

TABLE 5.17
NUMBER OF LIVESTOCK BY TYPE AND DZONGKHAG, 2002

Dzongkhag	Cattle	Yak	Horses	Pigs	Poultry
Thimphu	6,899	3,698**	436	909	3,151
Paro	16,637	4,061	1,509	2,771	5,120
Ha	9,871	3,320	1,248	656	2,941
Chhukha	26,816	n.a	645	4,002	16,323
Samtse	29,499	40	247	1,570	21,982
Punakha	10,470	n.a	721	2,833	4,722
Gasa	917	3,786	894	72	584
Wangdue	19,652	2,317	1,424	4,151	6,179
Tsirang	16,978	n.a	363	1,572	25,863
Dagana	16,303	29	412	2,625	17,676
Bumthang	10,654	2,917	1,147	n.a	2,348
Trongsa	12,215	n.a	421	222	3,917
Zhamgang	11,111	n.a	1,489	1,298	6,830
Sarpang	26,762	n.a	447	1,573	27,537
Lhuentse	17,659	20	2,627	1,999	10,616
Mongar	27,649	63	2,708	4,267	18,224
Trashigang	34,480	11,608	5,769	5,204	22,929
Yangtse	13,733	n.a	2,327	2,654	6,564
Pemagatshel	9,085	9	607	1,237	5,738
S/Jongkhar	22,514	n.a	2,445	1,878	11,332
National	339,904	31,868	27,895	41,493	220,576

Note:

** livestock figures for Soe, Naro and Lingzhi were not included.

Source: "Renewal Natural Resources Selected Statistics 2002", MoA, Thimphu

TABLE 5.18
NUMBER OF SELECTED LIVESTOCK BY BREED, BHUTAN, 1997 TO 2000

Type of livestock	1997	1998	1999	2000
Cattle	314,399.0	n.a	344,595.0	32,050.9
Horse	32,062.0	n.a	31,255.0	27,887.0
Sheep	32,137.0	n.a	24,840.0	22,880.0
Pig	49,294.0	n.a	52,264.0	41,401.0
Poultry	180,001.0	n.a	293,933.0	230,723.0
Yak	28,281.0	n.a	39,604.0	34,928.0
Buffalo	3,336.0	n.a	1,790.0	1,800.0
Goat	35,593.0	n.a	36,007.0	31,328.0

Source: "Facts and Figures of RNR Sector 2003(October 29, 2003)", PPD, MOA, Thimphu.

TABLE 5.19
IMPORTS AND DISTRIBUTION OF FOOD ITEMS BY FOOD CORPORATION
OF BHUTAN, 1998 TO 2003

Commodity	1998	1999	2000	2001	2002	2003
Imports						
Rice	9,005.0	13,225.9	6,302.1	6,599.0	7,434.0	5,686.2
Wheat	1,240.0	2,400.0	924.8	1,371.4	2,310.0	960.0
Sugar	3,780.0	3,150.0	3,780.0	3,154.7	1,924.5	659.5
Salt	37.0	0.0	0.0	0.0	162.9	240.7
Oil	34.0	133.1	185.6	162.2	379.9	163.1
Kharang	198.4	549.0	390.0	174.9	0.0	0.0
Sales						
Rice	8,640.0	n.a	8,601.2	5,877.8	8,059.6	4,592.9
Wheat	538.0	n.a	1,456.9	846.8	1,174.6	551.1
Sugar	3,605.0	n.a	3,319.1	3,266.0	2,332.0	561.7
Salt	37.0	n.a	0.0	45.6	122.5	130.9
Oil	215.0	n.a	187.6	200.5	377.5	231.9

Note:

*From 1 Jan. 2003 to end of June 2003

Source: Food Corporation of Bhutan, Phuntsholing.

TABLE 5.20
QUANTITY OF AGRICULTURAL PRODUCE HANDLED BY FOOD CORPORATION
OF BHUTAN, 1998 TO 2003

Commodity	1998	1999	2000	2001	2002	2003*
Potatoes	18,194.0	20,457.3	18,026.5	2,545.5	23,035.6	48.4
Vegetables	1,367.0	2,694.5	1,627.2	1,654.2	2,227.4	129.7
Apples	973.0	829.2	421.0	491.7	465.0	0.0
Oranges	4,327.0	7,166.4	2,689.8	4,639.8	2,065.3	2,924.4
Cardamom	1.0	0.3	0.0	0.0	0.1	0.0
Ginger	640.0	24.0	3.8	479.5	514.5	127.5
Garlic	0.8	1.1	0.6	0.0	0.2	0.1
Arecanut	0.8	0.6	0.7	63.1	86.4	131.0
Supari(dried doma)	n.a	0.0	0.0	0.0	0.0	0.0
Dry chilli	36.0	16.3	9.1	4.4	12.2	2.1
Kidney bean(rajma)	39.0	22.1	37.4	0.0	50.2	17.1
Soya bean	67.0	49.2	30.2	169.8	17.3	16.1
Pulses	2.0	0.4	0.0	0.0	3.4	0.9
Mustard	2.0	0.0	0.0	0.0	0.0	0.0
Pipla (wild)	16.0	10.9	0.0	0.0	1.0	0.3
Chirota (wild)	7.0	0.0	0.5	1.2	0.0	0.0
Lemon	2.0	0.0	0.9	3.2	1.1	0.0
Apricot	n.a	n.a	n.a	0.0	0.0	0.0
Peach	0.9	3.5	0.5	3.2	2.1	0.0
Plum	1.0	1.3	0.5	2.2	0.6	0.0
Pear	0.2	1.4	1.5	0.4	0.3	0.0
Dry bean	0.1	n.a	n.a	0.0	0.0	0.0

Note:

*From 1 Jan. 2003 to end of June 2003

Source: Food Corporation of Bhutan, Phuntsholing.

TABLE 5.21

QUANTITY AND VALUE OF FOREST PRODUCTS SUPPLIED BY TYPE AND USERS
1995/96 TO 1997/98

User and product type	1995/96		1996/97		1997/98	
	Quantity	Value	Quantity	Value	Quantity	Value
Rural population						
Trees (numbers)	110,001.7	2.2	41,121.0	0.5	63,593.0	0.7
Poles (numbers)	2,742.5	0.3	50,702.0	0.1	124,549.0	0.2
Logged timber (cubic metre)	228.0	0.0	228.0	0.0	1,581.1	0.0
Firewood (cubic metre)	2,864.0	0.1	2,864.0	0.1	336.0	0.0
Charcoal (kg)	n.a	..	347,870.0	..	n.a	n.a
Bamboos (numbers)	593,839.0	0.1	301,736.0	0.1	347,755.0	0.0
Urban population						
Trees (number)	27,383.1	6.3	42,367.8	6.3	51,634.0	1.8
Poles (number)	1,540.9	0.4	1,038.4	0.4	51,296.0	0.5
Logged timber (cubic metre)	2,728.7	0.8	13,513.8	0.8	214,021.4	3.2
Firewood (cubic metre)	68,458.5	0.8	41,168.8	0.8	9,274.0	0.2
Charcoal (kg)	199,870.0	0.0	292,123.0	0.0	1,544,521.0	0.2
Bamboos (numbers)	300,636.0	0.1	334,567.0	0.1	601,553.0	0.1
Government agencies						
Trees (numbers)	..	..	..	..	..	..
Poles (numbers)	..	..	..	..	..	..
Logged timber (cubic metre)	..	..	..	..	..	..
Firewood (cubic metre)	..	..	..	..	..	..
Charcoal (kg)	..	..	..	..	..	..
Bamboos (number)	..	..	..	..	..	..
Free of Royalty						
Trees (number)	n.a	n.a	4,955.9	..	1,335.0	n.a
Poles (number)	n.a	n.a	479.0	..	26,537.0	n.a
Logged timber (cubic metre)	n.a	n.a	6,319.3	..	50.0	n.a
Firewood (cubic metre)	n.a	n.a	48,951.0	..	5,617.9	n.a
Charcoal (kg)	n.a	n.a	..	..	20,000.0	n.a
Bamboos (number)	n.a	n.a	285,068.0	..	554,934.0	n.a
Bhutan						
Trees (number)	137,384.7	8.5	83,488.8	..	115,227.0	n.a
Poles (number)	4,283.4	0.7	51,740.4	..	175,845.0	n.a
Logged timber (cubic metre)	2,956.7	0.8	13,741.7	..	215,602.5	n.a
Firewood (cubic metre)	71,322.5	0.9	44,032.8	..	9,610.0	n.a
Charcoal (kg)	199,870.0	0.0	639,993.0	..	1,544,521.0	n.a
Bamboos (number)	894,475.0	0.2	636,303.0	..	949,308.0	n.a

Note:

1. Urban population figures for 1995/96 includes Govt. agencies and values given in million Nu.

2. Units for trees, poles and logged timbers were measured in cft.

Source: Forestry Services Division, Thimphu.

TABLE 5.22

DETAILS OF PROTECTED AREAS IN BHUTAN, BY YEAR OF ESTABLISHMENT
AND AREA, 2000

Name of Area	Establishment year	Area (sq.Km)	Percent of total area
Existing Protected Areas		10,513	100.0
Torsa Strict Nature Reserve	1993	644	6.1
Jigme Dorji National Park	1993	4,200	40.0
Black Mountain National Park	1993	1,400	13.3
Thrumshingla National Park	1998	768	7.3
Royal Manas National Park	1993	1,000	9.5
Sakteng Wildlife Sanctuary	1993	650	6.2
Bomdeling Wildlife Sanctuary	1993	1,300	12.4
Phibsoo Wildlife Sanctuary	1974	278	2.6
Khaling Wildlife Sanctuary	1974	273	2.6

Source: Forestry Services Division, Thimphu

TABLE 5.23

PRODUCTION OF LOGWOOD, 1995 TO 2000

Item	1997	1998	1999	2000
Logwood	49,483.3	52,200.9	53,672.0	48,205.7
Commercial logwood	n.a	n.a	n.a	n.a
Construction and other uses	27,279.4	23,663.7	45,546.2	43,592.4
Rural construction	5,382.9	5,058.9	6,858.3	4,593.8
Urban construction	16,148.0	20,691.1	1,267.6	19.5
Government construction	673.0	543.8	n.a	n.a
Others	n.a	2,243.3	n.a	n.a
Firewood	n.a	n.a	n.a	n.a
Total	49,483.3	52,200.9	53,672.0	48,205.7

Notes:

(a) Years refer to 1 April to 31 March while 1987/88 refer to fifteen months period April to June

For 1988/89 is for 12 months period July to June. Figures exclude collection of firewood by individuals

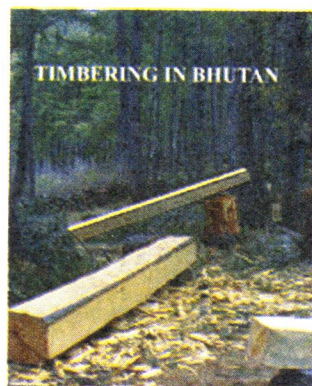
(b) Production declined mainly because of road blokage during monsoon and shortage of labourers

(c) unit of measurement is in thousand of cubic feet unlike other years

"I" figure is included with urban construction

Source: Forestry Services Division, Thimphu

CHAPTER 6: INDUSTRIES



The subject 'Industries' covers the whole range of industrial activities carried out by businesses in all fields including mining, manufacturing, wholesale and retail trade, and other service industries. In Bhutan, the industrial sector has until recently played a relatively small role in the economy of the kingdom.

The mining industry in Bhutan is as yet relatively undeveloped. The kingdom has significant deposits of a number of mineral resources, including limestone, coal, graphite, gypsum, slate and dolomite. Most mining activities are limited to

relatively small operations, mainly involved in the mining of dolomite, gypsum, limestone, slate, coal, marbles, quartzite and talc.

The manufacturing industry is dominated by a small number of major operators such as the Penden Cement Plant, the Bhutan Board Products Ltd., the first chemical plant, Bhutan Carbide and Chemicals Ltd. established during 1988, the Bhutan Ferro Alloys Ltd.; and Bhutan Agro Industries Ltd. Besides these, there are a number of other small manufacturing plants concentrated in the food processing. Cottage industry also plays a prominent role with its good timber resources and favorable agricultural conditions. There is lot of scope for expansion of the manufacturing sector particularly in these areas.

As the industrial sector grows in Bhutan, statistics on industry will become increasingly important. The Department of Trade keeps a record of all industrial licenses and activities. Besides, Censuses of Manufacturing Industries conducted at regular intervals viz. Industrial Census of 1998 and 2001 have been the source of important information on Industries. For example, information on the number of industries in operation, types of industries, employment in industries etc. presented in this chapter are the results from those Censuses.

According to the information collected in 2003, the number of industrial license holders increased from 523 to 730 in 2003, with more than 90% of the establishments operated by the private sectors. Most of the existing industrial establishments are small scale or cottage industries.

TABLE 6.1
NUMBER OF INDUSTRIAL ESTABLISHMENTS BY SECTOR, 1998 TO 2003

Sector	1998	1999	2000	2001	2002	2003*
Production & manufacturing	447	486	523	569	586	730
New registration	35	34	33	37	18	20
Existing establishments	412	452	490	532	568	710
Services	2,530	2,922	3,281	3,773	4,272	4,478
New registration	218	384	303	422	430	288
Existing establishments	2,312	2,538	2,978	3,351	3,842	4,190
Contract	1,874	2,308	5,212	8,536	9,050	9,102
New registration	223	437	1,091	2,564	480	59
Existing establishments	1,651	1,871	4,121	5,972	8,570	9,043
All sectors	4,851	5,716	9,016	12,878	13,908	14,310

Note:

*As of 30 June 2003.

Source: Department of Industry, MTI, Thimphu.

TABLE 6.2
NUMBER OF LICENSED FIRMS IN MANUFACTURING AND MINING INDUSTRIES
BY SECTOR, 2002 TO 2003

Industry	2002				2003*			
	Public	Joint	Private	Total	Public	Joint	Private	Total
Mining	0	0	6	6	0	0	6	6
Manufacturing	..	..	..	0	..	..	..	0
Food processing/milling	5	1	115	121	5	1	120	126
Textiles and Clothing	0	0	1	1	0	0	1	1
Wood and Paper Products	3	3	318	324	3	3	330	336
Chemical Products	0	0	0	0	0	0	0	0
Mineral Products	0	2	38	40	0	2	38	40
Other	2	0	92	94	4	0	217	221
Total mining & manufacturing	10	6	570	586	12	6	712	730

Note:

*As of 30 June 2003.

Source: Department of Industry, MTI, Thimphu.

TABLE 6.3
NUMBER OF INDUSTRIES BY SECTOR, SIZE AND TYPE, 1998 TO 2003

Industrial establishments	1998	1999	2000	2001	2002	2003*
Sector						
Private	4,813	5,678	8,959	12,807	13,833	14,230
Joint	5	5	23	24	24	24
Public	33	33	34	47	51	56
Size						
Large scale	36	38	39	41	44	48
Medium scale	41	39	43	44	50	54
Small scale	337	345	409	473	467	469
Cottage scale	734	832	878	3,784	4,277	4,637
Mini scale	1,829	2,154	2,435			
Other (Contract)	1,874	2,308	5,212	8,536	9,050	9,102
Type						
Production & Manufacturing	447	486	523	569	586	730
Agro based	105	104	109	116	121	126
Forest based	239	270	288	317	324	336
Mineral based	37	37	42	46	46	46
Others	66	75	84	90	95	222
Contract	1,874	2,308	5,212	8,536	9,050	9,102
Services	2,530	2,922	3,281	3,773	4,272	4,478
All industries	4,851	5,716	9,016	12,878	13,908	14,310

Notes:

*As of 30 June 2003.

Mini scale classification discontinued and industries falling under the scale are clubbed under Cottage scale.

Source: Department of Industry, MTI, Thimphu.

TABLE 6.4
NUMBER OF CONTRACT FIRMS BY TYPE, BY DZONGKHAG, 2003*

Dzongkhag	Class of contract firm				Total
	A	B	C	Petty	
Bumthang	7	8	23	180	218
Chhukha	41	21	126	571	759
Dagana	0	0	14	258	272
Gasa	0	0	0	30	30
Haa	0	5	44	148	197
Lhuntse	0	0	23	95	118
Mongar	2	1	60	285	348
Paro	0	16	73	309	398
Pemagatshel	0	4	10	163	177
Punakha	0	2	16	243	261
Samdrup Jongkhar	15	9	71	251	346
Samtse	0	1	46	229	276
Sarpang	4	4	28	383	419
Thimphu	127	90	507	2,808	3,532
Trashigang	5	27	57	365	454
Trashy Yangtse	0	0	37	95	132
Trongsa	0	0	24	146	170
Tsirang	0	0	5	114	119
Wangdue Phodrang	0	0	20	596	616
Zhemgang	0	0	32	228	260
Bhutan	201	188	1,216	7,497	9,102

Contd...

TABLE 6.4(contd.)
NUMBER OF CONTRACT FIRMS, BY TYPE, BY DZONGKHAG, 2003*

	Scale of industry				Total
	Small	Medium	Large	Cottage	
Bumthang	11	0	1	148	160
Chhukha	124	21	17	485	647
Dagana	1	0	0	46	47
Gasa	0	0	0	2	2
Haa	5	1	0	78	84
Lhuntse	..	0	0	19	19
Mongar	17	0	0	126	143
Paro	18	4	2	332	356
Pemagatshel	5	0	3	55	63
Punakha	5	1	0	68	74
Samdrup Jongkhar	14	1	4	323	342
Samtse	38	4	5	179	226
Sarpang	27	0	2	292	321
Thimphu	181	20	13	1,916	2,130
Trashigang	10	1	0	173	184
Trashy Yangtse	1	0	0	39	40
Trongsa	1	0	1	60	62
Tsirang	1	0	0	97	98
Wangdue Phodrang	10	1	0	133	144
Zhemgang	0	0	0	66	66
Bhutan	469	54	48	4,637	5,208

Notes:

*As of 30 June 2003.

Size of establishments are determined by their input capitals. Cottage with Nu. 1 or less, Small is Nu. 1 to 10 million, medium is Nu. 10 to 100 million, Large is Nu. 100 million or more.

Source: Department of Industry, MTI, Thimphu.

TABLE 6.5(a)
NUMBER OF INDUSTRIES BY TYPE, BY DZONGKHAG, 2002

Dzongkhag	Agro based	Forest based	Mineral based	Services	Contract	Others	All types
Bumthang	8	22	0	106	218	3	357
Chhukha	25	31	7	536	766	31	1,396
Dagana	0	0	0	46	271	0	317
Gasa	0	0	0	2	29	0	31
Haa	1	12	0	64	195	0	272
Lhuntse	0	3	0	16	117	0	136
Mongar	6	17	2	108	344	0	477
Paro	5	40	2	276	397	6	726
Pemagatshel	2	5	4	36	188	1	236
Punakha	1	2	0	65	261	0	329
Samdrup Jongkhar	11	18	3	287	338	4	661
Samtse	13	9	12	180	274	6	494
Sarpang	19	14	3	280	418	2	736
Thimphu	19	107	10	1,792	3,495	37	5,460
Trashigang	2	17	0	147	449	2	617
Trashy Yangtse	1	5	0	29	132	0	167
Trongsa	1	5	0	48	170	0	224
Tsirang	2	1	0	87	118	0	208
Wangdue Phodrang	2	6	3	116	613	2	742
Zhemgang	3	10	0	51	257	1	322
Bhutan	121	324	46	4,272	9,050	95	13,908

Source: Department of Industry, MTI, Thimphu.

TABLE 6.5(b)
NUMBER OF INDUSTRIES BY TYPE BY DZONGKHAG, 2003*

Dzongkhag	Agro based	Forest based	Mineral based	Services	Contract	Others	All types
Bumthang	9	23	..	125	218	3	378
Chhukha	25	33	7	545	759	37	1,406
Dagana	..	..	..	47	272	..	319
Gasa	..	..	..	2	30	..	32
Haa	1	12	..	71	197	..	281
Lhuntse	..	3	..	16	118	..	137
Mongar	7	16	2	118	348	..	491
Paro	6	42	2	295	398	11	754
Pemagatshel	2	6	4	50	177	1	240
Punakha	1	3	..	70	261	..	335
Samdrup Jongkhar	10	20	3	301	346	8	688
Samtse	13	9	12	186	276	6	502
Sarpang	19	14	3	283	419	2	740
Thimphu	21	110	10	1,843	3,532	146	5,662
Trashigang	2	17	..	163	454	2	638
Trashy Yangtse	1	5	..	34	132	..	172
Trongsa	1	5	..	56	170	..	232
Tsirang	3	1	..	94	119	..	217
Wangdue Phodrang	2	7	3	127	616	5	760
Zhemgang	3	10	..	52	260	1	326
Bhutan	126	336	46	4,478	9,102	222	14,310

Note:

*As of 30 June 2003.

Source: Department of Industry, MTI, Thimphu.

TABLE 6.6
NUMBER OF MINING AND MANUFACTURING INDUSTRIES BY EMPLOYMENT SIZE, 1989

Industry	Employment size (persons)						Total
	1-5	6-9	10-19	20-49	50-99	100+	
Mining and quarrying	2	0	0	5	0	4	11
Manufacturing	35	21	62	22	6	11	157
Food, beverage and tobacco	17	5	10	1	1	4	38
Textile, wearing apparel etc.	1	1	2	2	0	1	7
Wood, wood products & furniture	7	5	39	16	1	3	71
Pulp, paper and printing	3	3	3	1	1	0	11
Chemical, rubber and plastics	5	7	4	1	1	2	20
Non-metalic mineral products	2	0	2	0	2	1	7
Metal products and other manufacturing	0	0	2	1	0	0	3
Total mining and manufacturing	2	0	0	0	6	4	11

Source: Department of Industry, MTI, Thimphu.

TABLE 6.7
PERCENTAGE OF EMPLOYEES BY NATIONALITY IN MINING AND MANUFACTURING INDUSTRIES, 1989

Industry	Employee		
	National(%)	Other(%)	Total(%)
Mining and quarrying	30	70	100
Manufacturing	57	43	100
Food, beverage and tobacco	35	65	100
Textile, wearing apparel etc.	81	19	100
Wood, wood products and furniture	59	41	100
Pulp, paper and printing	77	23	100
Chemical, rubber and plastics	50	50	100
Non-metalic mineral products	67	33	100
Metal products and other manufacturing	66	34	100

Source: Department of Industry, MTI, Thimphu.

TABLE 6.8
PRODUCTION OF MINES AND MINERALS, 1998 TO 2001

Minerals	1998	1999	2000	2001
Dolomites ('000 tonnes or mt)	214,291.9	224,219.0	283,744.0	335,945.7
Lime stone ('000 tonnes or mt)	301,511.4	415,930.0	434,920.0	507,554.4
Gypsum ('000 tonnes or mt)	74,007.0	100,542.0	86,951.0	100,906.8
Slate mines ('000 square feet)	9,990.0	n.a	n.a	n.a
Coal mines ('000 tonnes or mt)	67,494.8	68,153.0	65,818.0	84,595.5
Marbles				
Chips ('000 tonnes or mt)	8,869.2	18,378.0	13,306.0	4,993.3
Slabs ('000 square feet)	23,194.5	24,439.0	20,242.0	n.a
Stone	..	..	..	10,327.2
Quartzite ('000 tonnes)	73,047.4	29,949.0	48,671.0	45,551.5
Talc (tonnes)	10,252.6	11,509.0	8,869.0	12,936.6
Iron Ore ('000 mt)	1,109.0	3,106.0	3,106.0	n.a
Pink Shale ('000 mt)	n.a	n.a	n.a	135.5

Source: Department of Geology and Mines, MTI, Thimphu.

TABLE 6.9
PRODUCTION AND USE OF MINES AND MINERALS, BHUTAN, 2000 TO 2001

Minerals	2000			2001		
	Total	Exports	Domestic use	Total	Exports	Domestic use
Dolomites ('000 tonnes)	283,744.0	283,744.0	na	335,945.7	335,926.2	19.5
Lime stone ('000 tonnes)	434,920.0	5,040.0	429,880.0	507,554.0	12,748.0	494,806.5
Gypsum ('000 tonnes)	86,951.0	86,348.0	603.0	100,906.8	80,035.9	20,871.0
Coal mines ('000 tonnes)	65,818.0	30,698.0	35,119.0	84,595.5	40,440.9	44,154.6
Stone	n.a	n.a	n.a	10,327.2	217.0	10,110.2
Marbles	n.a	n.a	n.a	4,993.3	0.00	4,993.3
Chips ('000 tonnes)	13,306.0	13,306.0	n.a	n.a	n.a	n.a
Slabs ('000 sq. ft.)	20,242.0	n.a	20,242.0	n.a	n.a	n.a
Quartzite ('000 tonnes)	48,671.0	6,952.0	41,719.0	45,551.5	4,185.1	41,366.3
Talc (tonnes)	8,869.0	8,869.0	n.a	12,936.0	12,936.6	0.00
Iron Ore ('000 mt)	3,106.0	n.a	3,106.0	n.a	n.a	n.a
Pink Shale ('000 mt)	n.a	n.a	n.a	135.5	135.5	0.00

Source: Department of Geology and Mines, MTI, Thimphu.

TABLE 6.10
NUMBER OF ESTABLISHMENT BY TYPE OF INDUSTRY AND SECTOR, 1997

Type of Industry	Private sector	Joint sector	Public sector	Semi-government	Others	Company	All Sectors
Forest based industry	89	3	..	1	1	3	97
Agrobased industry	34	2	2	1	2	5	46
Mineralbased industry	18	2	1	..	..	6	27
Other industry	36	1	5	..	1	..	43
All industries	177	8	8	2	4	14	213

Source: 1998 National Census of Manufacturing Industries.

TABLE 6.11
DISTRIBUTION OF ESTABLISHMENT BY DZONGKHAGS, 1997

Dzongkhag	Number of establishment	Percentage
Bumthang	15	7.0
Chukha	43	20.2
Dagana	..	..
Gasa	..	..
Haa	3	1.4
Lhuentse	..	..
Mongar	6	2.8
Paro	11	5.2
Pemagatshel	2	0.9
Punakha	..	..
Samdrup Jongkhar	15	7.0
Samtse	21	9.9
Sarpang	11	5.2
Thimphu	70	32.9
Trashigang	5	2.3
Trashy Yangtse	3	1.4
Trongsa	2	0.9
Tsirang	..	..
Wangdue Phodrang	3	1.4
Zhemgang	3	1.4
All dzongkhags	213	100.0

Source: National Census of Manufacturing Industries, 1998..

TABLE 6.12
NUMBER OF ESTABLISHMENT BY SECTOR & SIZE OF EMPLOYMENT, 1997

Legal status by industry	Total persons engaged				
	1-5	6-10	11-20	21-30	31-40
Private Sector	52	47	38	13	5
Forest-based industry	26	22	23	9	1
Agro-based industry	15	9	5	1	-
Mineral-based industry	1	4	3	1	3
Other industry	10	12	7	2	1
Joint Sector	..	..	1	3	1
Forest-based industry	..	..	1	1	..
Agro-based industry	..	..	..	1	..
Mineral-based industry	..	..	..	1	..
Other industry	..	..	..	..	1
Public Sector	..	..	2	..	..
Agro-based industry	..	..	..	..	..
Mineral-based industry	..	..	1	..	..
Other industry	..	..	1	..	..
Semi-government	..	..	..	..	..
Forest-based industry	..	..	..	..	..
Agro-based industry	..	..	..	..	..
Other Sector	..	..	1	..	1
Forest-based industry	..	..	1	..	-
Agro-based industry	..	..	..	..	-
Other industry	..	..	..	..	1
Company	..	1	4	1	..
Forest-based industry	..	..	2	..	..
Agro-based industry	..	..	2	1	..
Mineral-based industry	..	1	..	..	..
Table Total	52	48	46	17	7

Contd...

TABLE 6.12 (contd.)
NUMBER OF ESTABLISHMENT BY SECTOR & SIZE OF EMPLOYMENT, 1997

Legal status by industry						Total
	41-50	51-100	101-200	201-300	300+	
Private Sector	1	11	5	1	4	177
Forest-based industry	..	6	2	..	..	89
Agro-based industry	..	2	..	..	2	34
Mineral-based industry	..	2	1	1	2	18
Other industry	1	1	2	..	..	36
Joint Sector	..	..	1	..	2	8
Forest-based industry	..	..	..	..	1	3
Agro-based industry	..	..	1	..	..	2
Mineral-based industry	..	..	..	..	1	2
Other industry	..	..	..	..	..	1
Public Sector	1	1	2	..	2	8
Agro-based industry	..	..	1	..	1	2
Mineral-based industry	..	..	..	..	..	1
Other industry	1	1	1	..	1	5
Semi-government	..	2	..	..	..	2
Forest-based industry	..	1	..	..	..	1
Agro-based industry	..	1	..	..	..	1
Other Sector	..	2	..	..	..	4
Forest-based industry	..	..	..	..	..	1
Agro-based industry	..	2	..	..	..	2
Other industry	..	..	..	..	..	1
Company	2	1	3	..	2	14
Forest-based industry	1	..	..	..	..	3
Agro-based industry	..	..	2	..	..	5
Mineral-based industry	1	1	1	..	2	6
Table Total	4	17	11	1	10	213

Source: 1998 National Census of Manufacturing Industries.

TABLE 6.13

PERSONS ENGAGED AT THE END OF EACH QUARTER BY TYPE OF WORK BY INDUSTRY, 1997

Type of industry	Production Line Workers			
	Feb.	May	Aug.	Nov.
Forest based industry	1,240	1,348	1,342	1,307
Agrobased industry	1,571	1,457	1,411	1,490
Mineralbased industry	1,497	1,512	1,531	1,517
Other industry	713	708	764	800
All industries	5,021	5,025	5,048	5,114

Contd...

TABLE 6.13(contd.)

PERSON ENGAGED AT THE END OF EACH QUARTER BY TYPE OF WORK BY INDUSTRY, 1997

Type of industry	Non-production Line Workers			
	Feb.	May	Aug.	Nov.
Forest based industry	474	507	501	487
Agrobased industry	363	360	339	347
Mineralbased industry	1,676	1,548	1,549	1,675
Other industry	111	109	110	110
All industries	2,624	2,524	2,499	2,619

Source: 1998 National Census of Manufacturing Industries.

TABLE 6.14

NUMBER OF PERSON ENGAGED IN INDUSTRIAL SECTORS BY EMPLOYMENT STATUS AND SEX, 1997

Sector	Male			
	All male	Proprietor	Unpaid	Employee
Private	3,712	71	10	3,631
Joint Sector	576	15	..	561
Public Sector	1,355	..	..	1,355
Semi-government	98	..	..	98
Others	98	1	..	97
Company	1,039	1	..	1,038
Table Total	6,878	88	10	6,780

Contd...

TABLE 6.14(contd.)

NUMBER OF PERSON ENGAGED IN INDUSTRIAL SECTORS BY EMPLOYMENT STATUS AND SEX, 1997

Sector	Female			
	All female	Proprietor	Unpaid	Employee
Private	1,415	21	10	1,382
Joint Sector	69	1	..	68
Public Sector	507	..	..	507
Semi-government	48	..	..	48
Others	75	..	..	75
Company	787	..	..	787
Table Total	2,901	22	10	2,867

Note:

Excludes 2813 employees whose differentiation by sex was not available.

Source: 1998 National Census of Manufacturing Industries.

TABLE 6.15

PERCENT OF EXPENDITURE ON FUEL USED BY SECTOR, 1997

Sector	Fuel					
	Kero- sene	Fuel oil	Wood/ charcoal	Gas	Other	All fuel
Private sector	88.7	16.7	28.4	53.2	43.1	35.4
Joint sector	0.2	..	45.2	..	1.1	24.7
Public sector	0.5	83.3	15.9	38.3	..	9.5
Semi-government	..	..	..	..	..	..
Others	..	..	..	..	..	..
Company	10.6	..	10.5	8.5	55.8	30.4
All sectors	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1998 National Census of Manufacturing Industries.

CHAPTER 7: TRANSPORT AND COMMUNICATION



About two and half decades back, Bhutan had fragmented transport and communications network. An efficient road system for a landlocked country assumes paramount importance as it plays a crucial role in supporting all development activities and in stimulating domestic and international trade. The first appearance of the motor vehicle was

in 1962 and surface transport continues to be the main means of transport. The Bhutan Government Transport Service (BGTS) originally entrusted with goods transportation was restructured to concentrate on passenger transport. In 1985 the gradual privatization of the public transport services was achieved in 1990 with 21 operators managing a fleet of more than 100 buses on 73 routes. The Government in order to promote and see the development of surface transport, with emphasis on safety, formulated Roads Safety and Transport Act, which became operational since October 1997. In the last 25 years, tremendous achievements were made in establishing 3746 kilometers of roads and several motorable bridges. In the difficult areas where the construction of motorable road has not yet begun, suspension bridges provide the vital transport links. Today the Department of Roads is responsible for the design and planning of roads and inseting standards for quality.

Druk Air, the national airline commenced providing services in the February 1983 and commercialized in 1985. Bhutan established its international air links with Kolkata and today it flies to six destinations in the region. The Division of Civil Aviation was established in 1986 to provide infrastructure and services and to regulate the airline industry. The Civil Aviation Act was enacted in 1990 and the Division of Civil Aviation became the member of ICAO (International Civil Aviation Organization), which adheres to internationally accepted standards and practices. The Paro International Airport was inaugurated on 10 April 1999 and has taken the air transport sectors further ahead in providing the reliable, safe and comfortable travel services.

Within the last two and half decades, telecommunication network has changed from physical wire network to a national digital network. Telecommunication has been accorded high priority in Bhutan's development plans. Bhutan's first satellite international link was established in 1990 with the installation of Earth satellite

station and an international gateway switch in Thimphu. In September 1993 the telecommunication link between Thimphu and Tsirang was established and in March 1999 all the 20 district headquarters had access to telecommunication services. Within the period 1992-1999 the number of telephones per 100 people increased from 0.08 to 1.12.

Following the formulation and implementation of Bhutan Postal Act of 1996, Division of Post was incorporated under Bhutan Companies Act. There are 109 postal services where one post office caters to around 6145 Bhutanese people. In 1993, Bhutan post Introduced International Express Mail Service and after a year Domestic service was started in 1996 followed by Post Overnight Courier and Bhutan Post Express Passengers Services in 1997. Within a short period, Bhutan Post increased the types of services from 4 to 13.

The recently completed national telecommunication network opened the path to global information network. On 2nd June 1999, the country established the first television network and also started the Internet Services. Since then, the information and communication technology such as Internet provides access to global information and plays an important role in the every day affairs. Yet another breakthrough was the launch of cellular mobile (B Mobile) services in the Kingdom. Coinciding with the His Majesty's Birthday, the Bhutan Telecom Authority has connected the three regions in its first phase.

TABLE 7.1
LENGTH OF ROADS BY TYPE, BHUTAN, 2001 AND 2003
(Length in Km.)

Type of road	National highway	District road	Feeder road	Urban road	Forest road	All road
2001						
Black topped	..	..	..	..	..	2,334.4
Non-black topped	..	..	..	..	..	1,411.1
Total	1,558.0	476.0	1,092.9	87.7	..	3,745.8
2003*						
Black topped	1,559.1	360.0	401.4	91.1	7.0	2,418.5
Non-black topped	19.0	99.0	925.8	0.6	544.1	1,588.6
Total	1,578.1	459.0	1,327.2	91.7	555.1	4,007.1

Note:

*As of 30 June 2003

Source: Department of Roads, MoW&HS, Thimphu.

TABLE 7.2
LENGTH OF ROADS BY TYPE AND DZONGKHAG, BHUTAN, JUNE 2001
(Length in Km.)

Dzongkhag	National highway	District road	Feeder road	Urban road	Forest road	All roads	Percentage
Thimphu	122.00	..	65.42	..	47.60	235.02	6.27
Paro	213.00	..	186.36	15.72	33.02	447.10	12.16
Thangka	..	87.00	31.36	..	..	118.36	3.17
Gasa	..	..	7.30	..	..	7.30	0.20
Haa	16.00	25.60	25.52	1.20	32.98	101.30	2.68
Lhuntse	..	43.00	17.95	..	..	60.95	1.63
Mongar	177.00	21.00	56.36	..	34.75	289.11	7.82
Paro	103.00	36.40	91.63	..	5.19	236.22	6.31
Pemagatshel	..	23.00	26.80	..	17.60	67.40	1.77
Punakha	9.00	..	90.02	..	1.95	100.97	2.70
Samdrup Jongkhar	60.80	47.00	64.62	..	29.90	202.32	5.42
Samtse	..	108.80	17.70	..	..	..	3.38
Sarpang	120.44	..	42.50	..	93.25	256.19	6.82
Thimphu	111.00	..	68.88	69.14	110.36	359.38	9.45
Trashigang	141.00	5.00	110.25	..	8.50	264.75	7.00
Trashigang	..	40.00	15.10	..	..	55.10	1.47
Trongsa	168.00	..	24.02	..	10.71	202.73	5.30
Tsirang	62.00	..	37.70	1.50	6.48	107.68	2.88
Wangdue Phodrang	150.80	..	77.46	..	39.00	267.26	7.15
Zhemgang	104.00	40.00	36.95	1.15	58.16	243.26	6.41
Bhutan	1,558.04	476.80	1,092.90	88.71	529.45	3,622.40	100.00

Source: Ministry of Communications, Thimphu.

TABLE 7.3
NUMBER AND LENGTH OF BRIDGES BY TYPE, BHUTAN, JUNE 2001

Type of bridges	(Length in Km.)		
	Number	Length	%
Reinforced concrete	44	993.8	18.5
Prestressed concrete	2	248.0	4.6
Bailey bridge	62	2,024.2	37.6
Suspension Bridge (Motorable)	7	687.0	12.8
Hemilton and steel	7	214.0	4.0
Composite bridge	24	476.5	8.9
Wooden	16	260.0	4.8
Submersible	7	193.5	3.6
RCC Slab	15	280.4	5.2
All bridges	184	5,377.3	100.0

Source: Ministry of Communications, Thimphu.

TABLE 7.4
NUMBER OF SUSPENSION BRIDGES COMPLETED DURING I TO VIII FIVE YEAR PLAN PERIODS BY DZONGKHAG

Dzongkhag	Plan periods					All plans (I - VIII)	%
	I - IV	V	VI	VII	VIII		
Bumthang	1	7	3	4	2	17	5
Chhukha	3	5	1	3	2	14	4
Dagana	2	2	2	3	3	12	3
Gasa	0	0	2	2	0	4	1
Haa	3	6	1	3	1	14	4
Lhuntse	3	4	2	3	5	17	5
Monggar	9	5	2	5	3	24	7
Paro	3	8	3	2	1	17	5
Pemagatshel	2	7	2	3	3	17	5
Punakha	3	4	1	0	1	9	3
Samdrup Jongkhar	10	13	6	2	3	11	9
Samtse	9	15	2	1	1	13	8
Sarpang	9	8	5	0	1	23	6
Thimphu	0	1	3	3	1	8	2
Trashigang	7	12	2	3	7	19	9
Trashigang Yangtse	3	6	4	3	3	19	5
Trongsa	4	6	3	3	2	18	5
Tsirang	6	4	1	2	1	14	4
Wangdue Phodrang	2	10	5	3	2	12	6
Zhemgang	1	5	4	4	2	16	4
Bhutan	80	128	54	52	44	358	100

Source: Ministry of Communications, Thimphu.

TABLE 7.5
NUMBER OF REGISTERED VEHICLES BY TYPE AND REGION, 1999 TO 2003

Region	Heavy	Medium	Light	Two- Wheeler	Taxi	Earth mover	Others	All Types
1999 Total	853	n.a.	936	601	229	n.a.	40	2,659
Thimphu	151	n.a.	577	287	140	n.a.	36	1,191
Gelephu	21	n.a.	42	56	5	n.a.	4	128
Phuntsholing	629	n.a.	280	201	84	n.a.	..	1,194
Samdrup Jongkhar	52	n.a.	37	57	..	n.a.	..	146
2000 Total	2,062	n.a.	7,438	7,793	770	n.a.	1,400	19,463
Thimphu	410	n.a.	4,865	4,599	548	n.a.	537	10,463
Gelephu	102	n.a.	274	604	11	n.a.	108	1,099
Phuntsholing	1,348	n.a.	1,971	1,894	210	n.a.	633	6,056
Samdrup Jongkhar	202	n.a.	328	696	1	n.a.	122	1,349
2001 Total	2,853	697	8,905	8,165	1,188	408	268	22,294
Thimphu	472	389	5,821	4,789	810	109	145	12,535
Gelephu	100	33	359	631	17	14	70	1,244
Phuntsholing	2,068	241	2,399	2,003	356	244	..	7,311
Samdrup Jongkhar	213	24	326	742	5	41	53	1,204
2002 Total	2,747	770	10,071	8,371	1,423	464	614	24,430
Thimphu	553	411	6,691	5,160	1,013	135	427	14,360
Gelephu	96	46	383	627	18	14	89	1,273
Phuntsholing	1,923	261	2,653	1,837	379	267	17	7,337
Samdrup Jongkhar	175	52	344	747	13	48	81	1,460
2003 Total	4,841	308	11,428	7,507	1,560	321	388	25,003
Thimphu*	2,654	0	7,586	4,540	1,079	0	134	14,643
Gelephu	85	49	332	628	441	10	138	1,263
Phuntsholing	1,915	230	3,144	1,608	21	272	17	7,627
Samdrup Jongkhar	187	29	366	731	39	39	99	1,470

Notes:

1. Excludes vehicles of armed forces.

2. Number of Government light vehicles include those of Royal Family and International Agencies.

3. "Others" include bull dozers, road rollers, pay loaders, excavators, cranes, tractors, power tillers, etc.

4. *For the year 2003, Medium-category vehicles are included in the Heavy category for Thimphu region.

Source: Road Safety & Transport Authority, MoIC, Thimphu.

TABLE 7.6
NUMBER OF NEW MOTOR VEHICLE DRIVING LICENCES ISSUED
(a) BY TYPE OF VEHICLE, 1994 TO 1998

Licence	(Number)				
	1994	1995	1996	1997	1998
Two Wheelers	371	225	538	788	561
Light	461	281	840	1,090	596
Medium	48	67	68	101	36
Heavy	45	19	63	77	18
Other(b)	66	27	91	73	170
All vehicles	991	619	1,600	2,129	1,381

Notes:

(a) The figures refer to new licences issued during the year (excluding renewals) figures do not refer to the total number of licensed drivers.

(b) includes road rollers, tractors, bulldozers, power tillers, payloaders, excavators, well loaders cranes.

Source: Surface Transport Division, Ministry of Communications, Thimphu.

TABLE 7.7
DETAILS OF PUBLIC ROAD TRANSPORT SERVICES, 1994 TO 1998

Details	1994	1995	1996	1997	1998
Number of operators	14	15	18	19	21
Number of service routes (a)	65	67	65	56	59
Distance run ('000 kms)	4,180	3,107	4,350	3,359	3,527
Passengers carried ('000 passengers)	994	1,021	1,812	863	950
Direct	729	786	1,077	806	886
Local	265	235	735	57	64
Loads carried ('000 kgs)	4,314	119	4,626	n.a	n.a
Services suspended (route days)	1,427	1,038	1,230	168	n.a

Note:

(a) Service route imply bus services one round trip station to station, for e.g. Phuentsholing to Thimphu - Thimphu to Phuentsholing

Source: Surface Transport Division, Ministry of Communications, Thimphu.

TABLE 7.8
NUMBERS OF PASSENGERS CARRIED & REVENUE EARNED BY DRUK AIR
FLIGHTS BY SECTOR, 1997 TO 2001

Sector	1997	1998	1999	2000	2001
Paro to Kolkata	2,486	3,261	3,102	2,600	2,400
Kolkata to Paro	2,179	2,805	2,628	2,470	2,394
Paro to Bangkok	5,012	5,877	6,450	6,556	7,578
Bangkok to Paro	5,201	5,911	6,485	6,623	8,292
Paro to Dhaka	1,086	204	550	363	233
Dhaka to Paro	1,022	307	489	332	200
Paro to Delhi	3,884	3,889	4,102	3,713	3,417
Delhi to Paro	3,745	3,827	4,085	3,728	3,604
Paro to Kathmandu	2,718	2,989	3,891	3,793	3,753
Kathmandu to Paro	2,652	2,633	3,718	3,722	3,677
Kathmandu to Delhi	1,067	749	335	563	217
Delhi to Kathmandu	624	290	190	221	62
Kolkata to Bangkok	4,427	3,345	2,216	2,208	1,880
Bangkok to Kolkata	3,215	2,234	1,815	1,313	1,076
Dhaka to Bangkok	421	106	175	427	115
Bangkok to Dhaka	843	264	177	321	111
Total passengers (a)	40,582	38,691	40,408	38,953	39,009
Revenue (Nu.in millions)	281	327	323	208	351
During fiscal/calendar year	1996/97	1997/98	1998/99	1999/00	2000/01

Source: Ministry of Communications, Thimphu.

TABLE 7.9
NUMBER OF FLIGHTS MADE BY DRUK AIR BY SECTOR, 1997 TO 2002

Sector	1997	1998	1999	2000	2001	2002
Paro to Calcutta	186	167	148	110	120	189
Calcutta to Paro	186	164	148	119	125	167
Paro to Bangkok	221	193	183	172	175	211
Bangkok to Paro	221	190	184	172	172	205
Paro to Dhaka	20	17	45	42	39	27
Dhaka to Paro	20	20	46	45	34	29
Paro to Delhi	143	108	113	96	102	104
Delhi to Paro	143	108	113	99	102	105
Paro to Kathmandu	115	105	113	114	121	105
Kathmandu to Paro	115	100	112	114	120	105
Paro to Yangon	20	16	n.a	n.a	n.a	16
Yangon to Paro	20	15	n.a	n.a	n.a	17
All sectors	1,370	1,203	1,205	1,083	1,110	1,280

Source: Druk Air Corporation, Thimphu.

TABLE 7.10
TELEPHONE CONNECTION CAPACITY BY EXCHANGE, 1997 TO 2001
(Number)

Exchange (Switch type)	1997	1998	1999	2000	2001
Tsimakothi(DRMAS)	50	228	230	220	216
Gelephu(LS)	584	568	656	688	497
Haa(DRMAS)	50	176	230	176	174
Paro(LS)	200	1,344	1,344	1,344	806
Phuentsholing(LS)	900	2,216	2,216	2,344	1,976
Punakha(RLU)	80	306	278	312	273
Samdrupjongkha(LS)	664	656	656	664	509
Samtse(LS)	100	436	464	448	418
Sarpang(DRMAS)	109	104	123	122	120
Thimphu (LS/INTS/MS)	3,896	6,128	6,200	6,208	5,926
Trashigang (TS/LS)	528	512	512	724	286
Trongsa (TS/LS)	336	280	280	280	205
Wangduephodrang(RLU)	100	312	372	392	366
Jakar(RLU)	200	280	344	344	331
Zhemgang(RLU)	200	200	200	200	147
Damphu(RLU)	376	328	328	272	205
Dagana(DRMAS)	62	64	64	64	63
Mongar(RLU)	64	420	420	420	182
Lhuntse(DRMAS)	420	58	64	60	60
Kanglung(DRMAS)	93	64	128	128	83
Trashiyangtse(DRMAS)	64	64	128	128	83
Pemagatshel(RLU)	116	116	116	140	105
Total capacity	9,192	14,860	15,353	15,678	13,031

Note:

LS stands for local switch, TS for toll switch, MS for tandem switch, INTS for international switch, RLU for remote line unit, DRMAS for digital radio multiple access system and SxS for step switch.

Source: Ministry of Communications, Thimphu.

TABLE 7.11
NUMBER OF TELEPHONE TRUNK CIRCUITS, BHUTAN, 2002

Sector	Type of connection	Existing circuits
Thimphu - London (BT)	Bothway	14
Thimphu - Singapore (ST)	Bothway	8
Thimphu - Japan (KDD)	Bothway	6
Thimphu - India	n.a	n.a
Thimphu - Phuentsholing	Bothway	90
Thimphu - Samtse	Bothway	30
Thimphu - Trongsa	Uni-directional	60
Thimphu - Gelephu	Uni-directional	60
Thimphu - Trashigang	Uni-directional	60
Thimphu - Samdrup Jongkhar	Uni-directional	30
Thimphu - Paro	Bothway	60
Thimphu - Paro Airport	n.a	n.a
Thimphu - Tsimakothi	n.a	n.a
Thimphu - Wangdue Phodrang	Bothway	60
Thimphu - Lobesa	n.a	n.a
Thimphu - Punakha	Bothway	60
Thimphu - VOIP	Bothway	30
Paro - Phuntsholing	Bothway	60
Trongsa - Trashigang	Uni-directional	60
Trongsa - Gelephu	Uni-directional	60
Trongsa - Samdrup Jongkhar	Uni-directional	30
Gelephu - Trashigang	Uni-directional	30
Trashigang - Samdrup Jongkhar	Uni-directional	60
Paro - Haa	n.a	n.a
Samtse - Phuntsholing	Bothway	30
Samtse - Banarhat (India)	n.a	n.a
Phuentsholing - India (Kolkata)	Uni-directional	30
Phuentsholing - India (Delhi)	Uni-directional	30
Phuntsholing - India (Siliguri)	Uni-directional	60
Phuntsholing - India (Via Thimphu)	n.a	n.a
Thimphu - DAMA	Uni-directional	24
Phuntsholing - DAMA	Uni-directional	6
Samtse - DAMA	Uni-directional	6
Gelephu - DAMA	Uni-directional	12
Trashigang - DAMA	Uni-directional	6
Samdrup Jongkhar - DAMA	Uni-directional	24

All sectors

Source: Bhutan Communications Authority, MoIC, Thimphu.

TABLE 7.12
NUMBER OF TRUNK LINES, CONNECTION CAPACITIES & SETS IN USE
1999 TO 2002

Details	1999	2000	2001	2002
Trunk lines	..	..	..	691
Satellite Communications	88	88	106	106
International Lines	28	28	28	28
Domestic (DAMA)	60	60	78	78
Digital Microwave	480	480	480	480
Digital Radio Concentrator System	15	15	15	15
DRMASS	60	60	60	60
VOIP	n.a	n.a	n.a	30
Connection capacity	14706	16580	21879	21879
Telephone sets in use	11776	13531	17730	20168

Note:

1. Trunk Lines consist of Satellite, Microwave, DRCS, DRMASS and VOIP.
2. Bhutan Telecom has a total of 1.5 Mb/sec IDR voice circuits which equals to 24 trunk lines and can go up to 48 channels with LRE equipment.

Source: Bhutan Communications Authority, MoIC, Thimphu.

TABLE 7.13
NUMBER OF TELEPHONE TRUNK CALLS BY TYPE, 1999 TO 2002

Type of call	1999	2000	2001	2002
Domestic calls	4,646	6,843	8,212	10,285
International calls	2,968	170	187	220
India	2,661	1,086	1,227	1,387
Other	307	n.a	n.a	n.a
All calls	7,614	8,100	9,628	11,893

Source: Bhutan Communications Authority, MoIC, Thimphu.

TABLE 7.14
TELECOMMUNICATION TRAFFIC IN MINUTES AND REVENUE EARNINGS, BHUTAN,
1998 TO 2002

Details	1998	1999	2000	2001	2002
Type of call					
Domestic calls (minutes)	19,833,152	13,936,667	78,161,951	19,617,143	24,704,092
International calls (minutes)	4,063,871	5,935,201	3,472,348	4,227,729	4,824,491
India	3,502,495	3,862	2,827,295	3,510,283	4,099,185
Other countries	561,376	5,931,339	534,425	717,446	725,306
Total calls	23,897,023	19,871,868	81,364,299	23,844,872	29,528,583
Revenue earnings (Nu. in Million)	186	199	n.a	337	376

Source: Bhutan Communications Authority, MOIC, Thimphu

TABLE 7.15
NUMBER OF COMMUNICATION FACILITIES, 1999 TO 2003

Postal infrastructure	1999	2000	2001	2002	2003
General Post Offices	2	2	2	2	2
Post Offices	19	25	25	27	27
Branch Post Offices	..	..	..	..	..
Agency Post Offices	17	10	10	10	10
Community Mail Offices	69	70	70	70	70
Telegraph or Fax Offices	18	..	..	..	..
Wireless Stations(a)	n.a	n.a	n.a	n.a	n.a

Note:

WT. Stations are merged with Telecommunication Division since July 1995

(a) Includes 3 stations installed at New Delhi, Dhaka and Kalimpong.

Source: Bhutan Post, Thimphu.

TABLE 7.16
VOLUME OF POSTAL MAIL TRAFFIC BY DESTINATION, 1995 TO 1999

Type of service	1995	1996	1997	1998	1999
Domestic	1,414	1,035	10,208	1,316	1,282
International	482	437	800	1,046	1,078
Dispatch	228	197	299	443	401
Receipt	255	240	501	603	677
Total mail items	1,896	1,472	11,008	2,362	2,360

Source: Bhutan Post, Thimphu

TABLE 7.17
VOLUME OF MAIL, BY TYPE OF ARTICLE AND DESTINATION, 1999

Type of mail	('000 numbers) Total Domestic	International		
		Total	Inward	Outward
Letters/Postcards/ Aerogrammes				
Ordinary letter	714	536	320	216
Registered items	83	79	39	40
Printed matter/packets	476	354	212	142
Parcels	1	3	2	1
Express mail service (EMS)	8	6	4	2
Messages				
Telegraphic message	n.a	n.a	n.a	n.a
Facsimile message	n.a	n.a	n.a	n.a
Wireless transmission	n.a	n.a	n.a	n.a
All mail items	1282	978	577	401

Source: Bhutan Post, Thimphu.

TABLE 7.18
NUMBER AND VALUE OF MONEY ORDER BY TYPE, 1996 TO 1999

Type	1996	1997	1998	1999
Total money orders				
Number of orders ('000)	25.6	24.0	21.0	45.0
Amount of orders ('000 Nu.)	15,316.1	15,270.0	26,099.0	51,273.0
Domestic money order				
Number of orders ('000)	18.2	13.0	13.0	23.0
Amount of orders ('000 Nu.)	9,731.0	10,221.0	15,957.0	2,898.0
International money order				
Dispatched				
Number of orders ('000)	7.2	7.0	8.0	21.0
Amount of orders ('000 Nu.)	5,488.5	4,798.0	9,821.0	22,098.0
Receipts				
Number of orders ('000)	0.2	4.0	0.2	1.0
Amount of orders ('000 Nu.)	96.6	251.0	322.0	205.0

Source: Division of Post and Telegraph, Thimphu.

CHAPTER 8: ENERGY



The major source of energy in Bhutan has traditionally been firewood, which is available in abundant quantities from the country's extensive forests. Firewood still represents the majority of energy consumption. Electricity generation, though still relatively small in comparison with the rest of the world is growing in importance. Up until recently, electricity generation was based on small diesel generating and micro hydro stations, providing limited supply of electricity, which was supplemented by imports from India. With the commissioning of the first two units of Chukha Hydel Projects in 1986, and the other two units in 1998 Bhutan substantially increased its electricity generation and became a significant exporter of electricity to India.

Two big projects "Kurichhu Hydel Power Projects" and the Tala Hydel Power Project" will substantially improve the energy generation in the country. Domestic consumption of electricity has been marginal but should increase with the ongoing emphasis through Rural Electrification Programs in emphasis. Other forms of energy as the solar, wind and biomass energy are being explored. Number of villages electrified increased from 331 in 1995/96 to 690 villages in 2000/2001. This trend is a positive indication of the prospective reduction of dependence on fuel wood as a source of energy in the near future.

TABLE 8.1
ELECTRICITY GENERATING STATIONS AND THEIR CAPACITIES, FY 2001/02

Generating stations (Dzongkhag)	Installed capacity (No. x MW)	Generating capacity (MW)	Peak generation (MW)	Energy generated (MU)
Hydro stations (a)				
Chumey (Bumthang)	3 x 0.500	1.350	0.996	3.219
Chhukha	4x 84.000	336.000	360	1861.745
Gidakom (Thimphu)	5 x 0.250	0.000	0.000	0.000
Jushina (Thimphu)	4 x 0.090	0.360	0.262	1.574
Chenari (Trashigang)	3 x 0.250	0.000	0.000	0.000
Khaling (Trashigang)	3 x 0.200	0.400	0.338	0.578
Rangjung (Trashigang)	2 x 1.100	2.200	1.890	6.188
Khalangzi (Mongar)	3 x 0.130	0.260	0.256	0.781
Kurichu (Mongar)	3 x15.000	45.000	45.000	126.303
Basochu(W/phodrang)	2 x24.000	24.000	24.000	55.134
Wangduephodrang	3 x 0.100	0.300	0.000	0.153
Micro hydels				
Tamshing (Bjakar)	1 x 0.030	0.030	..	0.063
Ura (Bjakar)	1 x 0.050	0.050	..	0.127
Lingzhi (Thimphu)	1 x 0.008	0.008	..	..
Lhuntse (Lhuntse)	2 x 0.060	0.120	..	0.300
Rongchu (Lhuentse)	2 x 0.100	0.200	..	0.701
Yadi (Mongar)	1 x 0.030	0.030	..	0.047
Surey (Sarpang)	1 x 0.070	0.070	..	..
Bubja (Trongsa)	1 x 0.030	0.030	..	0.107
Tangsibi (Trongsa)	1 x 0.030	0.030	..	0.043
Trongsa (Trongsa)	1 x 0.050	0.050	..	0.188
Damphu (Tsirang)	2 x 0.100	0.200	0.132	0.135
Rukubji (W/phodrang)	1 x 0.040	0.040	..	0.020
Kekhar (Zhemgang)	1 x 0.020	0.020	..	..
Tingtibi (Zhemgang)	2 x 0.100	0.200	0.160	1.022

Source: Department of Energy, MTI, Thimphu.

TABLE 8.1(contd.)
ELECTRICITY GENERATING STATIONS AND THEIR CAPACITIES, FY 2001/02

Generating stations (Dzongkhag)	Number of machines	Generating capacity (MW)	Peak generation (MW)	Energy generated (MU)
Diesel generation stations				
Thimphu	7	..	..	0.000
Paro	1	..	..	0.000
Phuentsholing	3	0.000	..	0.000
Damphu	3	..	..	..
Trongsa	2	..	..	0.055
Gelephu	2	0.692	..	0.034
Sarpang	2	0.505	..	0.020
Kalikhola	2	0.000	..	0.000
Zhemgang	3	..	..	0.019
Dagana	2	..	..	..
Trashigang	5	..	..	0.024
Bjakar	3	..	..	0.163
Mongar	1	..	..	0.106
Samdrup Jongkhar	2	..	..	..
Trashi Yangtse	1	..	..	0.046
Pema Gatshel	1	..	..	..
Samtse	1	..	..	..
Other diesel stations				
Penden Cement Authority Ltd.	4	3.600	..	0.002
Bhutan Board Products Ltd.	2	0.458	..	..
Chhukha Hydro Power Corp.	5	1.949	..	0.005
Bhutan Carbide & Chemical Ltd.	2	0.225	..	0.010
Bhutan Ferro Alloys Ltd.	1	0.288	..	0.141
Kurichu Project Authority	2	0.563	..	..
Basochu Project Authority	1	0.090	..	0.001

Source: Department of Energy, MTI, Thimphu.

TABLE 8.2
TOTAL ELECTRICITY GENERATION AND SUPPLY, 1998/99 TO 2001/02

Details	20.2	1999/00	2000/01	2001/02
Installed capacity (MW)	350.15	353.6	368.65	422.82
Chhukha hydro power	336.00	336	336.00	336.00
Kurichu hydro power	..	..	15.00	45.00
Basochu hydro power	..	..	..	24.00
Other hydro power	8.35	8.45	8.46	8.63
All diesel generators	5.80	9.15	9.19	9.19
Electricity generation (MU)	1746.11	2130.96	1,805.29	2,059.40
Chhukha hydro power	1732.93	2117.21	1,791.65	1,861.75
Kurichu hydro power	..	..	..	126.30
Basochu hydro power	..	..	..	55.13
Other hydro power	13.12	13.51	13.38	15.77
All diesel generators	0.07	0.25	0.27	0.45
Exports (MU)	1302.22	1625.96	1,380.15	1,477.69
Imports (MU)	8.15	9.16	9.93	6.90
Total energy requirement (MU)	424.11	480.81	441.24	578.51
Total energy sales (MU)	396.57	445.55	401.90	510.45
Energy losses (MU)	27.53	35.27	39.14	68.06
Percentage losses (%)	6.49	7.33	8.87	11.77
Peak system demand (MW)	80.00	89	92.00	92.63
Length of HT lines (33/11 KV)				
Overhead lines (km)	938.58	985.69	983.26	1,038.85
Underground lines (km)	14.27	14.93	20.43	26.02
Length of LT lines				
Overhead lines (km)	887.83	1020.94	1,267.84	1,358.35
Underground lines (km)	40.90	45.00	45.34	57.86

Note:

The length of the HT has dropped because length of HT in Mongar was reported wrongly in the past and is now confirmed to be 44.660 km only. Figures for energy requirement and energy sales now include the internal energy consumption of CHPC.

Source : Department of Energy, MTI, Thimphu.

TABLE 8.3
MAJOR TRANSMISSION LINES FOR EVACUATING HYDRO POWER
FROM CHHUKHA POWER PLANT, 2002

Stations	220 KV line(Km)	132 KV line(Km)	66 KV line (Km)
Chhukha - Birpara	71.00 (D/C)	..	..
Chhukha - Singhigoan	33.320	..	..
Chhukha - Simtokha	54.367	..	..
Gelephug - Indian border	..	0.300	..
Gyleposhing - kilikhar	..	10.214	..
Kilikhar - Kanglung	..	29.807	..
Nangkor - Nganglam	..	23.668	..
Gyleposhing - Nangkor	..	33.700	..
Nangkor - Nganglam	..	34.300	..
Nganglam - Tingtibi	..	83.200	..
Tingtibi - Gelephug	..	46.000	..
Chhukha - Gedu	20.1
Gedu - Phuntsholing	17.7
Chhukha - Confluence	36.7
Confluence - Simtokha	18.3
Confluence - Haa	33.5
Confluence - Paro	24.0
Simtokha - W/phodrang	26.0
Lobeyssa - Basochhu	23.0
Phuntsholing - Gomtu	27.0
Phuntsholing - Singhigoan	8.4
Phuntsholing - Birpara	Redundent
Total		71(D/C):: 87.69(S/C)	234.772

Note:

D/C stands for double circuit and S/C for single circuit.

Source: Department of Energy, MTI, Thimphu.

TABLE 8.4
DETAILS OF DOMESTIC ELECTRICAL ENERGY CONSUMPTION, 1997/98 TO 2001/02

Details	1997/98	1998/99	1999/00	2000/01	2001/02
Towns electrified (numbers)	39.0	40.0	40.0	40.0	40.0
Villages electrified (numbers)	370.0	443.0	552.0	646.0	690.0
Consumers ('000)	31.6	33.7	35.7	35.9	38.7
Sales of energy (million Nu.)	229.5	236.4	280.7	268.7	381.1
Per capita energy consumption (Units)	619.4	656.6	720.0	632.2	808.0

Note:
The Per capita Energy consumption has dropped in 2000/01 because of the drop in energy sales to industrial areas in pasakha, due to flood in August, 2002.

Source: Department of Energy, MTI, Thimphu.

TABLE 8.5
MONTHLY REVENUE FROM SALE OF ENERGY FROM CHHUKHA HYDROPOWER, 2001 TO 2002

Month	2001			2002		
	Export	Internal	Total	Export	Internal	Total
January	24.7	13.23	37.96	33.37	14.54	47.91
February	12.8	12.06	24.81	20.73	12.67	33.40
March	8.9	12.78	21.67	21.60	13.50	35.10
April	75.8	12.02	87.78	64.11	12.38	76.49
May	162.0	12.39	174.37	144.59	12.83	157.42
June	287.0	11.39	298.42	279.25	10.38	289.63
July	326.1	10.46	336.58	349.82	11.25	361.06
August	326.9	9.85	336.78	329.89	11.62	341.51
September	300.4	11.91	312.29	313.01	11.23	324.23
October	291.6	12.46	304.06	257.49	12.11	269.61
November	146.8	12.77	159.55	111.50	12.32	123.82
December	71.9	13.39	85.30	57.76	13.43	71.19
Total	2034.9	144.71	2,179.56	1,983.10	148.27	2,131.37

Source: Department of Energy, MTI, Thimphu.

TABLE 8.6
CONSUMPTION OF ELECTRICITY BY TYPE OF CONSUMER, 1997/98 TO 2001/02

Type of consumer	1997/98	1998/99	1999/00	2000/01	2001/02
Total consumption (MU)	357.24	390.79	434.40	383.99	489.26
Domestic	31.00	34.99	46.70	52.49	63.67
Commercial & Government Offices	21.41	25.38	42.03	57.55	32.24
Industries	317.02	323.96	338.53	267.11	343.73
Bulk supply	5.49	6.16	6.81	6.38	49.20
Public lighting	0.33	0.30	0.34	0.37	0.42
Consumption as percentage	100.00	100.00	100.00	100.00	100.00
Domestic	8.26	8.95	10.75	13.67	13.01
Commercial & Government Offices	5.71	6.50	9.68	15.00	6.59
Industries	84.48	82.90	77.93	69.56	70.26
Bulk supply	1.46	1.58	1.57	1.66	10.06
Public lighting	0.09	0.08	0.08	0.10	0.09

Source: Department of Energy, MTI, Thimphu.

CHAPTER 9: TOURISM



The tourism industry has been an important source of hard currency to Bhutan since the country was first opened to tourism in 1974. The potential as far as foreign exchange earnings are concerned are very high, though the Government has followed a strategy regulating the number of tourists coming into Bhutan.

The main statistics of the interest in the field of tourism relate to the characteristics of visitors and the details of existing tourist facilities, interest centers on visitor arrivals, where they come from, when they come and the purpose of their visit. Earning of foreign exchange from the overseas visitors is another important aspects.

There has been a steady rise of tourist arrivals in the country during the 1990s through 2000 while in 2002 there was a comparative decrease in tourist arrivals. The largest numbers of tourist arrivals have been originating from the United States of America, Japan and the United Kingdom.

TABLE 9.1

ANNUAL TOURIST ARRIVALS BY REGION/CONTINENT, 1997 TO 2002

Country	1997	1998	1999	2000	2001	2002
Africa	..	..	12	7	27	17
South Africa	..	..	12	7	27	17
Asia & Pacific	1,518	1,382	1,528	1,383	1,346	1,281
Australia	121	64	131	179	138	214
China	..	12	11	10	27	25
Japan	1,173	1,032	1,102	875	1,038	892
Korea	31	11	14	3	34	44
Malaysia	..	..	..	16	3	2
Nepal	32	23	23	50	14	16
New Zealand	..	28	22	31	25	32
Phillipines	..	..	20	13	8	8
Singapore	78	77	26	31	15	8
Taiwan	83	135	179	175	44	40
Thailand	140	19	71	92	36	46
America	999	1,591	2,346	3,024	2,367	2,142
Argentina	..	11	12	29	4	4
Brazil	..	27	14	10	10	21
Canada	89	82	149	194	197	166
Mexico	..	..	49	37	7	38
USA	910	1,471	2,122	2,754	2,149	1,913
Europe	1,509	1,924	1,786	1,941	1,342	1,067
Austria	156	270	197	131	128	92
Belgium	75	95	107	95	76	22
Czech	..	24	..	12	2	5
Denmark	61	45	13	30	22	10
Finland	21	..	5	60	17	14
France	229	366	236	399	287	192
Germany	533	520	574	662	414	346
Greece	..	16	..	25	11	4
Ireland	..	..	16	10	9	7
Italy	186	218	276	156	192	177
Luxemburg	14	..	..	2	4	1
Netherlands	234	370	362	359	180	197

Contd...

TABLE 9.1(contd.)
ANNUAL TOURIST ARRIVALS BY REGION/CONTINENT, 1997 TO 2002

Country	1997	1998	1999	2000	2001	2002
Norway	6	12	33	7	19	25
Poland	..	45	35	26	39	41
Portugal	11		43	19	43	4
Russia		36	17	13	27	25
Spain	33	109	118	141	73	68
Sweden	18	58	37	48	28	41
Switzerland	186	170	296	137	170	164
Turkey	..	..	49	34	30	61
United Kingdom	642	686	646	595	681	519
Middle East	301	171	141	92	165	98
Israel	..	81	80	68	78	5
Others	301	90	61	24	87	93
Total arrivals	5,363	6,203	7,158	7,559	6,393	5,599
Trekkers	746	1,343	830	926	468	357
Cultural	4,617	4,860	6,328	6,633	5,925	5,242

Source: Department of Tourism, MTI, Thimphu.

TABLE 9.2

TOURIST ARRIVALS BY COUNTRY OF RESIDENCE AND REVENUE RECEIPTS,
1997 TO 2002

Region	1997	1998	1999	2000	2001	2002
America	1,010	1,591	2,346	3,024	2,367	2,142
Asia and Pacific	1,712	1,401	1,599	1,556	1,462	1,332*
Europe	2,590	3,132	3,118	2,948	2,450	2,015
Africa	n.a	n.a	12	7	27	17
Others	51	79	83	24	87	93
All regions(persons)	5,363	6,203	7,158	7,559	6,393	5,599
Tourism revenue receipts Ngultrums(million)	n.a	n.a	n.a	n.a	n.a	133.4
Or US Dollars(million)	6.55	7.98	8.88	10.50	9.20	7.98

Note:

*Includes Israel which falls under Middle East region.

Source : Department of Tourism, MTI, Thimphu.

TABLE 9.3
NUMBER OF TOURIST ARRIVALS BY SEASON AND MONTH, 1997 TO 2002

Season & Month	1997	1998	1999	2000	2001	2002
Winter	902	1,048	1,179	1,274	874	849
November	640	678	841	996	517	643
December	154	274	190	213	172	151
January	108	96	148	65	185	55
Spring	1,978	1,863	2,071	2,284	2,540	1,814
February	254	154	322	223	355	269
March	1,062	542	1,145	1,066	553	862
April	662	1,167	604	995	1,632	683
Summer	488	516	635	764	551	489
May	275	267	395	415	276	296
June	90	97	108	187	146	79
July	123	152	132	162	129	114
Autumn	1,995	2,776	3,273	3,237	2,428	2,447
August	231	340	348	307	252	213
September	276	1,107	1,069	683	868	760
October	1,488	1,329	1,856	2,247	1,308	1,474
Total Arrival	5,363	6,203	7,158	7,559	6,393	5,599

Source: Department of Tourism, MTI, Thimphu.

TABLE 9.4
NUMBER OF TOURIST ARRIVALS BY PURPOSE OF VISIT, 1997 TO 2002

Purpose	1997	1998	1999	2000	2001	2002
Tour, holidays & recreation	4,517	4,860	6,328	6,633	5,925	5,242
Trekking & mountaineering	846	1,343	830	926	468	357
Total tourists	5,363	6,203	7,158	7,559	6,393	5,599

Source : Department of Tourism, MTI, Thimphu.

TABLE 9.5
NUMBER OF TOURIST ARRIVALS BY MODE OF TRANSPORT, 1997 TO 2002

Mode of transport	1997	1998	1999	2000	2001	2002
Air	4,826	5,583	5,745	6,522	5,544	4,062
Others	537	620	1,413	1,037	849	1,537
Total tourists	5,363	6,203	7,158	7,559	6,393	5,599

Source : Department of Tourism, MTI, Thimphu.

CHAPTER 10: FOREIGN TRADE AND BALANCE OF PAYMENT

Bhutan's economy is closely linked with India, though efforts towards diversification of products and markets are actively pursued. While economy links with other countries are limited, significant amount of aid have been received in recent years and this has enabled substantial increases in imports from third countries. Exports to third countries continue to be very low against higher imports, so reliance has to be placed on inflows of aid for the financing of imports.

Balance of Payments statistics are designed to show the difference between the total payments made to foreign countries and the total receipts from foreign countries. Payments and receipts include imports and exports of merchandise; services and transfers (such as freight and insurance charges); expenditure by travelers; and capital movements (such as loans and investments). The trade balance measures the balance between imports and exports. Including services and transfers to provide a measure of the current account balance obtain a more comprehensive picture of the balance of payments situations.

The balance of payments statements also show how any negative current account balance is financed. In the case of Bhutan this is achieved through foreign aid. Any surplus of foreign aid over and above current account deficits means an increase in the foreign currency reserves of the country. Balance of payments statistics in Bhutan are compiled by the Royal Monetary Authority based on information from its own accounts and those of the Banks, together with information on imports and exports.

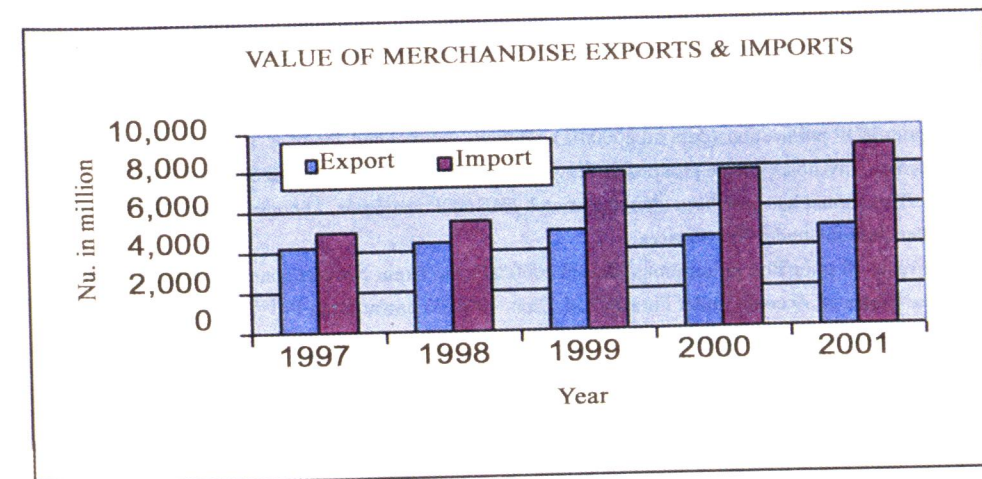


TABLE 10.1
OVERALL BALANCE OF PAYMENTS ESTIMATES, FY 1998/99 TO 2001/02

Item	(Nu. in Million)			
	1998/99	1999/00	2000/01	2001/02
A. Current Account	(4,170.1)	1,130.0	44.1	(30.2)
Exports, fob	4,460.0	4,987.9	4615.8	4,994.8
Imports, cif	(6,913.7)	(8,075.2)	(9,106.3)	(8,990.2)
Trade balance	(2,453.7)	(3,087.3)	(4,490.4)	(3,995.5)
Services*1	(1716.4)	(465.8)	(55.2)	(17.6)
Credit	..	828.0	1,570.3	1,530.3
Debit	..	(1,293.9)	(1,625.5)	(1,547.9)
Income	..	451.9	622.8	327.2
Credit	..	550.4	718.5	436.3
Debit	..	(98.5)	(95.7)	(109.1)
Current Transfers	..	4,231.3	3,966.9	3,655.7
Credit	..	7,547.9	7,018.2	6,956.9
Debit	..	(3,316.6)	(3,051.3)	(3,301.2)
B. Capital and Financial Account	6,297.9	811.4	2308.6	2,849.5
Foreign Direct Investment	45.2	..	..	86.8
Foreign Aid (Loans net)*2	3,550.8	811.4	2,308.6	2,762.7
Other loans	(298.2)	..	0.0	..
C. Net Errors and Omissions	(245.4)	(352.3)	(1,228.7)	(1,153.4)
D. Overall balance*3	1,182.5	1,589.1	1,124.1	1,665.90

Notes:

Figures within bracket indicate deficit (-).

*1 In all prior BOP publications (data till 2000/01), Services, Income and Transfer Receipts and Payments (also known as "Invisibles") were grouped as Servicematch Transfer Receipts and Service Transfer payments. This format has now been altered to match IMF BOP standards. Therefore, from 199/00 Invisibles are thereafter classified under Net Services.

*2 As above, in all prior Bop publications (dat till 2000/01), the Grant Net component was included in the Capital and Financial Account under Foreign Aid. From 1999/00 onwards, as IMF Standards, Grants are treated as Current Transfer Receipts.

*3 Overall balance is the Change in Reserves.

Source : "Selected Economic Indicators June 2003", Royal Monetary Authority, Thimphu.

TABLE 10.2
VALUE OF EXPORTS AND IMPORTS, BHUTAN, 1997 TO 2001

Trade	(Nu. in Million)				
	1997	1998	1999	2000	2001
Exports	4,274.10	4,455.62	4,987.96	4,615.84	4,994.75
India	4,041.90	4,175.64	4,711.23	4,376.95	4,700.47
Third Countries	232.20	279.98	276.73	238.89	294.28
Imports	4,978.00	5,516.37	7,834.88	7,875.00	8990.20
India	3,453.60	3,620.94	5,845.28	6,231.31	6988.78
Third Countries	1,524.40	1,895.43	1,989.60	1,643.69	2001.42
Balance of trade	(703.90)	(1,060.75)	(2,846.92)	(3,259.16)	(3,995.45)
India	588.30	554.70	(1,134.05)	(1,854.36)	(-2,288.31)
Third Countries	(1,292.20)	(1,615.45)	(1,712.87)	(1,404.80)	(1,707.45)

Note:

Figures within bracket indicate deficit (-).

Source : "Bhutan Trade Statistics for the year 2001", Dept. of Revenue & Customs, MOF, Thimphu

TABLE 10.3
COMMODITIES OF EXPORT TO THIRD COUNTRIES, 2000 TO 2002

Commodity	2000		2001		2002*	
	Million Nu.	Share (%)	Million Nu.	Share (%)	Million Nu.	Share (%)
Vegetable and fruits	180.08	61.82	181.38	58.33	71.27	47.17
Processed foods	4.84	1.66	5.23	1.68	3.89	2.57
Mineral products	73.28	25.16	82.65	26.58	44.11	29.20
Plastic products	0.10	0.04	..	..	..	..
Wood products & wood pulp products	3.78	1.30	8.85	2.85	5.00	3.31
Textiles	17.73	6.09	5.04	1.62	10.92	7.23
Base metals & base metal products	0.69	0.24	..	..	..	..
Machinery	..	0.00	..	..	..	..
Philatic products	0.25	0.09	..	..	..	..
Handicrafts	0.30	0.10	2.28	0.73	0.31	0.21
Postal packages	5.10	1.75	..	..	..	..
Fishing equipments	0.72	0.25	0.39	0.13	0.08	0.05
Musical instruments	0.22	0.07	..	..	..	..
Instruments, appliances & apparatus	4.19	1.44	0.04	0.01	0.005	0.00
Household items & personal effects	..	..	7.09	2.28	2.13	1.41
Incense sticks	..	..	0.32	0.10	0.08	0.05
Products of chemical industries	..	..	9.35	3.01	12.78	8.46
Tea & spices	..	..	0.0016	0.00	0.002	0.00
Rice	..	..	4.05	1.30	0.39	0.26
Vegetable seeds	..	..	0.57	0.18	..	..
Medicinal plants	..	..	3.69	1.19	..	..
Paintings & drawings	..	..	0.01	0.00	..	..
All items	291.28	100.00	310.94	100.00	152.26	100.00

Notes:

There is a fall in earning for the exports of 'vegetables and fruits' for the year 2001 and it may be attributed to the unavailability of the data for the sale of apples.

*From 1 Jan. 2002 to 30 June 2002.

Source: "Bhutan Trade Statistics up to 30th June 2002", Dept. of Revenue & Customs, MOF, Thimphu.

TABLE 10.4(a)
TOP TEN COMMODITIES OF EXPORTS, 2001

Commodity	Million Nu.	Share %	Rank
Electricity	2,072.94	48.13	1
Calcium carbide	571.27	13.27	2
Ferro-silicon	541.87	12.58	3
Cement	413.03	9.59	4
Particle board	215.22	5.00	5
Oranges	152.27	3.54	6
Mixture of juice	94.34	2.19	7
Gypsum	91.77	2.13	8
Dolomite	88.32	2.05	9
Cardamoms	65.49	1.52	10
Others	4,994.75	..	..

Source: "Bhutan Trade Statistics up to 30th June 2002", Dept. of Revenue & Customs, MoF, Thimphu.

TABLE 10.4(b)
TOP TEN COMMODITIES OF IMPORTS, 2001

Commodity	Million Nu.	Share %	Rank
Diesel	649.51	22.92	1
Passanger car	556.62	19.65	2
Rice	308.80	10.90	4
Beer	225.49	7.96	3
Parts of bulldozer	210.73	7.44	5
Petrol	191.32	6.75	6
Structurs of iron	179.10	6.32	7
Tubes and pipes	176.28	6.22	8
Trucks	169.70	5.99	9
Electrical insulators	165.71	5.85	10
Others	8,990.20	..	..

Source: "Bhutan Trade Statistics up to 30th June 2002", Dept. of Revenue & Customs, MoF, Thimphu.

TABLE 10.5
VALUE AND ITS PERCENTAGE SHARE OF EXPORTS FROM TEN SELECTED COUNTRIES, 2001 TO 2002

Country	(Nu. in Million)					
	2001			2002*		
	Mill. Nu	Share(%)	Rank	Mill. Nu	Share(%)	Rank
India	4,700.47	94.1	1	1513.80	90.9	1
Bangladesh	222.38	4.5	2	111.67	6.7	2
Nepal	41.51	0.8	3	20.09	1.2	3
U.S.A	13.60	0.3	4	12.70	0.8	4
United Kingdor	5.94	0.1	5	0.94	0.1	8
Thailand	3.70	0.1	6	1.64	0.1	5
Denmark	3.11	0.1	7	..	..	..
Japan	1.22	0.0	8	1.26	0.1	7
Netherlands	0.81	0.0	9	1.44	0.1	6
Austria	0.78	0.0	10	0.81	0.0	9
Sweden	..	..	..	0.66	0.0	10

Note:

*From 1 Jan. 2002 to 30 June 2002.

Source: "Bhutan Trade Statistics up to 30th June 2002", Dept. of Revenue & Customs, MoF, Thimphu.

TABLE 10.6
VALUE AND ITS PERCENTAGE SHARE OF IMPORTS FROM TEN SELECTED COUNTRIES, 2001 TO 2002

Country	2001			2002*		
	Mill. Nu	Share(%)	Rank	Mill. Nu	Share(%)	Rank
	Mill. Nu	Share(%)	Rank	Mill. Nu	Share(%)	Rank
India	6,988.78	81.1	1	3587.69	73.5	1
Japan	622.19	7.2	2	318.35	6.5	2
Thailand	290.04	3.4	3	200.47	4.1	4
Singapore	214.60	2.5	4	185.07	3.8	5
United Kingdor	163.39	1.9	5	275.88	5.7	3
Italy	84.64	1.0	6	..	..	..
South Korea	71.67	0.8	7	..	..	..
Germany	65.99	0.8	8	69.14	1.4	7
Bangladesh	64.68	0.8	9	60.19	1.2	8
Sweden	51.35	0.6	10	54.71	1.1	9
United States	49.45	..	..	52.33	1.1	10
Austria	30.00	..	..	75.52	1.5	6

Note:

*From 1 Jan. 2002 to 30 June 2002.

Source: "Bhutan Trade Statistics up to 30th June 2002", Dept. of Revenue & Customs, MoF, Thimphu.

TABLE 10.7
GROSS INTERNATIONAL RESERVES, 1999/00 TO 2002/03

Money reserves	1999/00	2000/01	2001/02	2002/03
Millions of Indian Rupees				
1. Rupee reserves	3,165.0	3,617.3	3,730.7	3,351.6
Royal Monetary Authority	102.0	89.4	635.7	863.6
Bank of Bhutan	1,819.5	2,149.7	1,980.9	1,755.8
Bank National Bhutan	1,191.9	1,328.3	1,064.1	732.2
Royal Insurance Coperation of Bhutan	51.5	50.0	50.0	0.0
Millions of US Dollars				
2. Convertible currency	221.8	217.2	240.7	302.3
Royal Monetary Authority (a)	197.7	186.1	202.6	244.4
Royal Government	..	..	..	..
Bank of Bhutan	11.4	16.3	18.5	39.8
Bank National Bhutan	12.6	14.8	19.5	18.0
Royal Insurance Corporation of Bhutan (RICB)	0.0	0.00	0.1	0.2
3. Total reserves(1+2)	292.6	294.2	316.9	374.0
Month of Imports				
4. Total reserves	19.43	18.23	20.71	23.33
Rupee reserves	6.26	5.82	6.41	5.75
Convertible currecny reserves	59.18	74.56	70.66	84.68

Note:

(a) Including reserve tranche position in the fund.

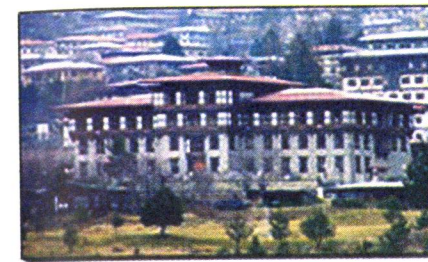
Source: "Selected Economic Indicators June 2003", Royal Monetary Authority, Thimphu.

TABLE 10.8
MONTHLY AVERAGE EXCHANGE RATES, NGULTRUMS PER US \$, 1999 TO 2003

Month	1999	2000	2001	2002	2003
January	42.508	43.55	46.54	48.34	47.93
February	42.464	43.61	46.52	48.69	47.74
March	42.437	43.59	46.62	48.74	47.65
April	42.726	43.64	46.79	48.92	47.38
May	42.771	43.97	46.92	49.00	47.08
June	43.137	44.69	47.01	48.96	46.72
July	43.286	44.78	47.14	48.76	46.23
August	43.461	45.69	47.13	48.59	45.94
September	43.538	45.89	47.65	48.44	45.85
October	43.454	46.35	48.02	48.37	45.39
November	43.398	46.78	48.00	48.38	45.47
December	43.485	46.75	47.92	48.14	45.59
Calendar year average	43.321	44.94	47.19	48.61	46.58
Fiscal year average	1998/99	1999/00	2000/01	2001/02	2002/03
	43.18	43.64	46.39	48.21	47.93

Source : "Selected Economic Indicators June 2003", Royal Monetary Authority, Thimphu.

CHAPTER 11: MONEY, BANKING AND FINANCE



Until recent times most economic transactions in Bhutan were carried out on the basis of barter arrangements. The widespread use of money commenced during the 1960s with the expansion of trade with India and the inflow of development assistance. The Indian Rupee was used till 1974 when the Royal Government issued its first currency notes the Ngultrum. Since then, the monetary section has grown rapidly resulting in the dramatic economic development and improvement in transport and communication, planned urbanization in spite of the fact that barter economy still remains in some part of the country. The monetary sector in Bhutan comprises the Royal Monetary Authority, Bhutan's Central Bank; the Bank Of Bhutan and the Bhutan National Bank. The non-bank financial institutions are the Royal Insurance Corporation of Bhutan and the Bhutan Development Finance Corporation that was established during 1988 to provide long-term loans for development purposes.

The Royal Monetary Authority has developed a comprehensive statistical system for the money, banking and finance sector. Important economic indicators are available in the regular quarterly bulletins "Selected Economic Indicators". The main element of the system is the monetary survey, which is a consolidation of the accounts of the Royal Monetary Authority and other Banks and Financial Institutions showing the financial relationship between these institutions and other sectors of the economy. Items covered include foreign assets and domestic credit, together with information on the money supply. In addition, financial statements are also available for the two non-bank financial institution.

TABLE 11.1

MONETARY SURVEY, ROYAL MONETARY AUTHORITY, BHUTAN NATIONAL BANK AND BANK OF BHUTAN, 2000 TO 2003

Item	(Nu. in Million)			
	2000	2001	2002	2003*
Assets total	15,661.0	16,312.7	20,252.8	20,882.4
Reserves	15,073.7	14,823.3	17,303.7	17,340.7
Foreign Assets	15,073.7	14,823.3	17,303.7	17,340.7
Rupee	3,711.2	3,405.1	4,567.0	3,647.1
Others	11,138.1	11,418.2	12,736.7	13,693.6
Investment total (a)	587.3	1,489.4	2,949.0	3,541.7
Claims on Government enterprises	(1,499.4)	(1,255.7)	(455.9)	(681.9)
Claims on private sector	1,624.3	2,308.7	3,031.5	3,855.3
Claims on deposit money banks	126.7	117.4	..	..
Claims on NFIs(1)	3.0	3.7	3.7	3.7
Real estate	..	..	..	..
Liabilities total	10,150.6	10,807.2	13,886.8	15,672.8
General Insurance reserve funds	..	..	..	..
Life fund	..	..	..	..
Government employee provident funds	..	..	..	..
Group Insurance Fund	..	..	..	..
Credit from DMB	..	..	..	..
Unit Trust of Bhutan fund	..	..	..	..
Capital accounts	756.1	989.5	1,194.3	1,272.9
Other items(net)	5,510.4	5,505.5	6,366.0	5,209.7

Notes:

(1) NFIs stands for Non Monetary Financial Institutions.

*From 1 Jan. 2003 to 30 June 2003

Source : Royal Monetary Authority of Bhutan, Thimphu.

TABLE 11.2

FINANCIAL DETAILS OF ROYAL INSURANCE CORPORATION OF BHUTAN, 1999 TO 2003

Item	(Nu. in Million)				
	1999	2000	2001	2002	2003*
Assets total	2,022.8	956.9	1,077.4	1,259.1	1,358.5
Reserves	84.9	45.5	30.6	44.2	92.1
Foreign Assets	55.8	52.1	55.4	8.7	8.8
Rupee	53.1	51.0	50.0	2.7	0.0
Others	2.7	1.1	5.4	6.0	8.8
Investment total (a)	1,881.9	859.4	991.3	1,206.2	1,257.6
Claims on Government enterprises	41.2	17.3	17.3	18.2	18.2
Claims on private sector	669.7	842.1	974.0	1,138.0	1,184.4
Claims on deposit money banks	1,171.0	0.0	0.0	50.0	55.0
Claims on NFIs	0.0	0.0	0.0	0.0	0.0
Real estate	0.0	0.0	0.0	0.0	0.0
Liabilities total	2,022.8	956.9	1,077.4	1,259.1	1,358.5
General Insurance reserve funds	21.9	0.0	0.0	0.0	0.0
Life fund	34.4	45.0	44.1	55.8	56.9
Government employee provident funds	1,474.6	509.4	360.2	47.8	56.0
Group Insurance Fund	122.3	120.0	153.3	168.0	185.6
Credit from DMB	90.0	90.0	595.0	673.6	673.6
Unit Trust of Bhutan fund	0.0	0.0	0.0	0.0	0.0
Capital accounts	463.5	408.6	156.8	193.6	247.3
Other items (net)	-94.0	-216.1	-232.0	120.0	139.1

Notes:

(1) NFIs stands for Non Monetary Financial Institutions. (a) Including Bhutan National bank.

*From 1 Jan. 2003 to 30 June 2003

Source: Royal Monetary Authority of Bhutan, Thimphu.

TABLE 11.3
FINANCIAL DETAILS OF BHUTAN NATIONAL BANK, 1999 TO 2003

Item	(Nu. in Million)				
	1999	2000	2001	2002	2003*
Assets total	1,979.4	3,705.3	3,979.7	4,854.7	5,310.4
Reserves	107.3	122.3	195.4	..	..
Investments through RICB(a)	939.4	..	2.0	..	..
Claims on private sector	766.7	940.8	1,213.9	1,690.4	2,003.2
Claims on joint sector	8.4	5.0	7.4	7.6	7.6
Claims on deposit money banks (Fixed deposits)	..	0.00	0.00	..	..
Claims on other NBFIs	..	..	..	..	..
Liabilities total	1,650.6	3,126.1	..	..	..
Deposits under unit shares	348.2	202.6	..	..	..
Deposits under fixed term units	1,034.7	2,070.7	2,220.6	..	..
Recurring deposits	..	..	..	..	..
Provident fund	..	0.00	0.00	..	..
Credit from deposit money banks	0.00	0.00	0.00	0.00	0.00
Credit from RMA(b)	0.00	0.00	0.00	0.00	0.00
Capital accounts	173.7	242.2	334.9	328.5	357.8
Other items(net)	94.0	397.8	154.7	148.6	186.9
Call loans	..	..	..	..	..

Notes:

(a) RICB stands for Royal Insurance Corporation of Bhutan, (b) RMA stands for Royal Monetary Authority
*From 1 Jan. 2003 to 30 June 2003

Source: Royal Monetary Authority and Bank of Bhutan, Thimphu.

TABLE 11.4
MONEY AND BANKING DETAILS OF BHUTAN DEVELOPMENT FINANCE CORPORATION, 1999 TO 2003

Item	(Nu. in Million)				
	1999	2000	2001	2002	2003*
Assets total	566.5	696.5	789.6	959.9	1,181.7
Reserves	28.7	46.9	39.3	47.0	89.0
Foreign assets	0.0	0.0	0.0	0.0	0.0
Rupees	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	0.0
Claims on Government	0.0	0.0	0.0	0.0	0.0
Claims on Government Corporations	1.4	1.4	0.9	0.9	0.9
Claims on joint corporations	0.0	0.0	0.0	0.0	0.0
Claims on private sector	450.4	500.1	643.4	909.0	1,091.9
Claims on DMBs(a)	86.1	148.1	106.0	3.0	0.0
Claims on other NMFIs(b)	0.0	0.0	0.0	0.0	0.0
Liabilities total	566.5	696.5	789.6	959.9	1,181.7
Foreign liabilities	186.5	285.9	267.4	349.2	342.6
Credit from RMA	0.0	0.0	0.0	0.0	0.0
Credit from DMB(a)	0.0	0.0	0.0	0.0	200.0
Credit from other NMFIs	0.0	0.0	0.0	0.0	0.0
Grants	50.0	50.0	50.0	50.0	50.0
Capital account	267.2	254.5	346.2	395.8	393.0
Other items net	62.8	106.2	126.0	164.8	196.1

Notes:

The summary exclude Agriculture Credit Program

(a) represents deposits other than demand deposit (b) represents purchase of unit shares of UTB

© RMA stands for Royal Monetary Authority.

*From 1 Jan. 2003 to 30 June 2003

Source: Royal Monetary Authority of Bhutan, Thimphu.

TABLE 11.5

MONEY AND BANKING OF ROYAL MONETARY AUTHORITY OF BHUTAN, 2000 TO 2003

Item	(Nu. in Million)			
	(End of the period)			
	2000	2001	2002	2003*
Assets total	11,253.8	11,011.2	12,321.9	12,527.3
Foreign assets	10,357.6	10,716.1	11,996.7	12,322.7
Indian rupee	87.8	63.6	913.4	863.6
Convertible Foreign Currency	10,045.4	10,435.4	11,085.3	11,459.1
Claims on deposit money banks	892.7	293.2	194.3	147.5
Claims on Government	0.0	0.0	127.0	56.0
Claims of private sector	3.5	1.9	1.9	1.1
Claims on NMFIs	0.0	0.0	0.0	0.0
Liabilities total	11,253.9	11,011.2	12,321.9	12,527.3
Reserve money	6,021.6	6,160.7	6,982.1	8,123.0
Currency outside banks	1,269.6	1,609.9	1,652.1	1,699.0
Foreign Liabilities	0.0	0.0	0.0	0.0
Rupee	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0
Government deposits	918.2	337.7	141.3	174.3
RMA Bills Outstanding	410.0	410.0	1,100.0	700.0
Capital Account	220.6	161.0	277.8	93.5
Other items (net)	3,183.5	3,441.7	3,820.7	3,436.6

Note:

*From 1 Jan. 2003 to 30 June 2003

Source: Royal Monetary Authority, Thimphu

TABLE 11.6

MONEY AND BANKING, BANK OF BHUTAN, 2000 TO 2003

Item	2000	2001	2002	2003*
Assets total	7,813.5	9,137.7	11,300.5	12,313.7
Reserve with RMA	2,821.0	3,083.8	4,555.6	5,253.6
Foreign assets	2,495.2	3,027.0	4,189.8	3,612.9
Rupee	2,072.5	2,074.7	3,002.6	1,755.8
Other	424.8	952.3	1,187.2	1,857.1
Claims on Government	50.0	250.0	853.8	1,538.0
Claims on Government's corpns.	332.6	315.2	252.0	257.2
Claims on joint's Corporations	121.7	110.0	110.2	119.7
Claims on private sector	680.0	1,093.0	1,339.2	1,532.2
Liabilities total	6,745.5	8,531.5	11,300.5	12,498.3
Demand deposit (a)	1,998.1	2,554.8	4,672.4	3,863.6
Time deposit	3,744.7	3,407.8	3,203.2	3,536.1
Foreign currency deposits	158.7	209.3	441.9	1,159.0
Foreign liabilities	0.0	973.4	0.0	184.6
Rupee	0.0	973.4	0.0	184.6
Other	0.0	0.0	0.0	0.0
Government deposits	330.1	731.6	775.5	869.9
Credit from RMA	0.0	0.0	0.0	0.0
Capital accounts	513.8	654.7	865.8	853.9
Other items (net)	1,068.0	606.2	1,341.8	2,031.2

Notes:

In 1997 the Bhutan National Bank included with Bank of Bhutan. (a) Saving deposits included in demand deposits.

*From 1 Jan. 2003 to 30 June 2003

Source: Royal Monetary Authority, Thimphu.

TABLE 11.7

INVESTMENTS OF FINANCIAL INSTITUTIONS BY INDUSTRY,
AMOUNTS OUTSTANDING, 2000 TO 2003*

Industry	2000	2001	2002	2003*
Agriculture	168.3	201.9	229.6	229.6
Bank of Bhutan	3.1	3.2	6.2	6.2
RICB	0.7	0.6	0.3	0.3
BDFC	164.5	198.0	223.1	223.1
UTB	0.0	0.0	0.0	0.0
Industry, Manufacturing	588.0	785.2	974.1	974.2
Bank of Bhutan	240.3	222.4	253.8	253.8
RICB	111.3	202.7	256.8	256.9
BDFC	71.2	138.3	180.7	180.7
UTB	165.3	221.8	282.7	282.7
Building and construction	620.3	718.8	1113.4	1,113.4
Bank of Bhutan	99.1	142.0	233.2	233.2
RICB	279.7	273.9	331.5	331.5
BDFC	28.4	41.3	140.8	140.8
UTB	213.1	261.6	408.0	408.0
Trade and commerce	427.0	1,643.4	1261.7	1,266.8
Bank of Bhutan	259.1	1,163.3	578.2	578.2
RICB	62.8	118.0	146.9	152.0
BDFC	39.2	169.6	255.8	255.8
UTB	15.9	192.6	280.9	280.9
Transport	598.3	712.0	729.7	729.2
Bank of Bhutan	405.5	404.2	411.4	411.4
RICB	68.1	160.9	151.7	151.2
BDFC	36.9	24.0	12.5	12.5
UTB	87.8	122.9	154.2	154.2
Personal and other loans	691.0	497.0	598.7	593.5
Bank of Bhutan	138.8	89.5	91.4	91.4
RICB	154.1	124.1	161.3	156.1
BDFC	26.5	15.4	5.3	5.3
UTB	371.6	268.0	340.8	340.8
Total	3,092.8	4,558.3	4907.1	4906.7

Note:

*From 1 Jan. 2003 to 30 June 2003

Source: Royal Monetary Authority, Thimphu

TABLE 11.8

INTEREST RATES FOR DEPOSITS IN FINANCIAL INSTITUTIONS, 1998 TO 2002

Type of deposit	1998	1999	2000	2001	2002
Savings	5.0%	5.0%	5.0%	5.0%	5.0%
46 days to less than 3 months	6.0%	6.0%	5.5%	5.5%	4.0%
3 months to less than 1 year	8.0%	8.0%	7.0%	7.0%	5.5%
1 year to less than 3 years	10.0%	10.0%	9.0%	9.0%	7.5%
3 years and above	11.0%	11.0%	10.0%	10.0%	8.5%

Source: Bank of Bhutan, Thimphu.

TABLE 11.9

INTEREST RATES AND REPAYMENT PERIOD BY SECTOR AND TYPE OF LOAN,
FINANCIAL INSTITUTIONS (a), 2002 TO 2003

Sector	2002		2003*	
	Interest	Repayment	Interest	Repayment
	Rate (% p.a)	period (Years)	Rate (% p.a)	period (Years)
Export finance				
(convertible currency areas)	13-15.5	1	13-15	1
General trade	15-15.5	3	15.0	3
Buses and trucks	13-16	5	13-16	5
Other passenger vehicles	15.5-16	5	13-16	5
Agriculture and Livestock	13.0	10	13-15	10
Manufacturing Industry	13.0	10	12.0	10
Service Industries(b)	13.0	5	12-13	5
Personal loans	15-16	5	15-16	5
Equity finance	13-14	5	13-14	5
Working capital	13-15.5	..	12-15	..
Housing	14.0	20	13.0	20

Notes:

(a) Rates applicable since August 22, 1994.

(b) includes tourism, contract services, and other service activities.

*As of June 2003

Source: Royal Monetary Authority, Thimphu.

TABLE 11.10
ROYAL SECURITIES EXCHANGE OF BHUTAN
NUMBER OF SHAREHOLDERS 2000 TO 2003

Company	2000	2001	2002	2003*
Bhutan Beverages & Company Ltd.	..	..	4820.0	4552.0
Bhutan Board Products Ltd.	489.0	489.0	489.0	489.0
Bhutan Carbide & Chemical Ltd.	266.0	266.0	267.0	267.0
Bhutan Dairy Ltd.	96.0	96.0	96.0	96.0
Bhutan Ferro-Alloys Ltd.	42.0	37.0	37.0	37.0
Bhutan National Bank	407.0	405.0	409.0	411.0
Bhutan Polimers Company Ltd.	78.0	78.0	95.0	95.0
Bhutan Tourism Corpn. Ltd	89.0	89.0	83.0	82.0
Druk Petroleum Corpn. Ltd.	80.0	80.0	80.0	80.0
Druk plaster & Chemicals Ltd.		203.0	203.0	79.0
Druk Satair Corpn. Ltd.	1,201.0	1,201.0	1,200.0	1,200.0
Druk Stone & Minerals Ltd.	64.0	64.0	64.0	64.0
Penden Cement Authority Ltd.	1,630.0	1,616.0	1,620.0	1,620.0
Royal Insurance Corpn. of Bhutan	2,543.0	2,056.0	1,871.0	1,800.0
State Trading Corpn. of Bhutan	133.0	133.0	127.0	127.0
Total	7,118.0	6,813.0	11,461.0	10,999.0

Note:

*From 1 Jan. 2003 to 30 June 2003

Source: Royal Securities Exchange of Bhutan, Thimphu.

TABLE 11.11(a)
ROYAL SECURITIES EXCHANGE OF BHUTAN
MARKET INFORMATION AT THE END OF DECEMBER 2002

Company	Price per share	Paid-up Shares	Market capitalization
Bhutan Beverages & Company Ltd.	100	1,150,000	115,000,000
Bhutan Board Products Ltd.	89	1,400,014	124,601,246
Bhutan Carbide Chemical Ltd.	5,000	100,000	500,000,000
Bhutan Dairy Ltd.	100	25,000	2,500,000
Bhutan Ferro-Alloys Ltd.	140	1,500,000	210,000,000
Bhutan National Bank	2,000	595,040	1,190,080,000
Bhutan Polimers Company Ltd.	250	249,334	62,333,500
Bhutan Tourism Corpn. Ltd	1,500	20,940	31,410,000
Druk Petroleum Corpn. Ltd.	100	62,370	6,237,000
Druk plaster & Chemicals Ltd.	100	100,000	10,000,000
Druk Satair Corpn. Ltd.	100	304,032	30,403,200
Druk Stone & Minerals Ltd.	100	37,702	3,770,200
Penden Cement Authority Ltd.	4,600	226,667	1,042,668,200
Royal Insurance Corpn. of Bhutan	4205	48,000	201,840,000
State Trading Corpn. of Bhutan	130	200000	26000000
Total		3469085	3317242100

Source: Royal Securities Exchange of Bhutan, Thimphu.

TABLE 11.11(b)
ROYAL SECURITIES EXCHANGE OF BHUTAN
MARKET INFORMATION AT THE END OF JUNE 2003

Company	Price per share	Paid-up Shares	Market capitalization
Bhutan Beverages & Company Ltd.	345	115,000	396,750,000
Bhutan Board Products Ltd.	89	1,400,014	124,601,246
Bhutan Carbide & Chemical Ltd.	5,000	100,000	500,000,000
Bhutan Dairy Ltd.	100	2,500	2,500,000
Bhutan Ferro-Alloys Ltd.	140	1,500,000	210,000,000
Bhutan National Bank	2,000	595,040	1,190,080,000
Bhutan Polimers Company Ltd.	300	249,334	74,800,200
Bhutan Tourism Corpn. Ltd	1,500	20,940	31,410,000
Druk Petroleum Corpn. Ltd.	100	62,370	6,237,000
Druk plaster & Chemicals Ltd.	100	100,000	10,000,000
Druk Satair Corpn. Ltd.	100	304,032	30,403,200
Druk Stone & Minerals Ltd.	100	37,702	3,770,200
Penden Cement Authority Ltd.	5,100	226,667	1,156,001,700
Royal Insurance Corpn. of Bhutan	4,205	96,000	403,680,000
State Trading Corpn. of Bhutan	130	200000	26000000
Total	..	3517085	3644882300

Source: Royal Securities Exchange of Bhutan, Thimphu.

TABLE 11.12
ROYAL SECURITIES EXCHANGE OF BHUTAN
VOLUME TRADED TAKEN AT THE END OF DECEMBER 2000 TO 2003

Company	2000	2001	2002	2003*
Bhutan Beverages & Company Ltd.	..	..	1160153	15,551
Bhutan Board Products Ltd.	5,000	..	230	..
Bhutan Carbide 6 Chemical Ltd.	4	58	..	6
Bhutan Dairy Ltd.	..	..	..	..
Bhutan Ferro-Alloys Ltd.	3,500	24,750	..	..
Bhutan National Bank	3,773	124,119	2,898	100
Bhutan Polimers Company Ltd.	58,719	..	57,185	1,000
Bhutan Tourism Corpn. Ltd	..	..	20	15
Druk Petroleum Corpn. Ltd.	..	..	..	..
Druk plaster & Chemicals Ltd.	..	30,000	..	..
Druk Satair Corpn. Ltd.	23	304,032	..	27
Druk Stone & Minerals Ltd.	n.a	4,800	..	..
Penden Cement Authority Ltd.	3,977	1,393	2,974	280
Royal Insurance Corpn. of Bhutan	12,141	2,021	1,583	81,636
State Trading Corpn. of Bhutan	10,000	10	..	..
Total	97,137	491,183	1,225,043	98,615

Note:

*As of June 2003

Source: Royal Securities Exchange of Bhutan, Thimphu.

TABLE 11.13

ROYAL SECURITIES EXCHANGE OF BHUTAN
TRADED VALUES FROM DECEMBER 2000 TO 2003

		(Nu.in Million)			
Company		2000	2001	2002	2003*
Bhutan Beverages & Company Ltd.	Primary	..	..	115.000	..
	Secondary	..	..	1.020	2.787
Bhutan Board Products Ltd.	Primary	..	..	..	..
	Secondary	0.520	..	0.023	..
Bhutan Carbide & Chemical Ltd.	Primary	..	..	..	..
	Secondary	0.016	0.286	..	0.031
Bhutan Dairy Ltd.	Primary	..	..	..	..
	Secondary	..	..	..	..
Bhutan Ferro-Alloys Ltd.	Primary	..	..	..	..
	Secondary	..	3.470	..	..
Bhutan National Bank	Primary	..	..	..	..
	Secondary	2.060	60.160	3.830	0.200
Bhutan Polimers Company Ltd.	Primary	5.870	..	..	..
	Secondary	..	..	13.280	0.300
Bhutan Tourism Corpn. Ltd	Primary	..	..	..	..
	Secondary	0.470	..	0.030	0.023
Druk Petroleum Corpn. Ltd.	Primary	..	..	..	..
	Secondary	..	..	..	..
Druk plaster & Chemicals Ltd.	Primary	..	3.000	..	..
	Secondary	..	..	..	..
Druk Satair Corpn. Ltd.	Primary	..	30.400	..	..
	Secondary	0.002	..	..	0.003
Druk Stone & Minerals Ltd.	Primary	..	..	..	..
	Secondary	..	0.480	..	..
Penden Cement Authority Ltd.	Primary	..	..	..	..
	Secondary	13.960	5.880	13.650	1.407
Royal Insurance Corpn. of Bhutan	Primary	24.540	..	..	81.860
	Secondary	7.140	8.290	6.620	1.161
State Trading Corpn. of Bhutan	Primary	..	..	..	..
	Secondary	..	..	..	..
Total		54.578	111.966	153.453	87.770

Note:

*As of June 2003

Source: Royal Securities Exchange of Bhutan, Thimphu.

CHAPTER 12: PUBLIC FINANCE



The system of modern public finance in Bhutan is of very recent origin. Traditionally taxes were being collected in kind; the levy on agricultural produce being on an average one fourth of the

production of each farming family and labour contribution amounting to about two months labour for every adult. By 1960, as the government began to grow, institutionalization of public finance became a necessity.

In 1963, the position of a Finance Secretary was created in the Royal Secretariat and in 1968 the Ministry of Finance; one of the first few Ministries was formed. In 1970, the system of payment of taxes in kind was largely dispensed with so as to be taken up by the system of cash taxes based on the type of land holding.

The Ministry of Finance presented the first budget on modern lines in 1971. It was called the Civil Budget as it covered the needs of the Ministry of Finance, Home affairs and Foreign Affairs. The requirements of development oriented Ministries like Communication and Tourism, Trade and Industry, Forest and Development were provided under a separate development budget administered first by the Development Secretariat and then by its successor, the Planning Commission. With the commencement of the Fifth Five Year Plan the classification of the government budget into Civil and Development was replaced by the concept of Maintenance and Development Expenditures. Maintenance or Current Expenditures reflected mostly the current or consumption expenditures of the government while development expenditures were identified largely with the expenditures of the government on fixed capital formation.

TABLE 12.1

CURRENT BUDGETARY EXPENDITURE OF THE GOVERNMENT BY MINISTRY/
AGENCY, 1999/00 TO 2002/03

Ministry/Non-ministerial Organization	(Nu. in Million)			
	1999/00 (actual)	2000/01 (actual)	2001/02 (actual)	2002/03 (revised)
Ministry	2,468.0	2,293.8	2,800.7	2,999.9
Agriculture	331.1	395.3	420.9	489.2
Communications	247.5	216.5	251.1	282.4
Finance	504.6	207.7	551.9	598.3
Foreign Affairs	177.8	191.2	196.8	233.4
Health & Education	546.9	591.3	616.6	851.0
Home Affairs	375.1	376.9	399.7	437.0
Planning	12.5	10.9	..	..
Trade and Industry	272.6	304.0	363.7	108.8
Non Ministerial organization	n.a	n.a	n.a	n.a
His Majesty's Secretariat	9.9	11.4	12.4	12.8
Central Monastic Secretariat	n.a	n.a	n.a	n.a
National Assembly	13.4	12.2	13.4	19.2
Royal Advisory Council	7.7	8.2	9.8	8.0
Cabinet Secretariat	n.a	n.a	2.7	5.9
Royal Civil Service Commission	17.4	10.5	10.0	14.4
Judiciary	46.6	53.0	62.6	62.1
Royal Audit Authority	23.2	27.4	29.9	32.1
Bhutan Govt. Transport Service	n.a	134.2	n.a	n.a
Bhutan Olympic Committee	18.0	20.5	23.2	12.5
Centre for Bhutan Studies	n.a	n.a	4.3	5.2
Council for Religious Affairs	n.a	n.a	118.8	129.6
Department of legal Affairs	n.a	n.a	6.8	7.3
Druk Air Corporation	n.a	29.0	n.a	n.a
Dzongkhag Development Commission	6.4	10.2	10.0	8.1
National Commission for Cultural aff	n.a	n.a	30.9	37.9
National Employment Board	n.a	n.a	6.4	n.a
National Environment Commission	n.a	n.a	10.0	12.0
National Technical Training Authority	n.a	n.a	51.0	73.8
National Women's Association	n.a	0.4	n.a	n.a
Planning Commission Secretariat	n.a	n.a	12.3	24.6
Royal Institute of Management	n.a	n.a	23.1	26.9
Royal Monetary Authority	n.a	n.a	n.a	n.a
Science and Technology	n.a	n.a	n.a	n.a
Social and Cultural Division	n.a	n.a	n.a	n.a
Special Commission	23.6	31.4	n.a	n.a
Tourism Corporation	n.a	5.0	n.a	n.a
Urban Development Corporation	n.a	n.a	n.a	n.a

Contd...

TABLE 12.1(contd.)

CURRENT BUDGETARY EXPENDITURE OF THE GOVERNMENT BY MINISTRY/
AGENCY, 1999/00 TO 2002/03

Ministry/Non-ministerial Organization	(Nu. in Million)			
	1999/00 (actual)	2000/01 (actual)	2001/02 (actual)	2002/03 (revised)
Punakha Dzong Renovation	n.a	n.a	n.a	3.6
Zonal Administration, Chhukha	55.8	91.9	..	..
Zonal Administration, Tsirang	15.5	29.9	..	..
Dzongkhag Administration, Thimphu	97.7	117.7	131.6	138.9
Dzongkhags Administration	678.6	n.a	1,229.7	1,332.3
Common public expenditure	n.a	n.a	n.a	n.a
Total current expenditure	3,702.1	4,435.6	4,467.9	4,863.8

Source : Department of Budget & Accounts, MoF, Thimphu.

TABLE 12.2

BUDGETARY DEVELOPMENT EXPENDITURE OF THE GOVERNMENT BY MINISTRY/
AGENCY, 1999/00 TO 2002/03

Ministerial/Non-Ministerial Organization	(Nu. in Million)			
	1999/00 (actual)	2000/01 (actual)	2001/02 (actual)	2002/03 (revised)
Ministry	3,425.70	n.a	4,350.37	5,008.05
Agriculture	289.20	319.33	423.73	829.75
Communications	927.50	1,034.70	1,021.31	1,540.19
Finance	1,406.00	207.67	472.53	381.89
Foreign Affairs	15.60	258.50	29.37	257.82
Health & Education	n.a	n.a	797.27	671.97
Home Affairs	102.90	86.39	71.74	138.85
Planning	5.20	2.80	..	..
Trade and Industry	678.30	3,118.08	1,534.43	1,187.59
Non ministerial organization	n.a	n.a	n.a	n.a
His Majesty's Secretariat	n.a	n.a	0.69	1.12
Bhutan Olympic Committee	0.80	2.16	2.97	1.14
Cabinet Secretariat	n.a	n.a	0.09	0.34
Central Monastic Secretariat	n.a	n.a	n.a	n.a
Centre for Bhutan Studies	n.a	n.a	1.18	0.84
Council of for Religious Affairs	n.a	n.a	14.68	26.18
Department of Legal Affairs	n.a	n.a	5.29	6.00
Dzongkha Dev. Commission	0.50	14.061	13.91	2.78
Judiciary	13.50	34.47	15.53	18.42
National Women's Association	n.a	1.34	n.a	n.a

Contd...

TABLE 12.2 (contd.)

BUDGETARY DEVELOPMENT EXPENDITURE OF THE GOVERNMENT BY MINISTRY/
AGENCY, 1999/00 TO 2002/03

Ministry/Non-ministerial Organization	1999/00 (actual)	2000/01 (actual)	2001/02 (actual)	2002/03 (revised)
National Assembly	9.70	3.13	5.24	1.37
National Commission for Cultural Affairs	n.a	n.a	19.28	33.42
National Employment Board	n.a	n.a	1.51	n.a
National Environment Commission	6.20	n.a	14.31	20.92
National Technical Training Authority	n.a	n.a	34.45	137.31
Planning Commission Secretariat	n.a	n.a	9.76	23.64
Royal Advisory Council	1.30	0.05	1.92	0.92
Royal Audit Authority	2.80	11.90	9.91	17.55
Royal Civil Service Commission	99.30	101.33	120.28	161.51
Royal Institute of Management	n.a	n.a	6.09	15.98
Royal Monetary Authority	n.a	n.a	n.a	n.a
Royal Secretariat (HM)	9.90	0.20	n.a	n.a
SAARC Conference complex	n.a	n.a	n.a	7,759.88
Science and Technology	n.a	n.a	n.a	n.a
Social And Culture Division	n.a	13.90	n.a	n.a
Special Commission	20.20	13.90	n.a	n.a
Urban Development Corporation	n.a	n.a	n.a	n.a
Punakha Dz. Renovation Service	87.60	67.97	81.01	116.26
Dzongkhag Administration, Thimphu	40.30	70.60	60.88	57.45
Dzongkhags Administration	n.a	n.a	604.09	8,071.18
Common public expenses	n.a	n.a	n.a	n.a
Total development expenses (c)	4,632.10	n.a	5,312.55	6,024.24

Note:

Total development expense excludes Zonal Administration figure which existed earlier.

Source: "Financial Statements of the Royal Govt. of Bhutan for the year ended 30 June 2003", Department of Budget & Accounts, MoF, Thimphu.

TABLE 12.3

BUDGETARY RECEIPTS OF THE GOVERNMENT BY SOURCE, 1999/00 TO 2002/03

(Nu.in Million)				
Source of revenue	1999/00 (actual)	2000/01 (actual)	2001/02 (actual)	2002/03 (revised)
Tax revenue	1,977.10	2,192.17	2,675.55	3,086.62
Direct tax	1,063.70	1,524.65	1,626.11	1,811.49
Business Income Tax	1,056.80	1,257.67	317.20	254.49
Corporate Income Tax	833.20	919.54	987.83	1,090.14
Rural tax	7.10	10.26	9.59	8.25
Health Contribution	19.78	22.21	23.44	23.56
Individual & trading units	223.50	338.13	..	..
Royalties	221.80	275.26	214.26	325.06
Tax on payroll/PIT	56.55	65.83	73.78	110.00
Indirect tax	925.68	667.52	1,049.40	1,275.14
Bhutan Sales Tax	299.90	342.71	393.50	522.73
Export Tax	..	..	12.29	13.79
Motor Vehicle Tax	58.90	60.22	66.40	72.66
Business & Prof. Licences	12.40	18.53	20.68	22.21
Excise Duty	470.30	130.27	444.90	530.37
Import duty	58.90	78.29	94.52	93.49
Tax on Goods & Services	829.20	533.20	..	..
Other Taxes	16.70	24.35	17.15	19.88
Non tax revenue	2,404.10	2,754.60	2,424.47	2,013.59
Fees, Dividends, Profits	..	..	2,389.81	1,967.48
Administrative Fees & Charges	71.60	80.71	90.30	86.92
Dividends	1,222.10	1,296.09	1,426.83	1,343.31
Revenue from Govt. Departments	564.40	310.52	499.98	45.60
Sale of Government Properties	71.40	76.06	..	..
Transfer of Profits	248.20	714.29	363.75	490.07
Other Non-Tax revenue	4.30	1.68	8.95	1.58
Capital Revenue	71.36	76.06	34.66	46.11
Total revenue	4,381.10	4,671.52	5,100.03	5,100.22

Source: "Financial Statements of the Royal Govt. of Bhutan for the year ended 30 June 2003", Department of Budget & Accounts, MoF, Thimphu.

TABLE 12.4
SUMMARY OF BUDGETARY OPERATIONS, 1997/98 TO 2001/02
(Nu.in Million)

Item	1998/99 (actual)	1999/00 (actual)	2000/01 (actual)	2001/02 (actual)
Revenue and Grants	6,919.5	7,859.6	8,382.5	8,826.7
Revenue	3,656.9	4,585.4	4,671.5	5,100.0
Tax revenue	1,265.8	1,977.1	2,192.2	2,675.6
Non-tax revenue	228.7	2,404.1	2,754.6	2,376.1
Other*	109.3	204.3	275.3	48.3
Other Receipts(+)/Payments(-)	..	..	..	(21.8)
External Grants	3,262.6	3,274.2	3,711.0	3,748.5
India	1,928.5	1,927.1	2,551.2	2,531.8
Other	1,334.1	1,347.1	1,159.8	1,216.7
Expenditure	7,224.4	8,624.1	10,716.5	1,052.1
Current	3,178.3	3,702.1	4,435.6	4,467.9
Capital	4,105.7	4,632.1	6,280.9	5,312.6
Lending(net)	-217.6	-289.8	-50.9	..
Increase in Advance	..	..	..	141.8
Lending Minus Recoveries	..	..	..	129.8
Overall surplus/ deficit	-304.9	-764.5	-2,490.7	-1,225.4

Note:

For the year 2001/02, other* includes Interest on Loans.

Source: "Annual Financial Statements for the fiscal year 2001-2002", Department of Budget & Accounts, MoF, Thimphu.

CHAPTER 13: PLAN OUTLAYS

Development planning in Bhutan can be tracked back to the year 1961 when the first Five Year Plan (1961/62 to 1965/66) was drawn up. Initially, self-contained development secretariat was established to implement the plan. At the time of preparation of the third plan in 1971, the Planning Commission was established headed by the His Majesty the King. In the absence of basic economic information and skilled manpower, the formulation of the third plan, like earlier ones was relatively simple. Major developments in regard to the consolidation of the planning process took place in the fourth plan period, when the Dzongkhags were involved in the development process.

Until 1981 to 1982 the responsibility for making plan allocations, rising internal resources, and negotiations, foreign assistance etc. lay with the Planning Commission. In 1981 to 1982, a large part of the financial responsibilities of the Commission was transferred to the responsibilities for formulation of development plans and allocations of investments resources.

A substantial infrastructure for development of the economy had been built up in the first four plans so that by the end of the fourth plan, the planning process had gained a good deal of comprehensiveness and sophistication. These two factors enabled the economy to develop the capacity of absorbing much higher volumes of investment resources for development in the later five-year plans.

The Eighth Five Year Plan (1997 to 2002) laid emphasis towards attaining the objective of economic self-reliance, higher growth and greater distributional equity, the preservation and promotion of traditional values and ideals, and promotion of privatization. The Ninth Five Year Plan began in July 2002 will pursue maximization of Gross National Happiness as Development Goal and an Objective. Recognizing that wide ranges of factors that contribute to human well-being and happiness, four major areas are being identified as the pillars of Gross National Happiness. These are economic growth and development, preservation and promotion of cultural heritage, preservation and sustainable use of the environment, and good governance

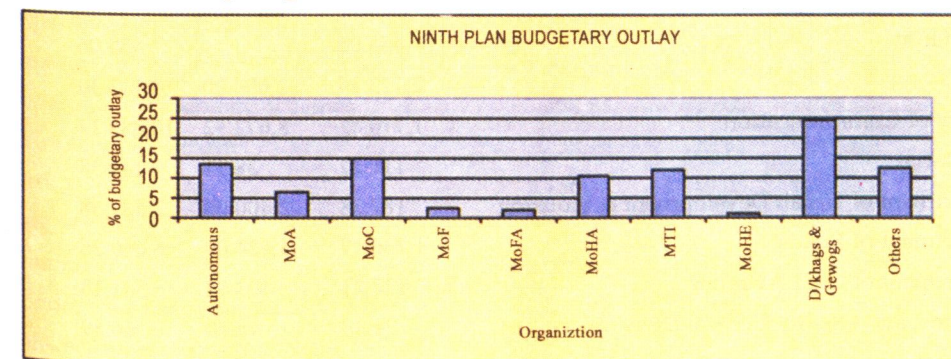


TABLE 13.1
NINTH PLAN BUDGETARY OUTLAY AND ALLOCATION

Organization	(Nu. in Million)			
	Recurrent	Capital	Total	Percent
Autonomous Agencies	4,649.25	4,972.52	9,621.77	13.7
His Majesty's Secretariat	77.17	3.95	81.12	0.1
National Assembly Secretariat	83.06	6.72	89.78	0.1
Royal Advisory Council	52.18	1.30	53.48	0.1
Cabinet Secretariat	16.28	1.30	17.58	0.0
Royal Civil Service Commission	64.08	3,000.00	3,064.08	4.4
Judiciary	193.97	215.83	409.81	0.7
Royal Audit Authority	190.58	24.50	215.08	0.3
Bhutan Broadcasting Service	0.00	348.00	348.00	0.5
Bhutan Olympic Committee	166.48	43.72	210.20	0.3
Centre for Bhutan Studies	5.37	15.24	20.61	0.0
Council for Ecclesiastical Affairs	719.93	77.66	797.58	1.1
Dzongkha Development Commission	48.46	10.00	58.46	0.1
National Commission for Cultural Affairs	193.97	77.66	797.58	0.6
National Environment Commission	29.24	31.73	60.97	0.1
National Technical Training Authority	335.93	500.00	835.93	1.2
Office of the Legal Affairs	17.71	17.60	35.30	0.1
Planning Commission Secretariat	63.96	45.00	108.96	0.2
Police, Jail & Fire Services	2,064.35	355.01	2,419.36	3.5
Royal Institute of Management	156.35	149.00	305.35	0.4
Ministry of Agriculture	2,548.36	2,000.00	4,548.36	6.5
Secretariat	435.06		435.06	0.6
RNR	2,113.30	2,000.00	4,113.30	5.9
Ministry of Communication	1,710.62	8,672.52	10,383.13	14.8
Secretariat	111.27	38.11	149.38	0.2
Department of Urban Development & Housing	187.38	2,400.00	2,587.38	3.7
Department of Roads	1,136.17	5,524.09	6,660.26	9.5
Department of Civil Aviation	127.21	403.92	531.13	0.8
Standard and Quality Control Division	21.49	45.10	66.59	0.1
Road Safety and Transport Authority	89.67	162.11	251.78	0.4
Bhutan Telecom Authority	17.65	21.05	38.70	0.1
Division of Information Technology	19.80	60.00	79.80	0.1
Construction Development Board		18.13	18.13	0.0

Contd.

TABLE 13.1(contd.)
NINTH PLAN BUDGETARY OUTLAY AND ALLOCATION

Organization	(Nu. in Million)			
	Recurrent	Capital	Total	Percent
Ministry of Finance	1,257.25	354.87	1,612.12	2.3
Secretariat	675.89	27.50	703.39	1.0
Department of Budget and Accounts	44.26	17.80	62.06	1.0
Department of National Properties	150.99	25.33	176.32	0.3
Department of Revenue and Customs	357.35	257.54	614.88	0.9
Department of Aid and Debt Management	28.76	26.70	55.46	0.1
Department of Aid and Debt Management	28.76	26.70	55.46	0.1
Ministry of Foreign Affairs	1,278.69	176.21	1,454.90	2.1
Ministry of Health and Education	4,581.09	2,893.41	7,474.50	10.7
Secretariat	129.08	0.00	129.08	0.2
Department of Health	2,802.43	1,703.41	4,505.84	6.4
Department of Education	1,598.49	998.48	2,596.96	3.7
Department of Employment & Labour	51.11	191.52	242.63	0.4
Ministry of Home Affairs	486.38	130.57	616.85	0.9
Secretariat	230.47	30.66	261.13	0.4
Department of Survey and Land Records	183.65	22.85	206.49	0.3
Department of Registration	72.27	77.06	149.33	0.2
Ministry of Trade and Industry	2,210.43	6,351.08	8,561.52	12.2
Secretariat	112.07	371.32	483.39	0.7
Department of Trade	73.13	384.25	457.38	0.7
Department of Industry	110.28	900.00	1,010.28	1.4
Department of Power	1,717.95	4,500.00	6,217.95	8.9
Department of Geology & Mines	138.85	70.00	208.85	0.3
Department of Tourism	58.16	125.51	183.67	0.3
Others	5,156.92	3,449.05	8,605.97	12.3
Debt Servicing	393.24	3,449.05	3,842.29	5.5
Common Public Expenditure	2,009.80	0.00	2,009.80	2.9
Contingency for Renumeration	2,753.88	0.00	2,753.88	3.9
Total(Central, Autonomous and Others)	23,879.003	29,000.21	52,879.22	75.5
Dzongkhags	7,655.28	7,224.73	14,880.02	21.3
Gewogs	147.18	2,093.59	2,240.77	3.2
Total(Dzongkhags and Gewogs)	7,802.46	9,318.32	17,120.79	24.5
Total outlay	31,681.47	38,318.53	70,000.00	100.0

Source: "Ninth Plan Document 2002-2007", Planning Commission, Thimphu.

TABLE 13.2

OUTLAYS OF DEVELOPMENT PLANS, PERCENTAGE BY CATEGORY, FIFTH PLAN TO NINTH PLAN

Organization	(Nu.in Million)				
	Fifth Plan	Sixth Plan	Seventh Plan	Eighth Plan	Ninth Plan
Autonomous Agencies	..	..	..	..	13.7
His Majesty's Secretariat	n.a	n.a	n.a	0.1	0.1
National Assembly	n.a	n.a	n.a	0.1	0.1
Royal Advisory Council	n.a	n.a	n.a	0.1	0.9
Cabinet Secretariat	n.a	n.a	n.a	n.a	13.7
Royal Civil Service Commission	n.a	n.a	n.a	5.1	4.4
Judiciary	n.a	n.a	n.a	0.7	0.7
Royal Audit Authority	n.a	n.a	n.a	0.3	0.3
Bhutan Broadcasting Service	n.a	n.a	n.a	n.a	0.5
Bhutan Olympic Committee	n.a	n.a	n.a	0.2	0.3
Centre for Bhutan Studies	n.a	n.a	n.a	n.a	0.0
Council for Ecclesiastical Affairs	n.a	n.a	n.a	1.0	1.1
Dzongkha Development Commission	n.a	n.a	n.a	0.1	0.1
National Commission for Cultural Affairs	n.a	n.a	n.a	0.8	0.6
National Environment Commission	n.a	n.a	n.a	0.3	0.1
National Technical Training Authority	n.a	n.a	n.a	n.a	1.2
Office of Legal Affairs	n.a	n.a	n.a	n.a	0.1
Planning Commission Secretariat	n.a	n.a	n.a	n.a	0.2
Police, Jail & Fire Services	n.a	n.a	n.a	n.a	3.5
Royal Instt. of Management	n.a	n.a	n.a	0.5	0.4
Ministry of Agriculture	9.0	9.2	4.5	3.06	6.5
Secretariat	..	..	..	..	0.6
Animal Husbandry	3.5	3.5	2.1	1.78	..
Area Dvelopment	n.a	n.a	n.a	4.07	..
Forestry	4.9	4.4	3.1	3.1	..
Renewal Natural Resources	..	..	..	..	5.9
Ministry of Communication	..	..	..	..	14.8
Secretariat	n.a	n.a	n.a	0.2	0.2
Civil Aviation	0.6	0.5	0.6	0.2	0.8
Construction Development Board	..	..	..	..	0.4
Division of Information Technology	..	..	..	..	0.1
Post Services	1.4	0.7	1.1	0.4	..
Road Services	16.9	9.3	7.8	13.1	9.5
Standard Quality and Control Division	..	..	..	..	0.1

Contd..

TABLE 13.2(contd.)

OUTLAYS OF DEVELOPMENT PLANS, PERCENTAGE BY CATEGORY, FIFTH PLAN TO NINTH PLAN

Organization	(Nu.in Million)				
	Fifth plan	Sixth Plan	Seventh Plan	Eighth Plan	Ninth Plan
Surface Transport	n.a	n.a	n.a	0.2	0.4
Telecommunications	0.7	1.4	7.0	4.1	0.1
Thimphu City Corporation	n.a	n.a	n.a	0.5	..
Work & Housing Services	n.a	n.a	n.a	3.1	3.7
Ministry of Finance	..	..	..	..	2.3
Secretariat	n.a	n.a	n.a	2.85	1.0
Deaprt of Budget and Accounts	n.a	n.a	n.a	n.a	0.1
Department of National Properties	n.a	n.a	n.a	2.85	0.3
Depart of Revenue and customs	n.a	n.a	n.a	2.85	0.9
Department of Aid and Debt management	n.a	n.a	n.a	2.9	0.1
Ministry of Foreign Affairs	n.a	n.a	n.a	2.5	2.1
Ministry of Health & Education	n.a	n.a	n.a	n.a	10.7
Secretariat	n.a	n.a	n.a	0.2	0.2
Department of Employment and Labour	n.a	n.a	n.a	n.a	0.4
Education	11.2	8.1	11.1	9.9	3.7
Health	5.1	4.2	6.6	8.5	6.4
Ministry of Home Affairs	..	..	..	..	0.9
Secretariat	..	..	..	1.0	0.4
Department of Registration	..	..	..	0.1	0.2
Department of Survey & Land Records	..	..	..	0.4	0.3
Ministry of Trade & Industry	..	..	..	..	12.2
Secretariat	..	..	..	0.1	0.7
Geological Survey	..	0.4	1.0	0.3	0.3
Power	7.3	13.1	2.5	11.3	8.9
Tourism	0.6	..	..	0.1	0.3
Trade and Industry	7.0	13.3	5.4	0.6	2.1
Debt Servicings	n.a	n.a	n.a	7.2	5.5
Common Public Expenditure	n.a	n.a	n.a	2.1	2.9
Reserve for pay Revision	n.a	n.a	n.a	7.5	..
General Government	24.0	20.6	39.7	n.a	n.a
Dzongkhags	..	2.5	23.0	2.3	21.3
Gewogs	..	2.5	23.0	2.3	3.2
Other	..	..	..	n.a	3.9
Total outlay	100.0	91.2	100.0	103.1	100.0

Source: "Ninth Plan Main Document 2002-2007", Planning Commission, Thimphu.

TABLE 13.3
FINANCIAL OUTLAYS DURING NINTH PLAN BY SECTOR, 2002 TO 2007

Organization	(Nu. in Million)			
	Recurrent	Capital	Total	Percent
Autonomous Agencies	4,649.25	4,972.52	9,621.77	13.70
His Majesty's Secretariat	77.17	3.95	81.12	0.10
National Assembly Secretariat	83.06	6.72	89.78	0.10
Royal Advisory Council	52.18	1.30	53.48	0.10
Cabinet Secretariat	16.23	1.30	17.58	..
Royal Civil Service Commission	64.08	3,000.00	3,064.08	4.40
Judiciary	364.16	125.97	490.13	0.70
Royal Audit Authority	190.58	24.50	215.08	0.30
Bhutan Broadcasting Service	..	348.00	348.00	0.50
Bhutan Olympic Committee	166.48	43.72	210.20	0.30
Centre of Bhutan Studies	5.37	15.24	20.61	..
Council of Ecclesiastical Affairs	719.93	77.66	797.58	1.10
Dzongkhag Development Commission	48.46	10.00	58.46	0.10
National Environment Commission	29.24	31.73	60.97	0.10
National Technical Training Authority	335.93	500.00	835.93	1.20
Office of the Legal Affairs	17.71	17.60	35.30	0.10
Planning Commission Secretariat	63.96	45.00	108.96	0.20
Police, Jail & Fire Service	2,064.35	355.01	2,419.36	3.50
Royal Institute of Management	156.35	149.00	305.35	0.40
Special Commission for Cultural Affairs	193.97	215.83	409.81	0.60
Ministry of Agriculture	2,548.36	2,000.00	4,548.36	6.50
Secretariat	435.06	..	4,113.30	0.60
Renewal Natural Resources	2,113.30	2,000.00	4,113.30	5.90
Ministry of Communication	1,710.62	8,672.52	10,383.13	14.80
Secretariat	111.27	38.11	149.38	0.20
Department of Urban Development	187.38	2,400.00	2,587.38	3.70
Department of Roads	1,136.17	5,524.09	6,660.26	9.50
Department of Civil Aviation	127.21	403.92	531.13	0.80
Standard Quality & Control Division	21.49	45.10	66.59	0.10
Road Safety & Transport Authority	89.67	162.11	251.78	0.40
Bhutan Telecom Authority	17.65	21.05	38.70	0.10
Division of Information Technology	19.80	60.00	79.80	0.10
Construction Development Board	..	18.13	18.13	..

Contd...

TABLE 13.3(contd)
FINANCIAL OUTLAYS DURING NINTH PLAN BY SECTOR, 2002 TO 2007
(Nu. in Million)

Organization	Recurrent	Capital	Total	Percent
Ministry of Finance	1,257.25	354.87	1,612.12	2.30
Secretariat	675.89	27.50	703.39	1.00
Department of Budget and Accounts	44.26	17.80	62.06	0.10
Department of National Properties	150.99	25.33	176.32	0.30
Department of revenue and customs	357.35	257.54	614.88	0.90
Department of Aid and Debt management	28.76	26.70	55.46	0.10
Ministry of Foreign Affairs	1,278.69	176.21	1,454.90	2.10
Ministry of Health & Education	4,581.09	2,893.41	7,474.50	10.70
Secretariat	129.08	0.00	129.08	0.20
Department of Health	2,802.43	1,703.41	4,505.84	6.40
Department of Education	1,598.49	998.48	2,596.96	3.70
Department of Employment and Labour	51.11	191.52	242.63	0.30
Ministry of Home affairs	486.38	130.57	616.95	0.90
Secretariat	230.47	30.66	261.13	0.40
Department of Survey and Land records	183.65	22.85	206.94	0.30
Department of Registration	72.27	77.06	149.33	0.20
Ministry of Trade & Industry	2,210.43	6,351.08	8,561.52	12.20
Secretariat	112.07	371.32	483.39	0.70
Department of Trade	73.13	384.25	457.38	0.70
Department of Industry	110.28	900.00	1,010.28	1.40
Department of Power	1,717.95	4,500.00	6,217.95	8.90
Department of Geology and Mines	138.85	70.00	208.85	0.30
Department of Tourism	58.16	125.51	183.67	0.30
Others	5,156.92	3,449.05	8,605.97	12.30
Debt Servicing	393.24	3,449.05	3,842.29	5.50
Common Public Expenditure	2,009.80	0.00	2,009.80	2.90
Contingency for Renumeration	2,753.88	0.00	2,753.88	3.90
Total (Central, Autonomous and Others)	23,879.00	29,000.21	52,879.22	75.50
Dzongkhags	7,655.28	7,224.73	14,880.02	21.30
Gewogs	147.18	2,093.59	2,240.77	3.20
Total (Dzongkhags and Gewogs)	7,802.46	9,318.32	17,120.79	24.50
Total Plan Outlay	31,681.47	38,318.53	70,000.00	100.00

Source: "Ninth Plan Main Document 2002-2007", Planning Commission, Thimphu.

TABLE 13.4

DZONGKHAG WISE EIGHTH FIVE YEAR PLAN OUTLAY, 1997 TO 2002
(Nu.in Million)

Dzongkhags	Current	Capital	Total
Bumthang	251.1	495.2	746.3
Chhukha	391.3	2,148.7	2,540.0
Dagana	115.9	200.6	316.5
Gasa	57.0	169.3	226.3
Haa	99.3	157.1	256.4
Lhuentse	167.0	399.0	566.0
Mongar	369.3	884.1	1,253.4
Paro	306.8	336.5	643.3
Pemagatshel	154.5	275.8	430.3
Punakha	219.7	225.7	445.4
Samdrup Jongkhar	428.8	616.3	1,045.1
Samtse	293.6	274.8	568.4
Sarpang	278.2	381.2	659.4
Thimphu	995.5	1,787.8	2,783.3
Trashi Yangtse	161.6	234.9	396.5
Trashigang	579.6	759.5	1,339.1
Trongsa	141.1	387.2	528.3
Tsirang	130.4	338.5	468.9
Wangdue Phodrang	283.4	529.2	812.6
Zhemgang	232.4	538.0	770.3
Total	5,656.5	11,139.4	16,795.8

Note:

Budget allocation for central programmes have been included under current expenditure in case of Agriculture and Livestock sector.

Source: "Ninth Plan Main Document 2002-2007", Planning Commission, Thimphu.

CHAPTER 14: GROSS DOMESTIC PRODUCT

Human activities can be classified broadly into economic activities and non-economic activities. Economic activities are those, which are devoted to making use of the scarce resources (including time and labor) in the production and distribution of economic goods i.e. goods and services (needed to satisfy human wants), which are scarce in relation to demand and are transferable. Economic goods command a price on the market for their being scarce and transferable.

The end result of all the economic activities that has taken place in an economy during an accounting period is reflected in gross domestic product (GDP). GDP represents the money value of all the goods and services that have been produced within the territorial limits of the country and are available for final uses like consumption, gross capital formation and net exports.

GDP can be measured both at current and constant prices. When expressed at current prices it reflects the money value of the goods and services produced in an accounting year measured in the prices of that year. On the other hand GDP expressed at constant prices reflects the money value of such goods and services for all the years measured in one year's (base year) prices. In this case the base year prices are kept constant for evaluation purposes for all the year under review, for measuring the performance of the economy with regard to the production of the goods and services in real terms over a period constant price estimates of GDP have to be taken into account. Current price estimate of GDP give a view of the levels of production performances of the economy for all the years under review at changing current prices.

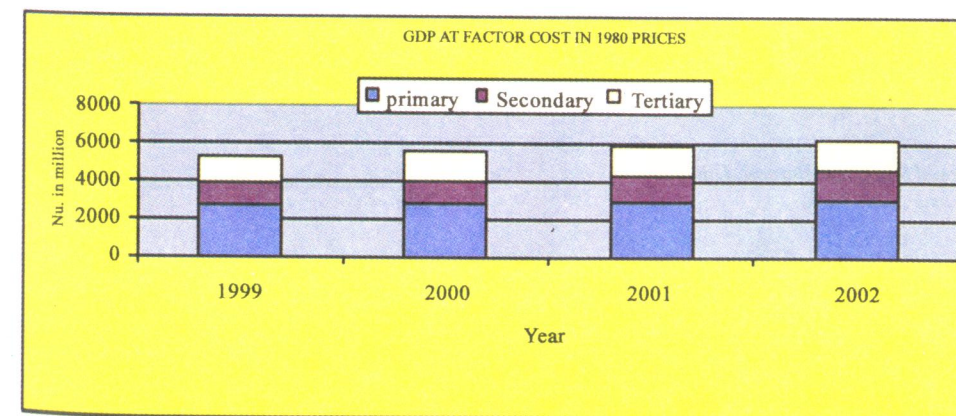


TABLE 14.1
GROSS DOMESTIC PRODUCT AT FACTOR COST IN CURRENT PRICES BY KIND OF ACTIVITY
1999 TO 2003

Activity	(Nu. in Million)				
	1999	2000	2001	2002	2003*
Agriculture, livestock, forestry and fishery	6,630.00	7,772.50	8,470.80	9,370.80	10,594.90
Agriculture proper	3,175	3,878	4,214	4,611	5,211
Livestock production	1,487	1,637	1,770	1,788	2,002
Forestry & logging	1,968	2,255	2,487	2,972	3,382
Fishing	..	..	..	..	..
Mining & quarrying	326	341	401	501	612
Manufacturing	1,762	1,735	1,936	2,038	2,445
Electricity, water & gas	2,318	2,520	2,601	3,039	3,097
Construction	2,113	2,717	3,720	5,360	6,431
Wholesale, retail trade, hotels and restaurants	1,282	1,465	1,662	1,579	1,768
Transport, storage & communications	1,637	1,863	2,142	2,329	2,772
Finance, insurance & real estate, business services	1,042	1,324	1,601	1,801	2,089
Community, social & personal services	1,836	1,920	2,137	2,241	2,554
Less: Imputed bank service charges	-441.6	-528.00	-736.00	-478.00	-479.00
Gross Domestic product	18,514	21,127	23,933	27,779	31,884
Growth rate of GDP in (%)	14.9	15.0	14.0	14.2	14.8

Note:

*Estimate

Source: National Statistical Bureau, Thimphu.

TABLE 14.2
GROSS DOMESTIC PRODUCT AT FACTOR COST IN 1980 PRICES BY KIND OF ACTIVITY,
1999 TO 2003

Activity	(Nu. in Million)				
	1999	2000	2001	2002	2003*
Agriculture, livestock, forestry and fishery	1,335.2	1,395.2	1,439.4	1,477.5	1,537.0
Agriculture proper	679	712	742	761	793
Livestock production	280	290	294	299	309
Forestry & logging	377	394	404	417	434
Fishing	..	..	..	..	..
Mining & quarrying	56	48	57	65	72
Manufacturing	309	290	317	318	350
Electricity, water & gas	401	398	447	545	556
Construction	399	475	556	695	763
Wholesale, retail trade, hotels & restaurants	232	237	254	240	248
Transport, storage & communications	382	405	440	442	491
Finance, insurance & real estate, business services	339	421	458	426	462
Community, social & personal services	410	418	441	449	477
Less: Imputed bank service charges	-88	-104.1	-143.1	-105.0	-105.0
Gross Domestic product	3,775	3,982	4,228	4,551	4,849
Growth rate of GDP in (%)	7.7	5.5	7.1	6.7	6.5

Note:

*Estimate

Source: National Statistical Bureau, Thimphu.

TABLE 14.3
COMPOUND GROWTH RATE OF GROSS DOMESTIC PRODUCT DURING SIXTH TO EIGHT PLAN
BY KIND OF ACTIVITY, TILL 2002

Activity	(Percent)					
	Growth rate in current prices			Growth rate in 1980 prices		
	VI th Plan (1987-91)	VII th Plan (1992-97)	VIII th Plan (1997-02)	VI th Plan (1987-91)	VII th Plan (1992-97)	VIII th Plan (1997-02)
Agriculture, livestock, forestry and fishery	9.2	16.5	9.3	2.6	4.5	2.3
Agriculture	13.4	13.4	10.8	4.4	1.9	2.2
Livestock	9.2	16.9	10.3	5.6	6.2	2.0
Forestry & logging	2.7	22.5	5.9	-0.3	8.4	2.6
Fishing						
Mining and quarrying	24.9	28.5	23.6	6.1	18.4	4.3
Manufacturing	25.0	21.1	17.7	15.5	10.7	7.1
Electricity and gas	0.5	25.4	9.4	-3.3	13.0	13.2
Construction	0.7	15.0	10.2	-6.5	9.6	11.8
Wholesale, retail trade, hotels & restaurants	11.4	17.1	9.6	0.5	6.0	2.2
Transport, storage & and communications	33.4	16.1	15.0	18.8	9.3	8.3
Finance, insurance & real estate, business services	18.4	0.2	15.5	11.4	4.4	5.6
Community, social & personal service	7.9	13.6	6.1	3.9	7.4	5.3
Gross Domestic Product	10.9	16.4	11.8	3.9	6.5	6.0

Source: National Statistical Bureau, Thimphu.

TABLE 14.4
PERCENTAGE COMPOSITION OF GROSS DOMESTIC PRODUCT BY VARIOUS ACTIVITY,
1998 TO 2003

Activity	1998	1999	2000	2001	2002	2003
Agriculture sector	36.6	34.9	35.6	33.8	33.2	32.7
Agriculture proper	17.5	16.7	17.7	16.8	16.3	16.1
Livestock production	8.3	7.8	7.4	7.1	6.3	6.2
Forestry & logging	10.8	10.4	10.4	9.9	10.5	10.5
Fishing	..	..	..	..	..	..
Mining & quarrying	1.6	1.7	1.6	1.6	1.8	1.9
Manufacturing	9.8	9.3	7.9	7.9	7.2	7.6
Electricity & gas	11.7	12.2	11.3	10.6	10.8	9.6
Construction	10.2	11.1	13.3	15.7	19.0	19.9
Wholesale, retail trade, hotels & restaurants	7.0	6.8	6.7	6.5	5.6	5.5
Transport, storage & communications	8.3	8.6	8.6	8.9	8.2	8.6
Finance, insurance & real estate	6.1	5.5	6.2	6.4	6.4	6.5
Community, social & personal services	8.7	9.9	9.0	8.5	7.9	7.9
Gross Domestic Product	100.0	100.0	100.0	100.0	100.0	100.0

Note:

*Estimate

Source: National Statistical Bureau, Thimphu.

TABLE 14.5
GROSS DOMESTIC CAPITAL FORMATION BY MAJOR COMPONENTS, 1998 TO 2002

Component	1998	1999	2000	2001	2002
In current prices					
Constructions	3,584.7	5,073.6	6,568.5	8,214.4	10,339.3
Machinery and equipment	2,614.8	3,053.4	3,328.1	3,976.8	4,188.8
Gross fixed capital formation	6,199.5	8,127.0	9,896.6	12,191.2	14,528.1
Increase in stock	45.3	108.4	81.8	120.1	-58.5
Gross domestic capital formation	6,244.8	8,235.4	9,978.4	12,311.3	14,469.6
In 1980 prices					
Constructions	742.2	927.5	1,051.0	1,187.1	1,494.1
Machinery and equipment	421.9	467.7	456.6	520.1	530.7
Gross fixed capital formation	1,164.1	1,395.2	1,507.6	1,707.2	2,024.8
Increase in stock	18.7	22.1	15.4	21.2	-9.6
Gross domestic capital formation	1,182.8	1,417.3	1,523.0	1,728.4	2,015.2

Source: National Statistical Bureau, Thimphu.

TABLE 14.6
SHARE OF GROSS DOMESTIC CAPITAL FORMATION IN GDP AT MARKET PRICES,
1998 TO 2002

Component	1998	1999	2000	2001	2002
Gross domestic product at market prices	16,623.0	19,161.0	21,911.0	25,278.0	29,086.0
Gross domestic fixed capital formation	6,200.0	8,127.0	9,897.0	12,191.0	14,528.0
Gross domestic capital formation	6,244.8	8,235.4	9,978.0	12,311.0	14,470.0
Share in Gross Domestic product (percent)	n.a	n.a	n.a	n.a	n.a
Gross domestic fixed capital formation	37.3	42.4	45.2	48.2	49.9
Gross domestic capital formation	37.6	43.0	45.5	48.7	49.7

Source: National Statistical Bureau, Thimphu.

TABLE 14.7
GROSS AND NET CAPITAL FORMATION, 1997 TO 2002

Component	1998	1999	2000	2001	2002
In current prices					
Gross domestic capital formation	6,244.8	8,235.4	9,978.4	12,311.3	14,469.6
Consumption of fixed capital (depreciation)	1,324.0	1,567.0	1,768.0	2,045.0	2,263.0
Net domestic capital formation	4,920.8	6,669.4	6,669.4	..	..
In 1980 prices					
Gross domestic capital formation	1,182.8	1,417.3	1,523.0	1,728.4	2,015.2
Consumption of fixed capital (depreciation)	300.0	321.0	337.0	368.0	385.0
Net domestic capital formation	882.8	1,096.3	1,153.8	..	..

Source: National Statistical Bureau, Thimphu.

TABLE 14.8
GROSS AND NET DOMESTIC PRODUCT AND RELATED AGGREGATES, 1998 TO 2002

(Nu. in Million)					
Aggregate	1998	1999	2000	2001	2002
In current prices					
Net domestic product at factor cost	14,754.0	16,973.0	19,560.0	22,272.0	25,517.0
Add: Consumption of fixed capital	1,324.0	1,567.0	1,768.0	2,045.0	2,263.0
Gross domestic product at factor cost	16,078.0	18,514.0	21,328.0	24,317.0	27,779.0
Add: Indirect taxes, less of subsidies(a)	546.0	621.0	583.0	962.0	1,307.0
Gross domestic product at market prices	16,623.0	19,161.0	21,911.0	25,278.0	29,086.0
Add: Net factor income from abroad	-2323	-3083	-1980	-2697	-3328
Gross national product at market prices	14,300.0	16,078.0	19,931.0	22,581.0	25,758.0
Net national product at market prices	12,976.0	14,511.0	18,163.0	20,536.0	23,495.0
In 1980 prices					
Net domestic product at factor cost	3,214.0	3,482.0	3,645.0	3,898.0	4,166.0
Add: Consumption of fixed capital	300.0	321.0	337.0	368.0	385.0
Gross domestic product at factor cost	3,514.0	3,802.0	3,982.0	4,266.0	4,551.0

Note:

(a) Excludes excise refunds from Government of India.

Source: National Statistical Bureau, Thimphu.

TABLE 14.9
ESTIMATES OF FINAL CONSUMPTION EXPENDITURE, GROSS DOMESTIC AND SAVIN
IN CURRENT PRICES, 1998 TO 2002

(Nu. in Million)					
Detail	1998	1999	2000	2001	2002
Revenue receipts	3,547.5	4,381.0	4,672.0	5,080.5	5,214.8
Consumption expenditure					
Government	12,630.1	14,338.3	15,802.3	16,135.8	18,069.7
Private	3,308.2	4,271.0	4,421.5	5,110.3	5,357.8
Savings					
Government	9,321.9	10,067.3	11,380.8	11,025.5	12,711.9
Private	2,075.2	2,572.4	5,283.5	7,514.3	8,289.7
Gross domestic savings	239.3	110.0	250.5	-29.8	-143.043
Gross domestic capital formation	1,835.9	2,462.4	5,033.0	7,544.1	8,432.7
Net capital inflow	2,075.2	2,572.4	5,283.5	7,514.3	8,289.7
	6,244.8	8,235.4	10,599.2	13,136.0	15,497.0
	4,169.6	5,663.0	5,315.7	5,621.7	7,207.3

Source: National Statistical Bureau, Thimphu.

CHAPTER 15: PRICES

The only price statistics currently compiled in Bhutan relate to Consumer Price Indexes, often referred to as the CPI. The CPI has been produced by the NSB twice a year since December 1979. In addition, a food price index for Thimphu has been produced each quarter since September 1987.

The purpose of the CPI is to provide a general indicator of the rate of price change for consumer goods and services. The CPI is important monitoring overall price development and assessing changes in the living standard of the population.

The CPI is formed by measuring the change in the cost of purchasing a basket of consumer goods and services where items in the basket are weighted according to their relative importance in the total spending of consumers. The baskets include food items (i.e. rice, other cereals, vegetables, oils and fats, and spices) together with non-food items such as clothing, fuel, furniture and other personal items. Items such as cereals are weighted more heavily than say furniture, because they represent a larger proportion of consumer expenditure. A price change in cereals will therefore have greater effect on the CPI than a price change for furniture.

The CPI is presented as Index Numbers, where the indexes are measured in relative to the base of December 1979 = 100.00, price change is estimated by measuring change in the Index numbers.

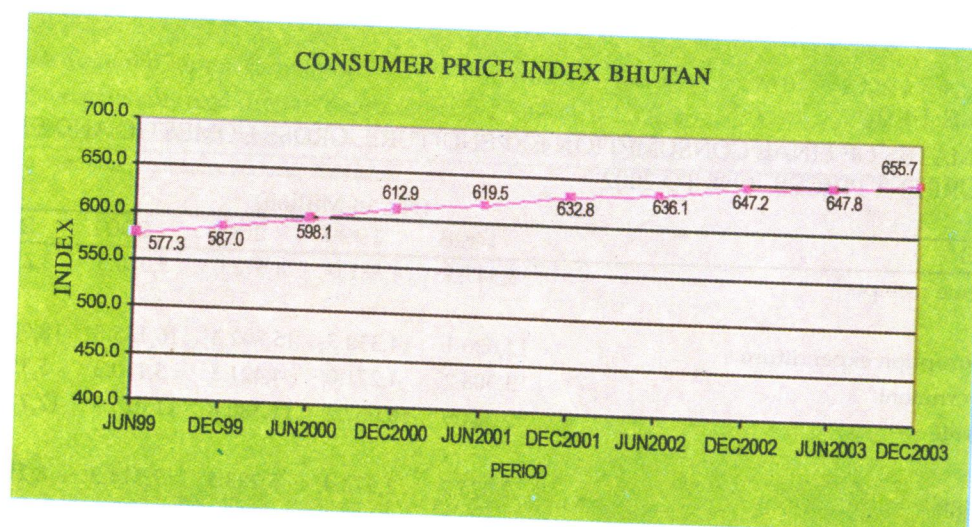


TABLE 15.1

CONSUMER PRICE INDEXES FOR FOOD AND NON-FOOD COMPONENTS, BHUTAN
JUNE 2001 TO JUNE 2003

Item	Weight (%)	2001		2002		2003	Average growth %	
		Jun	Dec	Jun	Dec	Jun		
Index								
Food	72.31	515.5	525.2	525.9	535.6	535.0		
Non-food	27.69	891.0	913.6	924.0	938.7	942.4		
Total	100.00	619.5	632.8	636.1	647.2	647.8		
(Percentage change on the Previous Period)							Jun 80-03	Dec 79-02
Food	72.31	0.8	2.2	2.0	2.0	1.7	7.5	7.2
Non-food	27.69	8.0	4.9	3.7	2.7	2.0	9.8	9.8
Total	100.00	3.6	3.2	2.7	2.3	1.8	8.3	8.1
(Percentage change on the Previous Period)							79-03	
Food	72.31	0.3	1.9	0.1	1.8	-0.1	7.6	
Non-food	27.69	2.3	2.5	1.1	1.6	0.4	10.2	
Total	100.00	1.1	2.1	0.5	1.7	0.1	8.5	
Purchasing power of Ngultrum (PPN)								
	1.00	0.16	0.16	0.16	0.15	0.15		

Source: National Statistical Bureau, Thimphu

TABLE 15.2
CONSUMER PRICE INDEXES FOR MAJOR COMPONENTS, BHUTAN JUNE 2001 TO JUNE 2003

Item	Weight (%)	2001		2002		2003
		Jun	Dec	Jun	Dec	Jun
Cereals	37.8	428.7	433.3	430.1	439.0	439.6
Pulses	0.7	680.7	694.6	696.2	698.8	702.3
Vegetables	2.4	591.7	668.9	679.5	759.8	744.3
Fruits	0.0	1,065.0	867.2	1,213.7	1,027.3	982.8
Edible oil & fats	2.9	336.1	340.7	345.6	350.2	358.8
Spices	5.1	894.8	928.9	926.3	926.3	932.4
Milk & its products	7.1	525.9	522.5	523.6	523.6	523.6
Other food & intoxicants	16.4	605.6	616.2	623.8	633.7	628.2
Fuel & lighting	3.7	424.7	430.3	439.8	467.7	475.5
Clothing & footwear	21.2	988.8	1,012.8	1,025.1	1,037.6	1,040.7
Stationery goods & personal effects	0.6	540.4	556.3	551.2	553.4	560.4
Misc. goods & services	1.6	742.7	771.0	773.8	773.7	772.4
Furniture & utensils	0.7	1,003.1	1,071.8	1,054.0	1,118.6	1,126.7
Total	100.0	619.5	632.8	636.1	647.2	647.8

Source: National Statistical Bureau, Thimphu

TABLE 15.3
CONSUMER PRICE INDEXES - MAJOR COMPONENTS, BHUTAN JUNE 2001 TO JUNE 2003
(Percentage change on the Previous Period)

Item	Weight (%)	2001		2002		2003		Dec	Jun
		Jun	Dec	Jun	Dec	Jun	80-03	79-02	
Cereals	37.77	-1.0	0.8	0.3	1.3	2.2	6.8	6.4	
Pulses	0.67	2.9	2.6	2.3	0.6	0.9	8.3	8.4	
Vegetables	2.43	0.1	8.0	14.8	13.6	9.5	9.5	8.8	
Fruits	0.04	-0.9	-6.7	14.0	18.5	-19.0	10.5	10.2	
Edible oil & fats	2.87	-1.0	0.9	2.8	2.8	3.8	5.4	5.4	
Spices	5.10	6.0	5.3	3.5	-0.3	0.7	9.9	9.7	
Milk & its products	7.07	0.2	-0.8	-0.4	0.2	0.0	7.4	7.1	
Other food & intoxicants	16.36	2.1	3.5	3.0	2.8	0.7	8.0	8.0	
Fuel & lighting	3.65	15.1	2.0	3.5	8.7	8.1	7.9	6.6	
Clothing & footwear	21.20	8.5	5.1	3.7	2.4	1.5	10.0	10.2	
Stationery goods & personal effects	0.62	1.3	2.7	2.0	-0.5	1.7	7.4	7.4	
Misc. goods & services	1.57	-4.0	3.6	4.2	0.4	-0.2	9.6	8.9	
Furniture & utensils	0.65	2.6	6.9	5.1	4.4	6.9	11.0	10.6	
Total	100.00	3.6	3.2	2.7	2.3	1.8	8.3	8.1	

Source: National Statistical Bureau, Thimphu

TABLE 15.4

CONSUMER PRICE INDEXES - MAJOR COMPONENTS, BHUTAN, JUNE 2001 TO JUNE 2003
(Percentage change on the Previous Period)

Item	Weight (%)	2001		2002		2003	Growth Rate(%) 79-03
		Jun	Dec	Jun	Dec	Jun	
Cereals	37.77	-0.3	1.1	-0.7	2.1	0.2	6.6
Pulses	0.67	0.6	2.0	0.2	0.4	0.5	8.8
Vegetables	2.43	-4.5	13.0	1.6	11.8	-2.0	9.1
Fruits	0.04	14.6	-18.6	40.0	-15.4	-4.3	10.4
Edible oil & fats	2.87	-0.4	1.4	1.4	1.4	2.4	5.7
Spices	5.10	1.4	3.8	-0.3	0.0	0.7	10.2
Milk & its products	7.07	-0.2	-0.6	0.2	0.0	0.0	7.5
Other food & intoxicants	16.36	1.7	1.8	1.2	1.6	-0.9	8.3
Fuel & lighting	3.65	0.6	1.3	2.2	6.3	1.7	7.0
Clothing & footwear	21.20	2.6	2.4	1.2	1.2	0.3	10.7
Stationery goods & personal effects	0.62	-0.2	2.9	-0.9	0.4	1.3	7.8
Misc. goods & services	1.57	-0.2	3.8	0.4	0.0	-0.2	9.3
Furniture & utensils	0.65	0.0	6.9	-1.7	6.1	0.7	11.1
Total	100.00	1.1	2.1	0.5	1.7	0.1	8.5

Source: National Statistical Bureau, Thimphu

TABLE 15.5

CONSUMER PRICE INDEXES FOR FOOD ITEMS, BHUTAN JUNE 2001 TO JUNE 2003

Item	Weight (%)	2001		2002		2003
		Jun	Dec	Jun	Dec	Jun
Cereals	37.77	428.7	433.3	430.1	439.0	439.6
Pulses	0.67	680.7	694.6	696.2	698.8	702.3
Vegetables	2.43	591.7	668.9	679.5	759.8	744.3
Fruits	0.04	1065.0	867.2	1213.7	1027.3	982.8
Edible oil & fats	2.87	336.1	340.7	345.6	350.2	358.8
Spices	5.10	894.8	928.9	926.3	926.3	932.4
Milk & its products	7.07	525.9	522.5	523.6	523.6	523.6
Sugar	1.03	464.1	460.5	460.0	479.5	466.7
Beverages	1.34	824.0	831.5	838.1	837.8	842.6
Meat, fish	9.10	643.6	652.5	669.9	681.7	689.5
Eggs	0.19	417.6	421.5	421.7	425.9	432.6
Intoxicants	3.38	335.6	346.0	338.0	342.8	342.8
Tobacco	1.32	947.1	985.7	973.9	988.3	869.8
Total	72.31	515.5	525.2	525.9	535.6	535.0

Source: National Statistical Bureau, Thimphu

TABLE 15.6
CONSUMER PRICE INDEXES FOR FOOD ITEMS, BHUTAN JUNE 2001 TO JUNE 2003
(Percentage change on the Previous Period)

Item	Weight (%)	2001		2002		2003	Average growth(%)	
		Jun	Dec	Jun	Dec	Jun	Jun	Dec
							80-03	79-02
Cereals	37.77	-1.0	0.8	0.3	1.3	2.2	6.8	6.4
Pulses	0.67	2.9	2.6	2.3	0.6	0.9	8.3	8.4
Vegetables	2.43	0.1	8.0	14.8	13.6	9.5	9.5	8.8
Fruits	0.04	-0.9	-6.7	14.0	18.5	-19.0	10.5	10.2
Edible oil & fats	2.87	-1.0	0.9	2.8	2.8	3.8	5.4	5.4
Spices	5.10	6.0	5.3	3.5	-0.3	0.7	9.9	9.7
Milk & its products	7.07	0.2	-0.8	-0.4	0.2	0.0	7.4	7.1
Sugar	1.03	1.1	-1.7	-0.9	4.1	1.5	5.0	6.7
Beverages	1.34	4.2	5.0	1.7	0.8	0.5	9.4	9.3
Meat, fish	9.10	1.4	4.0	4.1	4.5	2.9	8.7	8.3
Eggs	0.19	0.0	1.8	1.0	1.0	2.6	5.9	6.2
Intoxicants	3.38	2.1	3.5	0.7	-0.9	1.4	4.7	5.3
Tobacco	1.32	3.7	1.9	2.8	0.3	-10.7	11.0	10.0
Total	72.31	0.8	2.2	2.0	2.0	1.7	7.5	7.2

Source: National Statistical Bureau, Thimphu

TABLE 15.7
CONSUMER PRICE INDEXES FOR FOOD ITEMS, BHUTAN, JUNE 2001 TO JUNE 2003
(Percentage change on the Previous Period)

Item	Weight (%)	2001		2002		2003	Average growth rate (%)79-03
		Jun	Dec	Jun	Dec	Jun	
Cereals	37.77	-0.3	1.1	-0.7	2.1	0.2	6.6
Pulses	0.67	0.6	2.0	0.2	0.4	0.5	8.8
Vegetables	2.43	-4.5	13.0	1.6	11.8	-2.0	9.1
Fruits	0.04	14.6	-18.6	40.0	-15.4	-4.3	10.4
Edible oil & fats	2.87	-0.4	1.4	1.4	1.4	2.4	5.7
Spices	5.10	1.4	3.8	-0.3	0.0	0.7	10.2
Milk & its products	7.07	-0.2	-0.6	0.2	0.0	0.0	7.5
Sugar	1.03	-1.0	-0.8	-0.1	4.2	-2.7	6.9
Beverages	1.34	4.1	0.9	0.8	0.0	0.6	9.7
Meat, fish	9.10	2.6	1.4	2.7	1.8	1.2	8.8
Eggs	0.19	0.9	0.9	0.0	1.0	1.6	6.6
Intoxicants	3.38	0.4	3.1	-2.3	1.4	0.0	5.5
Tobacco	1.32	-2.1	4.1	-1.2	1.5	-12.0	9.9
Total	72.31	0.3	1.9	0.1	1.8	-0.1	7.6

Source: National Statistical Bureau, Thimphu

TABLE 15.8
QUATERLY PRICE INDICES FOR FOOD ITEMS, THIMPHU TOWN, 1999 TO 2003

(Base : December 1979 = 100.0)

Period	Cereal & Pulses	Vegetables & Fruits	Other Food	Total Food
Quarter ending 1999				
March	650.5	3138.8	697.4	759.9
June	661.7	3407.5	700.9	777.5
September	667.3	3110.5	711.4	774
December	658.1	3117.2	696.5	763.1
2000				
March	642.8	3119.9	700.9	756.2
June	667.83	3611.65	721.02	796.38
September	674.5	3368	739.4	798.5
December	666.8	3544.4	716.7	791.7
2001				
March	662.6	3150.8	722	777
June	665.8	4438.7	727.2	827.9
September	665.9	4262.6	726.4	821.2
December	669.4	4029	736.1	818.5
2002				
March	679.98	3717.57	721.43	807.32
June	665.63	4734.66	723.21	837.02
September	674.89	4093.75	779.68	841.17
December	676.81	4121.51	775.8	841.75
2003				
March	673.12	4034.96	776.26	836.67
June	673.32	4069.76	776.43	838.12
September	675.24	4019.28	783.18	840.03
December	677.35	3992	785.41	841.12

Source: National Statistical Bureau, Thimphu.

TABLE 15.9
QUATERLY PRICE INDICES FOR FOOD ITEMS, THIMPHU TOWN AND PURCASHING POWER OF NGULTRUM, 1999 TO 2003

Period	Cereals & pluses (%)	Vegetables & fruits(%)	Other food (p%)	Total food (%)	Purchasing Power of Nu.
1999					
March	3.2	-17.1	0.1	-1.6	0.13
June	1.7	8.6	0.5	2.4	0.13
September	0.8	-8.7	1.5	-0.5	0.13
December	-1.4	0.2	-2.1	-1.4	0.13
2000					
March	-2.3	0.1	0.6	-0.9	0.13
June	3.9	15.8	2.9	5.3	0.13
September	1.0	-6.7	2.5	0.3	0.13
December	-1.1	5.2	-3.1	-0.9	0.13
2001					
March	-0.6	-11.1	0.7	-1.9	0.12
June	0.5	40.9	0.7	6.6	0.12
September	0.0	-4.0	-0.1	-0.8	0.12
December	0.5	-5.5	1.3	-0.3	0.12
2002					
March	1.6	-7.7	-2.0	-1.4	0.12
June	-2.1	27.4	0.2	3.7	0.12
September	1.4	-13.5	7.8	0.5	0.12
December	0.3	0.7	-0.5	0.1	0.12
2003					
March	-0.5	-2.1	0.1	-0.6	0.12
June	0.0	0.9	0.0	0.2	0.12
September	0.3	-1.2	0.9	0.2	0.12
December	0.3	-0.7	0.3	0.1	0.12

Source: National Statistical Bureau, Thimphu.

CHAPTER 16: CRIME

This Chapter presents statistics on cases known to police and those cases registered with the Royal Bhutan Police. The statistics presented here are those compiled by the Police Headquarters.

This chapter presents the details of crime statistics by nature of crime categorized by the Police, namely the crime against human body, sexual offences, crime against property, motor vehicle, antiques, forest offences and fire incidents, motor vehicle accidents etc. The nature and type of crime reported here reflects on peace and security of the community. The content and coverage of this chapter should improve in our subsequent issues.

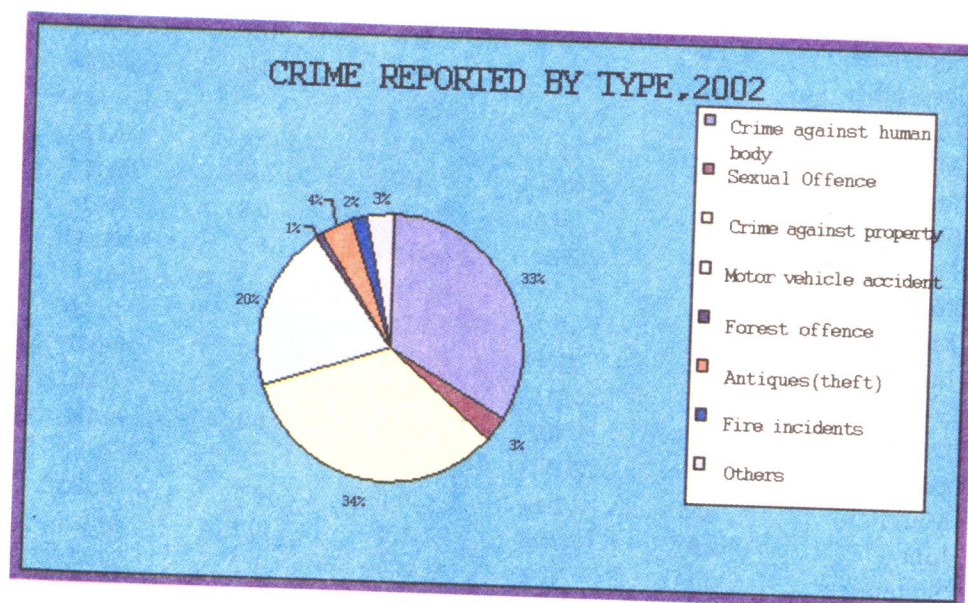


TABLE 16.1

CRIME REPORTS BY NATURE OF CRIME, BHUTAN, 1997 TO 2002

Nature of crime	(Incident)					
	1997	1998	1999	2000	2001	2002
Crime against human body	498	406	452	607	677	570
Sexual offence	42	45	48	71	84	52
Crime against property	675	613	635	727	623	574
Motor vehicle accident	319	235	240	266	298	344
Forest offence	7	3	8	4	10	12
Antiques	176	144	125	98	104	68
Fire incidents	47	29	33	30	36	34
Others	127	59	52	62	36	55
All crimes	1891	1534	1593	1865	1868	1709

Source: Crime & Operations, Royal Bhutan Police (HQ), Thimphu.

TABLE 16.2
DETAILS OF CRIME AGAINST HUMAN BODY, BHUTAN, 1997 TO 2002
(Incident)

Details	1997	1998	1999	2000	2001	2002
Murder	7	11	14	18	19	19
Attempted murder	6	5	3	2	5	5
Dacoity with murder	..	..	..	..	1	..
Rape cum murder	..	..	1	..	..	..
Robbery with murder	..	..	2	1	..	..
Infanticide	..	..	..	..	..	..
Unnatural death	22	20	18	30	24	24
Accidental death	41	30	38	43	45	49
Drowning	31	22	18	27	20	15
Suicide	34	27	31	41	58	49
Attempted suicide	3	11	6	14	8	13
Assault	319	241	285	367	418	369
Abduction	..	1	..	1	..	1
Kidnapping	..	1	1	1	..	..
Poisoning	3	..	2	1	1	2
Drugs(Nurcotics)	11	9	20	25	23	18
Obstruction of lawful authority	5	3	3	3	2	1
Wrongful confinement	..	1	..	..	..	..
Affray	4	1	1	..	4	..
Accidental injury	2	1	2	6	9	3
Black magic	1	2	..	1	..	..
Defamation	2	2	4	5	6	2
Grevious hurt	2	3	3	3	3	..
Missing of Person	..	..	..	18	31	..
Total	493	406	452	607	677	570

Source: Crime & Operations, Royal Bhutan Police (HQ), Thimphu.

TABLE 16.3
DETAILS OF SEXUAL OFFENCES, BHUTAN, 1995 TO 2002
(Incident)

Details	1995	1997	1998	1999	2000	2001	2002
Adultry	8	4	7	9	14	19	10
Rape	10	4	15	10	16	16	13
Attempted rape	9	10	3	7	15	8	12
Dacoity cum rape	..	..	1	..	1	2	..
Robbery cum rape	..	..	1	..	..	1	..
Beastility	..	1	..	..	..	..	..
Elopment	15	19	12	16	23	23	14
Eve teasing	2	..	1	..	..	..	..
Incest	..	1	2	..	2	5	..
Molestation	2	3	1	3	..	5	1
Prostitution	6	1	2	3	..	2	2
Un-natural offence	..	..	..	..	..	3	..
Total	52	42	45	48	71	84	52

Source: Crime & Operations, Royal Bhutan Police (HQ), Thimphu.

TABLE 16.4
DETAILS OF CRIME AGAINST PROPERTY, BHUTAN, 1997 TO 2002
(Incident)

Details	1997	1998	1999	2000	2001	2002
Attempted to robbery	5	1	1	..	..	..
Attempted to theft	..	..	..	..	8	7
Bike lifting	..	..	1	..	..	..
Bribery	..	..	2	1	..	..
Buglary	94	142	176	132	129	140
Cattle Lifting	25	23	21	22	20	19
Cheating	38	22	15	31	30	34
Conspiracy	1	1	..	..	..	..
Counterfeit of coin/ note	2	1	1	8	3	2
Criminal breach of trust	7	8	5	9	15	4
Criminal trespass	1	..	..	2	2	..
Dacoity	32	12	12	18	11	8
Embezzlement	2	2	..	6	5	8
Explosive	..	..	7	..	..	..
Extortion	4	1	1	1	2	2
Forgery	3	6	8	9	9	4
Hijacking	2	..	..	4	..	..
House Breaking	4	3	6	12	3	10
House trespass	..	2	..	4	1	..
Illegal collection of Donation	..	1	..	1	..	..
Illegal trespass	2	2	1	2	..	1
Impersonation	..	..	6	..	..	5
Loss of Property	38	22	12	14	13	4
Misappropriation	1	2	..	4	..	2
Mischief	44	33	33	39	39	36
Money laundering	..	..	2	1	..	..
Pick pocketing	12	9	6	1	5	6
Robbery	14	16	14	10	16	9
Sabotage	..	7	..	2	..	..
Scooter lifting	..	1	..	..	2	1
Smuggling	18	9	5	4	4	5
Snatching	..	1	..	..	..	..
Theft	325	285	300	390	306	267
Weight and Measurement	..	1	..	..	..	..
Total	674	613	635	727	623	574

Source: Crime & Operations, Royal Bhutan Police (HQ), Thimphu.

TABLE 16.5
DETAILS OF MOTOR VEHICLE, ANTIQUES, FOREST OFFENCES AND
FIRE INCIDENTS, BHUTAN, 1997 TO 2002
(Incident)

Details	1997	1998	1999	2000	2001	2002
Motor Vehicles Offence	319	235	240	266	298	344
Cycle accidents	2	2	1	1	..	1
Traffic violation	35	5	3	3	..	1
Hit and run	17	8	13	3	11	10
Motor vehicle accident	259	207	208	245	270	319
Motor vehicle accident (fatal)	6	13	15	14	17	13
Forest Offence	7	3	8	4	10	12
Illegal sale of musk	..	2	..	..	..	..
Poaching	5	1	5	2	3	5
Illegal fishing	1	..	2	2	7	3
Theft of forest product	1	..	1	..	..	4
Antiques	171	144	125	98	104	68
Theft of antique	10	16	7	5	12	6
Chhoten vandalism	151	116	110	77	78	59
Smuggling of antique	10	3	2	4	8	1
Theft from Lhakhang	..	9	1	..	6	2
Fire accident	47	29	33	29	36	34
Fire accident	40	25	29	24	27	31
Arson	7	4	4	5	9	3
Others	0	0	0	49	..	55
Missing of person	..	..	..	20	..	14
Natural calamities	..	..	..	10	..	4
Fire arms	..	..	..	3	..	10
Miscellaneous	..	..	..	9	..	14
Public Nuisance	..	..	..	2	..	2
Sabotage	..	..	..	4	..	9
Threat intimidation	..	..	..	1	..	..
Jail break	..	..	..	..	..	2

Source: Crime & Operations, Royal Bhutan Police (HQ), Thimphu.

TABLE 16.6

MONTHLY MOTOR VEHICLE ACCIDENTS BY TRAFFIC DIVISION, BHUTAN, 2002
(Incident)

Traffic Division	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Thimphu	9	19	5	6	3	9	9	4	4	4	2	8	82
Punakha	3	3	2	2	4	1	1	2	1	2	2	2	25
Paro	..	..	..	2	2	2	1	4	1	1	1	3	17
Phuentsholing	9	5	25	11	9	17	7	9	13	9	10	7	131
Samtse	..	..	1	1	1	..	..	..	..	2	..	..	5
Gelephu	..	2	3	..	1	..	1	..	1	..	..	2	10
Tsirang	1	1	..	1	1	..	1	1	..	..	1	2	9
Trongsa	5	2	4	2	3	3	..	..	2	3	..	1	25
Samdrup Jongkhar	..	..	2	1	..	1	2	1	1	1	1	..	10
Trashigang	3	..	1	..	..	2	..	3	1	2	1	..	13
Mongar	..	3	1	1	2	2	1	..	..	2	1	4	17
Total	30	35	44	27	26	37	23	24	24	26	19	29	344

Source: Crime & Operations, Royal Bhutan Police (HQ), Thimphu.

TABLE 16.7

CAUSES OF MOTOR VEHICLE ACCIDENTS BY TRAFFIC DIVISION, BHUTAN, 2002
(Incident)

Traffic division/ Type of Vehicle	Mechanical fault	Drunk driving	Bad weather	Without licence	Unknown causes	Other causes	All causes
Thimphu	1	13	8	17	..	43	82
Trucks	..	3	2	3	..	9	17
Buses	..	2	2	..	..	4	8
Light Vehicle	1	8	4	8	..	24	45
Two Wheeler	..	..	..	6	..	6	12
paro	7	..	..	..	..	10	17
Trucks	2	..	..	..	..	2	4
Buses	..	..	..	..	..	..	0
Light Vehicle	4	..	..	..	..	7	11
Two Wheeler	1	..	..	..	..	1	2
Punakha	9	..	..	..	..	16	25
Trucks	2	..	..	..	..	6	8
Buses	..	..	..	..	..	..	0
Light Vehicle	7	..	..	..	..	9	16
Two Wheeler	..	..	..	..	..	1	1
Phuntsholing	55	4	13	3	..	50	131
Trucks	29	3	7	2	..	31	72
Buses	1	..	..	..	..	4	5
Light Vehicle	23	1	5	1	..	19	49
Two Wheeler	2	..	1	..	..	2	5
Samtse	4	..	..	..	..	1	5
Trucks	4	..	..	..	..	..	4
Buses	..	..	..	..	..	..	0
Light Vehicle	..	..	..	..	..	1	1
Two Wheeler	..	..	..	..	..	..	0
Gelephu	1	2	2	1	..	5	11
Trucks	1	2	..	..	..	..	3
Buses	..	..	..	..	..	..	0
Light Vehicle	..	..	..	..	..	5	5
Two Wheeler	..	..	2	1	..	..	3

contd.

TABLE 16.7(contd.)
CAUSES OF MOTOR VEHICLE ACCIDENTS BY TRAFFIC DIVISION, BHUTAN, 2002
(Incident)

Traffic division/ Type of Vehicle	Mechanical fault	Drunk driving	Bad weather	Without licence	Unknown causes	Other causes	All causes
Tsirang	3	..	3	..	..	2	8
Trucks	2	..	1	..	..	..	3
Buses	1	..	..	..	..	..	1
Light Vehicle	..	..	2	..	..	2	4
Two Wheeler	..	..	..	..	..	..	0
Trongsa	5	1	3	..	..	16	25
Trucks	2	1	2	..	..	7	12
Buses	..	..	..	..	..	..	0
Light Vehicle	3	..	1	..	..	6	10
Two Wheeler	..	..	..	..	..	3	3
Samdrup Jongkhar	8	..	..	1	..	1	10
Trucks	7	..	..	..	..	..	7
Buses	..	..	..	..	..	..	0
Light Vehicle	1	..	..	..	..	1	2
Two Wheeler	..	..	..	1	..	..	1
Trashigang	2	1	..	4	..	4	11
Trucks	..	..	..	..	..	..	0
Buses	..	..	..	..	..	..	0
Light Vehicle	2	1	..	3	..	1	7
Two Wheeler	..	..	..	1	..	3	4
Mongar	7	2	..	2	..	6	17
Trucks	5	1	..	..	..	3	9
Buses	..	..	..	..	..	1	1
Light Vehicle	2	1	..	2	..	2	7
Two Wheeler	..	..	..	..	..	..	0
Bhutan	103	23	29	28	0	161	344

Source: Crime & Operations, Royal Bhutan Police (HQ), Thimphu.

ANNEX I
ADMINISTRATIVE UNITS WITH THEIR STANDARD SPELLINGS

I. Thimphu Dzongkhag

Gewogs:

1. Barp
2. Chang
3. Dagala
4. Geney
5. Kawang
6. Mewang
7. Toep

(a) Lingshi Dungkhag

8. Lingzhi
9. Naro
10. Soe

II. Chhukha Dzongkhag

Gewogs:

1. Bongo
2. Chapcha
3. Dungna
4. Getana
5. Geling
6. Bjachho
7. Metakha

(a) Phuentsholing Dungkhag

8. Balujhora
9. Dala
10. Logchina
11. Phuntsholing

Ha Dzongkhag

Gewogs

1. Bjee
2. Eusu
3. Katsho
4. Samar
5. Sombaykha

IV. Paro Dzongkhag

Gewogs:

1. Dogar
2. Shari
3. Doteng
4. Hungrel
5. Lango
6. Lungney
7. Naja
8. Shaba
9. Tsento
10. Wangchang

V. Samtse Dzongkhag

Gewogs:

1. Pugli
2. Samtse
3. Tading

(a) Chengmari Dungkhag

4. Charghary
5. Chengmari
6. Ghumaunay
7. Nainital

(b) Dorokha Dungkhag

8. Denchukha
9. Dorokha
10. Dungtoe
11. Mayona

Sipsu Dungkhag

12. Bara
13. Biru
14. Lahereni
15. Sipsu
16. Tendu

VI. Sirang Dzongkhag**Gewogs:**

1. Tsirang toe
 2. Dunglagang
 3. Gosaling
 4. Kikhorthang
 5. Pataley
 6. Phuntenchu
 7. Semjong
 8. Tsholingkhar
- a) Lamidangra Dungkhag**
9. Beteni
 10. Rangthangling
 11. Barshong
 12. Mendrelgang

VII. Dagana Dzongkhag**Gewogs:**

1. Tsheza
2. Kana
3. Gozhi
4. Tsendagang
5. Tashiding
6. Gesarling
7. Dorona
8. Khibisa
9. Lajab
10. Tsangkha
11. Drujeygang

VIII. Punakha Dzongkhag**Gewogs:**

1. Geonshari
2. Kabji
3. Guma
4. Talo
5. Limbu
6. Zomi
7. Chuba
8. Tewang
9. Shenga Bjemi

IX. Gasa Dzongkhag**Gewogs:**

1. Khamey
2. Khatoe
3. Laya
4. Lunana

X. Wangduephodrang**Gewogs:**

1. Athang
2. Daga
3. Dangchu
4. Gangtey
5. Gasetsho Wom
6. Gasetsho Gom
7. Bjena
8. Kazhi
9. Nahi
10. Nysho
11. Phangyul
12. Phobji
13. Ruepaisa
14. Sephu
15. Thedtsho

XI. Bumthang Dzongkhag**Gewogs:**

1. Chhokhor
2. Chumey
3. Tang
4. Ura

XII. Sarpang Dzongkhag**Gewogs:**

1. Dovan
2. Hilley
3. Dekiling
4. Shompangkha
5. Singye
6. Nichula
7. Bhur
8. Gelephu
9. Jigmecholing
10. Chuzargang
11. Sershong
12. Sershong
13. Taklai
14. Lhamoy Zingka
15. Deorali
16. Umling

XIII. Zhemgang Dzongkhag**Gewogs:**

1. Bardo
 2. Nangkor
 3. Shingkhar
 4. Trong
- (a) Panbang Dungkhag**
5. Goshing
 6. Nganglha
 7. Phangkhar

XIV. Trongsa Dzongkhag**Gewogs:**

1. Drakteng
2. Korphu
3. Langthel
4. Nubi
5. Tangsibji

XV. Lhuntshi Dzongkhag**Gewogs:**

1. Gangzur
2. Jarey
3. Khoma
4. Kurtoe
5. Menbi
6. Menjey
7. Metsho
8. Tsengkhar

XVI. Monggar Dzongkhag**Gewogs:**

1. Balam
2. Chali
3. Chaskhar
4. Dramitse
5. Drepong
6. Gongdue
7. Jurmey
8. Khengkhar
9. Monggar
10. Ngatsang
11. Saling
12. Chermung
13. Salambi
14. Thanrong
15. Tsakaling
16. Tsamang

XVII. Pemagatsel Dzongkhag**Gewogs:**

1. Chongshing
2. Dungmin
3. Chimong
4. Khar
5. Shumar
6. Yurung
7. Zobel

XVIII. Samdrup Jongkhar**Dzongkhag****Gewogs:**

1. Orong
2. Gomdhar
- (a) **Dechhenling Dungkhag**
 3. Decheling
 4. Norbugang
- (b) **Samdrup Chhoeling Dungkhag**
 5. Phuentshogthang
 6. Dalim
 7. Matshala
 8. Samrang
- (c) **Jhomotsangkha Dungkhag(Daifam)**
 9. Bakuli
 10. Louri
 11. Sethig

XIX. Trashigang Dzongkhag**Gewogs:**

1. Bartsham
2. Bidung
3. Kanglung
4. Phongmey
5. Radhi
6. Samkhar
7. Shongphu
8. Uzorong
9. Yangnyer
- (a) **Sakteng Dungkhag**
 10. Merak
 11. Sakteng
- (b) **Thrimshing Dungkhag**
 12. Kangpara
 13. Thrimshing
- (c) **Wamrong Dungkhag**
 14. Khaling
 15. Lumang
 16. Nanong

XX. Trashiyantse Dzongkhag**Gewogs:**

1. Khamdang
2. Tongzhang
3. Thetsho
4. Yalang
5. Yangtse
6. Ramjar
7. Bumdeling
8. Jamkhar

Total Dzongkhags = 20

Total Gewogs = 201

Source: Ministry of Home and Cultural Affairs, Thimphu