

ABLE OF CONTENTS

Foreword	i
Notes for users	ii
Key Facts about Bhutan	v
Bhutan	vi

CHAPTER 1: POPULATION 1

TABLE	1.1: Projected Population (Number) by Sex, Bhutan 2005 - 2030	3
	1.2: Projected Population (Number) by Age Group and Sex, Bhutan 2005 & 2006	4
	1.3: Projected Population (Number) by Age Group and Sex, Bhutan 2007 & 2008	4
	1.4: Projected Population (Number) by Age Group and Sex, Bhutan 2009 & 2010	5
	1.5: Projected Population (Number) by Age Group and Sex, Bhutan 2011 & 2012	5
	1.6: Projected Population (Number) by Age Group and Sex, Bhutan 2013 & 2014	6
	1.7: Projected Population (Number) by Age Group and Sex, Bhutan 2015 & 2016	6
	1.8: Projected Population (Number) by Age Group and Sex, Bhutan 2017 & 2018	7
	1.9: Projected Population (Number) by Age Group and Sex, Bhutan 2019 & 2020	7
	1.10: Projected Population (Number) by Age Group and Sex, Bhutan 2021 & 2022	8
	1.11: Projected Population (Number) by Age Group and Sex, Bhutan 2023 & 2024	8
	1.12: Projected Population (Number) by Age Group and Sex, Bhutan 2025 & 2026	9
	1.13: Projected Population (Number) by Age Group and Sex, Bhutan 2027 & 2028	9
	1.14: Projected Population (Number) by Age Group and Sex, Bhutan 2029 & 2030	10
	1.15: Projected Population (Number) by Sex and Single Year of Age, Bhutan 2007	11
	1.16: Projected Population (Number) by Sex and Single Year of Age, Bhutan 2010	12
	1.17: Projected Population (Number) by Sex and Single Year of Age, Bhutan 2015	13
	1.18: Projected Population (Number) by Sex and Single Year of Age, Bhutan 2020	14
	1.19: Projected Population (Number) by Sex and Single Year of Age, Bhutan 2025	15
	1.20: Projected Population (Number) by Sex and Single Year of Age, Bhutan 2030	20

CHAPTER 2: HEALTH 74-75

TABLE	2.1: Summary of Health facilities and personal, Bhutan, 2003 to 2007	76
	2.2: Type of Health facilities in Dzongkhags, Bhutan, 2007	77
	2.3: Health personnel by category, Bhutan 2003 to 2007	78
	2.4: Top ten morbidity, Bhutan, 2007	79
	2.5: Top ten indoor hospital mortality, Bhutan, 2007	79
	2.6: Morbidity cases reported from basic health units, Bhutan, 2007	80
	2.7: Hospital morbidity cases reported, Bhutan, 2007	82
	2.8: Hospital Indoor morbidity report, Bhutan, 2007	85
	2.9: Number of patients reported in different hospitals, Bhutan, 2003 to 2007	88
	2.10: EPI coverage in percentage by Dzongkhags, Bhutan, 2007	90
	2.11: Details of child growth monitoring in immunization clinics, Bhutan, 2003 to 2007	91
	2.12: Details of maternal and child health care services, 2003 to 2007	91
	2.13: Deatails of maternal health care activities by Dzongkhag, 2003 to 2007	92
	2.14: Detail of complications during pregnancy, and during labour/deliveries, Bhutan, 2004 to 2007	95
	2.15: Family planning acceptors by type of method, Bhutan, 2003 to 2007	95
	2.16: Number of users of family planning methods by type by Dzongkhag, Bhutan, 2007	96
	2.17: Number of blood slide examinations for malaria and malariomatric indices, Bhutan, 2003 to 2007 ..	97
	2.18: Number of Tuberculosis cases by type, Bhutan, 2003 to 2007?	97
	2.19: Water and sanitation facilities type by Dzongkhags, Bhutan, 2007	98

CHAPTER 3: EDUCATION 99

TABLE	3.1: Number of schools and institutions, staff and students, Bhutan, 2007	100
	3.2: Number of educational institution, teachers and students Bhutan, 2003 to 2007	100
	3.3: Number of enrolment and teaching staff in schools, institutes, NFE" centres and day care centres, 2007	101
	3.4: Number of educational facilities by type and Dzongkhag, 2007	102
	3.5: Number of teachers in educational institutions by nationality, Bhutan, 2003 to 2007	103
	3.6: Number of educational facilities and students by Dzongkhag, 2007	104
	3.7: Number of enrolment in educational institutions, Bhutan, 2003 to 2007	105
	3.8: Number of students in high schools and below by Dzongkhag and type of school, 2007	106

	and type of school, 2007	107
	3.9: Number of students by grade and type of school, Bhutan, 2007	108
	3.10: Number of students by grade, 2003 to 2007	110
	3.11: Number of students enrolled, promoters, repeaters and dropouts by grade, Bhutan, 2007	111
CHAPTER 4: LABOUR AND EMPLOYMENT		112
TABLE	4.1: Employment in civil service, Bhutan, 2003 to 2007	113
	4.2: Population 15 years and over by activity status, participation rates and unemployment rate by sex and area, 2007	114
	4.3: Population 15 years and over by age-sex specific activity status and labour force participation rates and unemployment rates, Bhutan, 2007	111
	4.4: Labour force participation and unemployment rates by dzongkhag and by sex, 2007	111
	4.5: Distribution of employed persons by major sector, sex and area (percent), 2007	111
	4.6: Distribution of employed persons by status in main occupation by area and sex, 2007	126
	4.7: Distribution of unemployed persons by reasons of unemployment by age and sex, Bhutan (percent), 2007	126 111
CHAPTER 5: LAND USE AND AGRICULTURE		137
TABLE	5.1: Land use and vegetation types as percentage of total area, Bhutan, 1995	138
	5.2: Percentage of area by Dzongkhag, by type of land cover, Bhutan, 1995	139
	5.3: Altitude Zones of Dzongkhag as percentage of total area, 1995	140
	5.4: Percentage of total area of Bhutan by Dzongkhag, by" altitude Zones, 1995	142
	5.5: Average temperature by Dzongkhag, Bhutan, 1996 to 2007	144
	5.6: Total monthly rainfall at existing stations in each Dzongkhag, 2007	146
	5.7: Number of agriculture research and extension facilities, Bhutan, June 2008	148
	5.8: Irrigation channel constructed in Dzongkhags from 2003/04 to 2006/07	149
	5.9: Power tiller tracks development and achievements, 2007?	150
	5.10: Wet land converted to dry land, 2005	150
	5.11: Quantity of pesticides supplied to farmers, Bhutan 2003/04 to 2007/08	151
	5.12: Arable agricultural land, sokzhing and tsamdrol by land type and Dzongkhag, Bhutan, 2007	151
	5.13: Cultivated area, production and yield of major crops by Dzongkhag, " Bhutan, 2007	152
	5.14: Quantity of potato seed planted and production by variety and region, Bhutan, 1992/93 to 1994/95	153 154
	5.15: Number of livestock by type and Dzongkhag, Bhutan. 2005	155
	5.16: Imports and distribution of food items by food corporation of Bhutan, 2001 to 2007	156
	5.17: Quantity of Agricultural produce handled by food corporation of Bhutan, 2003 to 2007	157
	5.18: Quantity and value of forest products supplied by type and users, Bhutan, 2004/05 to 2006/07	158
	5.19: Details of protected areas in Bhutan by year of establishment and area 2006	159
	5.20: Disposal of logwood by forestry development corporation limited, 2003 to 2005"	160
CHAPTER 6: INDUSTRIES		162
TABLE	6.1: Number of industrial establishments by sector, Bhutan, 2003 to 2007	163
	6.2: Number of licensed firms in manufacturing and mining industries by sector, Bhutan, 2004 to 2007	164
	6.3: Number of industries by sector, size and type, Bhutan, 2003 to 2007	165
	6.4: Number of contract firms by type, by Dzongkhag, Bhutan, 2007	166
	6.5: Number of industries firms by type, by Dzongkhag, Bhutan, 2007	167
	6.6: Number of industries by type, by Dzongkhag, Bhutan, 2007	168
	6.7: Mineral production from mines in Bhutan, 2002 to 2007	169
	6.8: Mineral production, Bhutan, 2004 to 2007	170
	6.9: Number of establishments by type of industry and sector, 2000	170
	6.10: Distribution of establishments by Dzongkhags, Bhutan, 2000	171
	6.11: Number of establishments by sector and size of employment, Bhutan 2000	172
	6.12: Number of persons engaged in industries by employment status and sex, Bhutan, 2000	174
	6.13: Number of persons engaged in industries by employment status and sex, Bhutan, 2000	174

6.14: Number of persons engaged in industrial sectors by employment status and sex, Bhutan, 2000	175
6.15: Number of persons engaged in industrial sectors by employment status and sex, Bhutan, 2000	

CHAPTER 7: TRANSPORT AND COMMUNICATION 176

TABLE 7.1: Length of roads by type, Bhutan, 2001 to June 2007	177
7.2: Length of roads by type and Dzongkhag, Bhutan, June 2007	178
7.3: Number and length of motorable bridges by type, Bhutan, June 2008	179
7.4: Number of suspension bridges completed during IV to IX five year plan periods by Dzongkhags, Bhutan, 2007	180
7.5: Number of registered vehicles by type and region, 2002 to 2007	181
7.6: Number of driving licences issued by region, 2007	181
7.7: Number of passengers carried and revenue earned by Druk air flights by sector, 2003 to 2007	182
7.8: Number of flights made by Druk air by sector, 2003 to 2007	183
7.9: Telephone connection capacity by exchange, Bhutan, 2003 to 2009	184
7.10: Number of telephone trunk circuits, Bhutan, 2007	187
7.11: Number of trunk lines, connection capacities and sets in use, 2003 to 2007	190
7.12: Number of telephone trunk calls by type, 2003 to 2007	190
7.13: Telecommunication traffic in minutes and revenue earnings, Bhutan 2003 to 2007	191
7.14: Number of communication facilities, 2003 to 2007	191
7.15: Volume of postal mail traffic by destination, Bhutan, 2003 to 2007	192
7.16: Volume of mail, by type of article and destination, Bhutan, 2007	192
7.17: Number of value of money order by type, Bhutan, 2003 to 2007	193

CHAPTER 8: ENERGY 194

TABLE 8.1: Electricity generating stations and their capacities, Bhutan, FY 2005/06 & 2006/07	195
8.2: Total electricity generation and supply, 2002/03 to 2006/07	197
8.3: Major transmission lines for evacuating hydropower from Major Power Plant, 2006 to 2007"	198
8.4: Details of domestic electrical energy consumption, Bhutan, 2002/03 to 2006/07	199
8.5: Monthly revenue from sale of energy from Chhukha hydropower, 2005 to 2007	199
8.6: Consumption of electricity by type of consumer, 2002/03 to 2006/07	200

CHAPTER 9: TOURISM 201

TABLE 9.1: Annual tourist arrivals by region /continent, 2003 to 2007	202
9.2: Tourist arrivals by country of residence and revenue receipts, Bhutan, 2003 to 2007	203
9.3: Number of tourist arrivals by season and month, 2003 to 2007	204
9.4: Number of tourist arrivals by purpose of visit, 2003 to 2007	205
9.5: Number of tourist arrivals by mode of transport, 2003 to 2007	205

CHAPTER 10: FOREIGN TRADE AND BALANCE OF PAYMENTS 206

TABLE 10.1: Value of exports and imports, Bhutan, 2003 to 2007	207
10.2: (a) Top ten commodities of export, Bhutan, 2007	208
10.2: (b) Top ten commodities of imports, Bhutan, 2007	208
10.3: Value and its percentage share of imports from top ten selected countries, Bhutan, 2007	209
10.4: Value and its percentage share of exports from top ten selected countries, Bhutan, 2007	209
10.5: Overall balance of payments estimates, Bhutan, FY 2002/03 to 2006/07	210
10.6: Gross International reserves, Bhutan, 2003/04 to 2007/08	211
10.7: Monthly average exchange rates, Ngultrums per US \$, 2003 to 2007	211

CHAPTER 11: MONEY, BANKING AND FINANCE 212

TABLE 11.1: Monetary survey, Royal Monetary Authority, Bhutan National Bank and Bank of Bhutan, 2003 to 2007	213
11.2: Financial details of Royal Insurance Corporation of Bhutan, 2003 to 2007	214
11.3: Financial details of Bhutan National Bank, 2003 to 2007	215
11.4: Money and Banking details of Bhutan Development Finance Corporation, 2003 to 2007	216
11.5: Money and Banking of Royal Monetary Authority of Bhutan, 2003 to 2007	217
11.6: Money and Banking, Bank of Bhutan, 2003 to 2007	218

11.7: Investments of financial institutions by industry, amounts outstanding, 2003 to 2007	219
11.7: (contd.) Investments of financial institutions by industry, amounts outstanding, 2003 to 2007	220
11.8: Interest rates for deposits in financial institutions, 2003 to 2007	221
11.9: Interest rates and repayment period by sector and type of loan, financial Institutions (a), 2005 to 2007	221
11.10: Royal Securities Exchange of Bhutan, Number of shareholders 2003 to 2007	222
11.11: Royal Securities Exchange of Bhutan, Market information at the end of December 2007	223
11.12: Royal Securities Exchange of Bhutan, Volume Traded, Bhutan, 2003 to 2007	224
11.13: Royal Securities Exchange of Bhutan, Traded values, Bhutan 2003 to 2007	225
CHAPTER 12: PUBLIC FINANCE	226
TABLE 12.1: Recurrent budgetary expenditure of the government by ministry/agency, Bhutan, 2002/03 to 2006/07	227
12.2: Capital budgetary expenditure of the government by ministry/ agency, Bhutan, 2002/31 to 2006/07	228
12.3: Budgetary receipts of the government by source, 2002/03 to 2006/07	229
12.4: Summary of budgetary operations, 2002/03 to 2006/07	230
CHAPTER 13: PLAN OUTLAYS	231
TABLE 13.1: Ninth Plan Budgetary Outlay and Allocation, Bhutan, 2002/2007	232
13.2: Outlays of development plans, percentage by category, fifth plan to ninth plan	234
fifth plan to ninth plan.	235
13.3: Financial outlays during Ninth plan by sector, 2002 to 2007	236
13.4: Dzongkhag wise eight five year plan outlay, Bhutan, 1997 to 2002	238
13.5: Dzongkhag wise ninth five year plan outlay, Bhutan, 2002 to 2007	239
CHAPTER 14: NATIONAL ACCOUNTS	240
TABLE 14.1: Gross domestic product by kind of activity at current prices, 2003 to 2007	241
14.2: Gross domestic product by kind of activity in 2000 prices, 2003 to 2007	242
14.3: Share of Gross domestic product in current prices, 2003 to 2007	243
14.4: Gross domestic product growth rates over the preceeding years in current prices, 2003 to 2007	245
14.5: Gross domestic product growth rates over the preceeding years in 2000 prices, 2003 to 2007 ...	246
14.6: Gross domestic product by major sectors in current prices, 2003 to 2007	247
14.7: Gross domestic product by major sectors in 2000 prices, 2003 to 2007	247
14.8: Sectoral share to Gross domestic product in current prices, 2003 to 2007	247
14.9: Gross domestic capital formation in current and constant 2000 prices, 2003 to 2007	249
14.10: Expenditures on Gross domestic product in current prices, 2003 to 2007	249
14.11: Expenditures on Gross domestic product at constant 2000 prices, 2003 to 2007	250
CHAPTER 15: PRICES	251
TABLE 15.1: Consumer price indexes for food and non-food components, Bhutan, Jan 2006 to Dec 2008	252
15.2: Consumer price Indexes for major components, Bhutan, Jan 2006 to Dec 2008	253
15.3: Consumer price indexes - major components, Bhutan, Jan 2006 to Dec 2008	254
15.4: Consumer price indexes - major components, Bhutan, Jan 2006 to Dec 2008	255
15.5: Consumer price indexes for food items, sub - components, Bhutan, Jan 2006 to Dec 2008	256
15.6: Consumer price indexes for food items, sub - components, Bhutan, Jan 2006 to Dec 2008	257
15.7: Consumer price indexes, sub - components, Bhutan, Jan 2006 to June 2008	258
CHAPTER 16: CRIME	259
TABLE 16.1: Summary of crime reports by nature of crime, Bhutan, 2007	260
16.2: Details of crime reports by nature of crime, Bhutan, 2007	260
16.3: Monthly motor vehicle accidents by traffic division, Bhutan, 2007	261
16.4: Causes of motor vehicle accidents by traffic division, Bhutan, 2007	261
FIGURES	3
2.1: Health personnel by category, Bhutan, 2003 - 2007	4
3.1: Number of educational facilities by type, Bhutan, 2003 - 2007	4
4.1: Population 15 years and over by employment & activity status by sex and area, Bhutan, 2007	5
5.1: Land use by type, Bhutan, 1995	5

6.1: Industries by Type, Bhutan, 2007	6
7.1: Driving licenses issued by region, Bhutan, 2007	6
8.1: Electricity generation, Bhutan, 2007	7
9.1: Tourists arrivals by region, Bhutan, 2007	7
10.1: Value of exports and imports (2003 - 2007)	8
12.1: Recurrent budgetary expenditure of the government by ministry, 2006/2007	
14.1: Percent of share to GDP in 2000 prices	8
16.1: Motor vehicle accidents by traffic division, Bhutan, 2003 & 2007	9

FOREWORD

This Statistical Yearbook publication is the 26th edition in series. It is a comprehensive and systematic compendium of basic statistical information on Bhutan illustrating time series data about the Country's economy and social conditions.

The statistics collected are based on information gathered from statistical censuses and surveys, as well as from administrative data provided by various ministries and agencies.

For the benefit of the users, efforts have been made to provide brief explanatory notes, coverage and data sources. The data in yearbook will serve as the principal source of information for planners, policy makers, research workers and academicians. It is intended to serve the quest for information by clients in the global community.

This 26th issue of statistical yearbook of Bhutan features the detailed information on the population parameters based on the PHCB 2005 and it has 16 different chapters of general interest to meet the need of a wide range of data users.

Effort has been made to ensure that this publication meets acceptable statistical standards. Data maintenance, its validation, compilation and updating has been done in close collaboration with all the data disseminating/providing agencies, until the compilation was finalized for publication.

However, it was not always possible for us to undertake the detailed assessment of all the data available, albeit the need to place strong reliance on the existing data has been felt very much. Therefore, some shortcomings are inevitable as a result.

We value the contribution of different ministries and agencies that provided data and information for SYB 2008. In our desire to be more effective in serving the needs of the users for statistical information, we view our readers as key partners in publishing the SYB annually. We solicit comments and suggestions from the users of this yearbook, in order to improve the quality of the forthcoming issues.

(Kuenga Tshering)
DIRECTOR

NOTES FOR USERS

1. Unless otherwise indicated, the present issue of the Yearbook contains those statistics available as of December 2007
2. At the beginning of each chapter, general description of the statistics contained therein is given.
3. For every table, there is footnote indicating information specific to each figure in the table.
4. Unless otherwise indicated, “Year” refers to the calendar year, and “fiscal year” refers to the 12 months beginning from July to June.

n.a not available

N.A. not applicable

.. rounded to zero

***** sampling error too high for accurate estimation or estimates less than one percent.

() negative numbers

CY calendar year (period from January to December)

FY fiscal year (period from April to March until 1985/86 and from July to June since then, unless otherwise indicated.

5. In some cases, minor discrepancies may occur between sums of component items and totals because of rounding.
6. Dzongkhags given in some tables differ from those given in Annex I. This is because of changes, following the creation of new Dzongkhags.
7. Names of the Ministries/Agencies both in tables and footnotes may differ. This is because of changes, following the creation of new Ministries/agencies.
8. Detail figures in the tables may not add up to the totals because of rounding.
9. Singular term is most often used to represent plural terms, example: agency for agencies etc.
10. When contents of this book are to be quoted or copied in other publication/report, please give a due credit by referring the title of this yearbook
(Example) **Source: Bhutan Statistical Yearbook 2007, National Statistics Bureau**
11. For additional information on data or for any other queries, please refer to the original source or National Statistics Bureau.

SOME UNITS OF MEASUREMENT

Numbering and Scientific notations (US & scientific Community)

Hundred	= 10^2
Thousand	= 10^3
Million	= 10^6
Billion	= 10^9
Trillion	= 10^{12}

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 acre
100 square acres	= 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 m	= 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, 2007	658,888
Average Household size, (BLSS, 2007)	5.0
National Language	Dzongkha
National Currency	Ngultrum (Nu.)
Hospitals, 2007	29
Doctors, 2007	154
Civil servants, 2007	18,807
Schools, Institutes & NFE centres, 2007	1,304
Teachers (including in institutes & NFE), 2007	6,610
Students (including in institutes & NFE), 2007	171,842
Labour Force Participation rate, (BLSS, 2007)	67.3%
Unemployment rate, (BLSS, 2007)	3.7 %
Cellular Mobile subscriber, 2007	149,439
Postal infrastructure, 2007	127
Total road length, 2007	4,946.6 km
Registered vehicles, 2007	35,703
Electricity generation, 2007	6,422.6 MU
Electricity exports, 2006/2007	3643.71 MU
Tourist arrivals, 2007	21,094
Revenue earned from tourism, 2007	29.85 Mn US \$
Total establishments, 2007	26,261
Balance of trade, 2007	6113.62 Mn. Nu.
Exchange rate, Nu. Per US \$, 2007	41.4
Gross international money reserves, 2007/08	694.5 Mn US \$
Total Ninth Plan budgetary outlay (2002-07)	70,000 Mn Nu.
GDP, 2007 (Current Price)	51,521.6 Mn. Nu.
Average inflation rate, 2007	5.15 %
Purchasing Power of Nu. 2007 (base year =2003)	0.82 Nu.

BHUTAN

I. Location and Extent

Bhutan is one of the Asia's smallest nations, landlocked between the extensive borders of the two great populous nations of China and India. Only 38,394 square kilometers in extent, 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.

72.5 percent of the Kingdom is covered with forests; 10 percent with year-round snow and glaciers; nearly 8 percent is permanently cultivated or used for human habitation; another 2 percent was used for shifting cultivation (tsheri), a practice banned by the government; and 3.9 percent as meadows and pastures, while rest of the land is either barren, rocky 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 South Tibetan Detachment System (STD) separates the HHC from the Tibetan series. 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.

**By Lincoln Hollister and the 1996 expedition to Bhutan*

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 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 Sengor. It continues northwesterly through Bhutan, Sikkim, Nepal, Ladakh, and Kashmir and into Pakistan. To the east it continues through the Northern Frontier of India.

III. Relief and Surface features

Bhutan is 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 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 2,320 meters above sea level in west-central Bhutan, range from approximately 14° C to 25° C during the monsoon season of June through September but drop to between about -3° C and 14° 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... The vegetation is overall expression of various ecological factors, and it is one of the basic analytical tools for developing and understanding the mountain environment.

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 fourth Druk Gyalpo, His Majesty King Jigme Singye Wangchuck acceded to the throne in 1972. There had 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.

The present Druk Gyalpo, Jigme Khesar Namgyel Wangchuk acceded to the throne in December 2006. His Majesty the king is the head of state. The historic change of the governance came with the introduction of Democratic Constitutional Monarchy in 2008. The head of government is Prime Minister. The organogram reflects the logical delineation in the separation of powers along with the establishment of 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 National Assembly (Gyelyong Tshogdu) consists of 47 members who are representatives from the 47 Constituencies directly elected by the people of their respective constituencies. The main functions of the National Assembly are to enact, amend or repeal laws, endorse appointments of senior government officials, and approve the national budget. The National Assembly also approves the Five-Year Plans which are formulated by the government in consultation with the people of every district, initially through the Block Development Committees and District Development Committees, and finally in large public meetings with the King and sectoral heads of the Government. It also deliberates on issues that affect the security and well-being of the country and promote the welfare and happiness of the people. The National Assembly normally meets twice a year. However, if important and emergency matters so require, special sessions of the National Assembly may be convened by the Speaker. The duration of a National Assembly session is governed by the nature and scope of the points for discussion received from the people. A session normally lasts about three weeks. The Speaker is the presiding officer of the House. He is assisted by the Deputy Speaker in the conduct and smooth functioning of the house. The day to day administrative functions of the National Assembly rest with the Secretariat which is headed by a Secretary.

VIII. The National Council

IX. The Monastic Body

The Monastic Body comprises the Central Monastic Body and the Rabdeys (District Monastic Bodies). The current strength of the Monastic Body is over 5,000 registered gelongs (monks) and is financed by an annual subsidy from the Royal Government. Punakha and Thimphu Dratshang having strength of over 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 (Districts), governed by a Dzongkhag administrator (Dzongda) who is responsible for civil administration and developmental activities. Dzongda is assisted by a Dzongrab who is responsible for planning, development and civil administration. The larger Dzongkhags are sub divided into Dungkhags headed by a Dungpa. A Group of villages, from a Gewog, the lowest administrative unit each Gewog has a headman called the Gup (in the north) or Mandal (in the south). In each Dzongkhag the Dzongda is assisted in his development function by the Dzongkhag Yargye Tshogchung (District 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 Zhabdrung Ngawang Namgyal 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 heads (gups). As the final arbiter of law, the judiciary has been independent from other branches of the government since its inception.