

Today, conditions in Bhutan are very different from what they were in the sixties. Over 90% of the population has access to primary health care. Gross primary enrolment rate has reached 72%. Life expectancy at birth has gone up to 66 years.

bhutan national human development REPORT 2000

gross national happiness and human development - searching for common ground

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**The Planning Commission Secretariat
Royal Government of Bhutan**

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Foreword

It was only in 1961, when His Majesty the late King Jigme Dorji Wangchuck, the third monarch, ended Bhutan's self-imposed isolation and embarked on the path of modern development that the country became an active member of the global community. Until then, Bhutan was a self-contained traditional rural society. People cultivated as much as they needed and had a sustainable relationship with nature. They bred animals, wove their own cloth and made pottery. There were no roads, mules, yaks and horses were the principal mode of transport. Hence, modern development that began less than four decades ago has involved building roads, schools and industries. It has meant putting in place a proper system of administration, a network of roads and communication facilities. Enhancing the provision of modern health, sanitation, safe drinking water services and electricity also featured prominently amongst Bhutan's development priorities.

Today, conditions in Bhutan are very different from what they were in the sixties. Over to 90% of the population has access to primary health care and 65% of the rural population has access to safe drinking water. More than 90% of children are immunized. Iodine deficiency disorder has been virtually eliminated. Life expectancy at birth has gone up to 66 years. Adult literacy, however, remains low at 54% though the gross primary enrolment rate is estimated to be 72%. New industries have been started, and trade has expanded. Institutions promoting active people's participation in the development process are in place.

This first National Human Development Report describes Bhutan's development since 1961. It describes Bhutan's approach that tries to maintain a harmony between economic forces, spiritual and cultural values, and the environment. The Report underlines that material progress and an accumulation of wealth are not all that matters in life. In Bhutan, Gross National Happiness (GNH) is viewed as being by far more important than Gross National Product (GNP). The focus, right from the inception of planned development, has been on enriching people's lives, improving their standards of living, and in augmenting people's economic, spiritual and emotional well-being. Development with this purpose and from this perspective is what Bhutan has attempted.

The global Human Development Reports, released every year, have had a profound impact on development thinking. They have succeeded in making people the central concern of all development efforts. All nations need to take stock of their development initiatives and redefine their priorities. That is the usefulness of the national human development reports. And we hope that there is greater congruence between our national efforts and the global human development initiatives.

We recognize that our gains are modest, and we have a long way to go. But our efforts have been sincere. We have had to contend with several constraints. Some are natural like the ruggedly mountainous terrain that makes provisioning of basic social services a challenge. Others are human, like the shortage of trained and skilled manpower. Some of it is reflected in the Report itself. We have only recently begun the process of gathering data on human development indicators at the sub-national level. And we hope that our future reports will make use of the new information and address different themes.

Bhutan is entering a new phase of development and the challenges we face are many. In particular, we have to fulfill the many aspirations of the younger generation. We have to avoid the pitfalls of reckless modernization and unplanned urbanization. We have, in the past, worked in close partnership with other countries, the United Nations and other international organizations and institutions. We hope that these partnerships are further strengthened in the coming years.

The Royal Government recognizes that a strong and reliable database on demographic and socioeconomic conditions is essential for developing policies that further promote human development in Bhutan. Several measures to strengthen the country's national data collection processes have already been initiated, but more still needs to be done. The Royal Government intends to make this a national priority over the coming years.

Finally, we would like to thank the United Nations Development Programme and their Field Office in Bhutan for the assistance and cooperation provided in the preparation and publication of this report.

Tashi Delek!
sd/-
Sangay Ngedup
Chairman
Planning Commission
Royal Government of Bhutan

CHAPTER 1

THE STATE OF HUMAN DEVELOPMENT

The process of modern development in Bhutan started only in 1961, less than four decades ago, when His Majesty King Jigme Dorji Wangchuck, the third Druk Gyalpo, opened up the country to the rest of the world by ending the era of self-imposed isolation. Until then, Bhutan had been geographically isolated. Spread over 46,500 square kilometers, the country is landlocked, surrounded by India in the south and the Tibetan Autonomous Region of China in the north and the north-west. Bhutan is almost entirely mountainous, with land rising from about 200 metres above sea level in the south to the Himalayas in the north, towering over 7500 metres. The country was never colonized and has always remained independent.

The traditional society, meanwhile, was a self-contained rural economy. People cultivated as much as they needed and had a sustainable relationship with nature. Mountain slopes were terraced for agriculture and land was irrigated. They bred animals, wove their own cloth and made pottery. Surplus rice was exported to Tibet, and salt, tea and wool were imported in exchange. The ending of isolation paved the way for human development. It meant building infrastructure, both physical and social, promoting economic growth and simultaneously improving the quality of life of the people.

Early History

Very little is known about Bhutan's early history. Stone tools that have been found indicate that the country was inhabited as early as 2,000 -1,500 BC. However, historical records available today begin only from the visit of Guru Padmasambhava, popularly known as Guru Rinpoche, or the Precious Master, in the 7th century. Guru Rinpoche brought in Buddhism, of which several forms are practiced in Bhutan today. Before that, an animistic religion known as Bon prevailed in most parts of the country. Bon traditions and rituals are still practiced in parts of Bhutan during the celebrations of local festivals. Between the 7th and 17th century, many important lamas visited Bhutan; one, Zhabdrung Ngawang Namgyal (1594-1652), a lama of the Drukpa Kagyue sect, came from Tibet in 1616 and unified the country. He set up a theocracy, an administrative system and a code of law. However, 1907 marked the beginning of a new era when Gongsar Ugyen Wangchuck was unanimously elected and crowned the first hereditary monarch of Bhutan by representatives of the general public, the Dratshang (Central Monastic Body) and the Penlops (district governors). The country was then brought under a central authority that provided stability and an opportunity for development.

Religion remains part of every aspect of Bhutanese life. Buddhism is practiced by a majority; other religions, Hinduism is most prevalent. A respect for peace, the need to do right and a spiritual sense are strongly reflected in painting, drama and dance. For instance, art forms focus on the individual only to place him or her in a particular role in the larger scheme of life. Indeed, an art form in Bhutan is first a religious work; its aesthetic value comes second. In the old days, it was also customary for one son from each family to join a monastery, again establishing a close link between family, religion, and public life. Bhutan has made every efforts to ensure harmony between economic policies and its long spiritual and religious traditions. Its development strategy has been extremely conscious of the need to enrich cultural values, nurture its rich environment, and fulfil the aspirations of people.

Human Development and Human Progress

Despite their self-imposed isolation until the 1960s and the late start, the people of Bhutan have recorded many achievements. With the population of 600,000 in 1996, Bhutan is one of the least populated countries in

the world.¹ According to most recent estimates, the annual rate of population growth is around 3.1%, significantly higher than the rate of 2.6% recorded during the early 1980s. Between 1980-94, the crude birth rate rose from 39.1 to 39.9 per 1000 population, whereas the crude death rate fell sharply from 19.3 to 9 per 1000 population. As a result, the country's population increased by almost 33% in just 12 years.

The human development perspective regards an expansion of human capabilities as the goal of development. People and their central concerns are placed at the centre of all development efforts, and primacy is given to improving the richness of people's lives. From this perspective, commodity production and income matter only as means to improving the quality of life. The ultimate goal is to enhance people's capabilities or freedoms to pursue what people value most. Consequently, development success or failure not only is assessed in terms of an expansion in incomes or real GDP per capita, but also on the basis of improvements in the standards of living that those policy interventions bring about. (See Box 1).

What is human development?

Human development is a process of enlarging people's choices. Obtaining income is certainly one of the main means of expanding choices and well-being. But too often, the expansion of income is confused with the enhancement of human capabilities. Human development goes well beyond income and growth to cover the full flourishing of all human capabilities. It emphasizes the importance of putting people – their needs, their rights, their aspirations, their choices – at the center of the development effort.

Investigations of the priorities of poor people have often discovered that they put a high value on many things besides high income – including adequate nutrition, access to safe water, better medical services, more and better schooling for their children, affordable transport, adequate shelter, secure livelihoods, and productive and satisfying jobs. Beyond these needs, people also value benefits that are non-material. These include, for example, freedom of movement and speech and freedom from oppression, violence and exploitation. People also want a purpose in life, along with a sense of empowerment. And as members of families and communities, people value social cohesion and the right to assert their own traditions and values. Money alone cannot buy these choices.

But regardless of the level of development, the three essentials for people are to lead a long and healthy life, to acquire knowledge, and to have access to resources needed for a decent standard of living. Human development does not end there, however. Other choices range from political, economic and social freedom to opportunities for being creative and productive and enjoying self-respect and guaranteed human rights.

Box 1 : Source: Human Development Reports 1996 and 1997

¹ See *Technical Appendix B for a discussion on population totals and related issues.*

According to the Human Development Reports, development gives people the freedom to make choices. However, the Reports point out:

"No one can guarantee human happiness, and the choices people make are their own concern. But the process of development should at least create a conducive environment for people, individually and collectively, to develop their full potential and to have a reasonable chance of leading productive and creative lives in accord with their needs and interests."

The widespread acceptance in recent years of the human development framework is a reflection of the growing disenchantment with the use of income (or per capita GDP) and income growth as indicators of well-being and progress. Clearly, there is more to life than an expansion of income or an accumulation of wealth. Goods and services are valuable, but they are not valuable in themselves. Even income has only an instrumental significance; it is useful only to the extent that it can be translated into well-being. Several factors mediate between the conversion of income into well-being; it is not automatic. For instance, much depends upon the levels of public provisioning of basic social services. A rich farmer's wealth may be of little use if there are no health facilities in the village. Similarly, income levels may not matter much if socio-cultural norms prevent girls from freely accessing both education and health care. Many of these dimensions of life that people value may not be correlated to income levels in any predictable manner. For instance, levels of pollution, crime, violence, discrimination and abuse occur in both rich and poor societies. The preoccupation with economic growth and creation of wealth also displaces people from the centre of development. The human development approach brings people and their concerns back to the centre-stage of development. It concentrates on what people aspire for most - and very often, especially among the poor, self-respect, freedom, peace, dignity, security and happiness matter much more than income. It is from this perspective that the human development framework defines the enhancement of human capabilities as the goal of development.

Indicators of Human Development

The following section reviews Bhutan's situation in three essential capabilities. These are longevity (measured by life expectancy at birth), the capability to be educated (measured by literacy and access to basic education), and command over resources needed to establish a decent standard of living (measured by per capita income).

Life Expectancy

Life is valuable in itself and in the fact that it is necessary for people to achieve other capabilities. Living long indicates the capability to avoid both fatal illnesses and escapable mortality. Historically, much of the gains in life expectancy have come from significant improvements in health and public health systems, sanitation, levels of environmental pollution, and better nutrition and access to safe drinking water. The association between longevity and these dimensions of a decent quality of life makes life expectancy an important indicator of human development. Given the lack of specialized and comprehensive data on morbidity, life expectancy also serves as a surrogate measure of people's health and nutritional status. To that extent, life expectancy is an indicator not merely of the quantity but of the quality of life. Bhutan by 1994 had achieved a life expectancy of 66 years.² This was seven years lower than Sri Lanka's achievement, for example, but it

² *The National Demographic Health Survey of 1994 is the main source of demographic data. See Technical Appendix B for a discussion on data availability.*

was also three years more than the average for South Asia. (See Figure 1.)

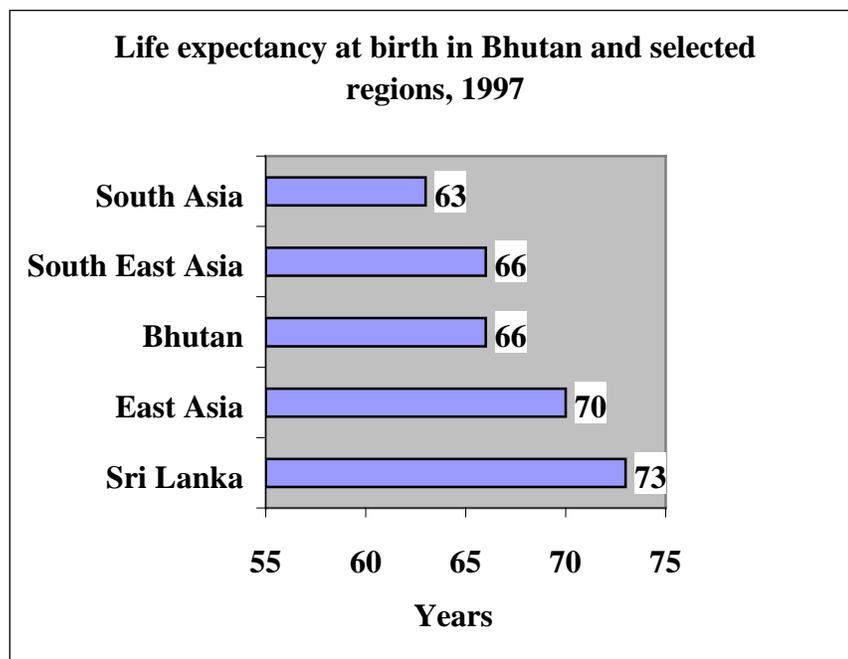


Fig.1

Source:

Human Development Report 1999

National Health Survey (NHS 1994)

Infant Mortality

Life expectancy figures are strongly influenced by the prevailing levels of infant mortality. As an indicator of child survival, infant mortality conveys more than merely the number of children who die before the age of one. Many aspects of life are reflected in this statistic, including the capability of parents, the prevalence of malnutrition and disease, the availability of clean water, the efficacy of health services, and above all, the health and status of women. Bhutan in 1994 reported an infant mortality rate of 71 per 1000 live births. This was considerably higher than Sri Lanka's figure of 17 deaths per 1000 live births, it was marginally lower than the average for South Asia. (See Figure 2.)

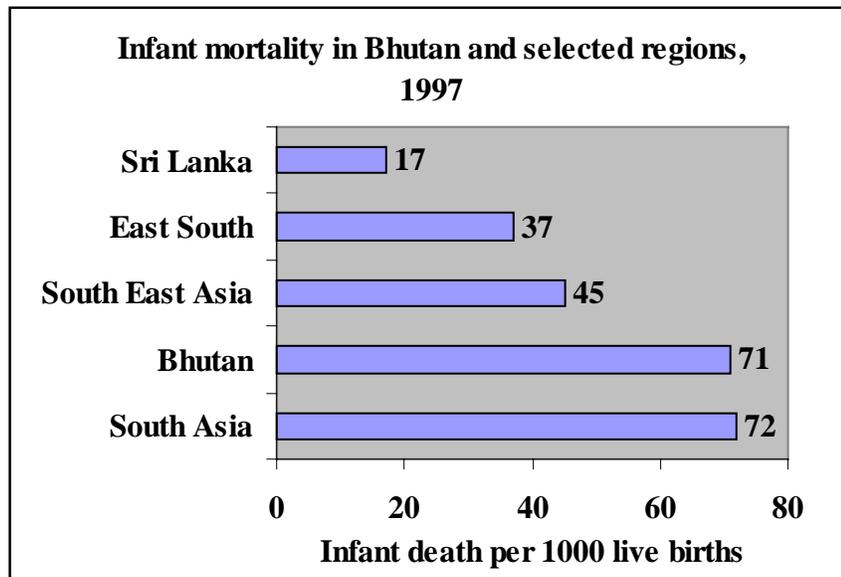


Fig.2
Source: Human Development Report 1999
Central Statistical Organization (CSO)

Adult Literacy

Knowledge is another important element of human development, because it forms the basis for expanding opportunities and making informed choices. Being educated is not only a valuable achievement in itself, but it also enables people to achieve other functions that they value. Education, for instance, expands people's opportunities for obtaining jobs. Education also increases people's awareness about life around them; empowers them, especially women, to make better choices and resist oppression; and encourage meaningful participation in development. Literacy is the first step towards building an individual's education, and to that extent, literacy rates indicate access to education and knowledge. By 1994, Bhutan had achieved an adult literacy rate of 47.5% (Figure 3.)

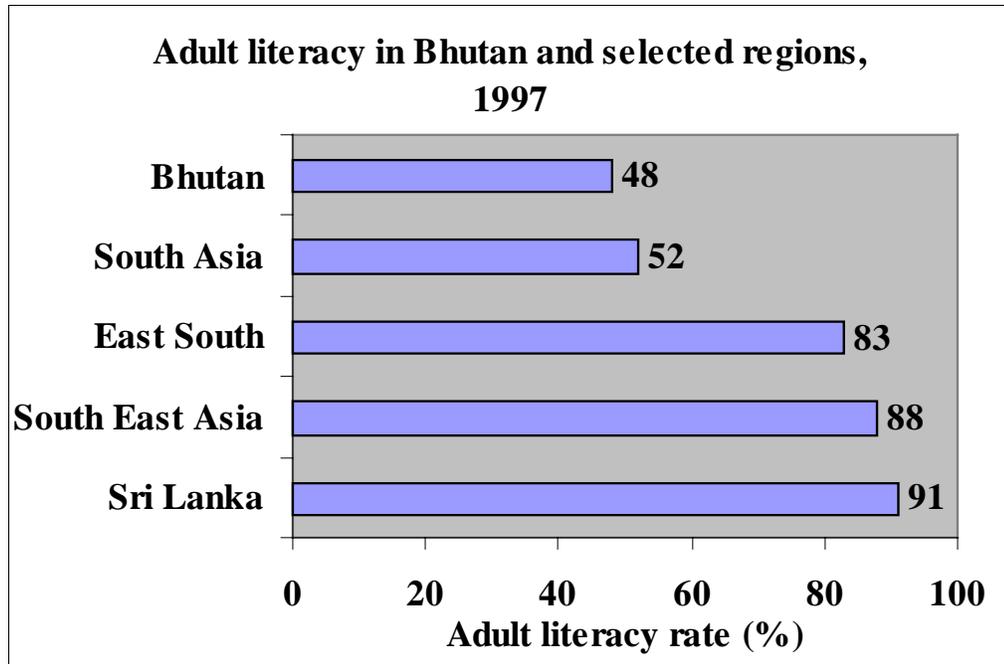


Fig.3
Source : Human Development Report 1999
Central Statistical Organization (CSO)

Income

Income is treated as a component of human development, not for its importance as an end in itself, but as a means of establishing command over resources needed for decent living. Bhutan recorded a GNP per capita of US\$594 in 1997. Income levels vary significantly amongst the South Asian countries. According to 1997 figures, Maldives had the highest GNP per capita, with US\$1180, while Nepal had the lowest, with US\$220. (See Figure 4.)

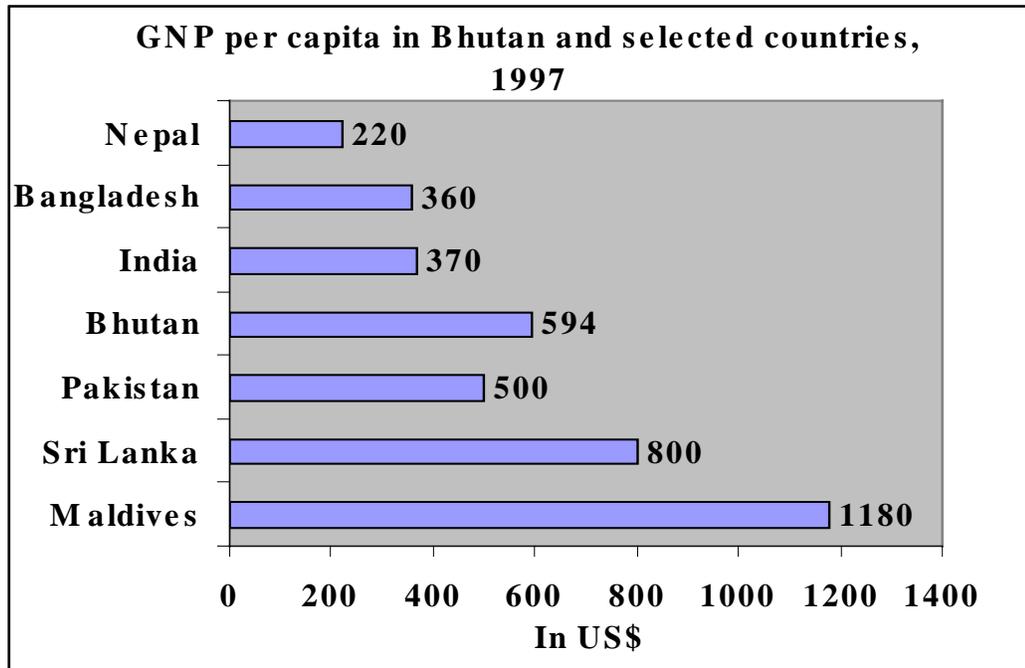


Fig. 4
Source: Human Development Report 1999
Central Statistical Organization (CSO)

Measuring progress by using GNP per capita often gives a partial and distorted picture of human development. This is perhaps more true of Bhutan than many other countries. A large part of Bhutan's rural economy remains non-monetized, with barter systems still prevalent. Entering into the computation of GNP are only monetary transactions; this often leaves out a significant proportion of work done within the family, especially by women, and voluntarily within the community.

Figures of GNP also fail to capture the environmental wealth of a nation. In the case of Bhutan, the environment plays a major role. The country's natural bio-diversity has made it one of the world's ten most important bio-diversity "hotspots." Indeed, Bhutan has some of the best examples of the last of the Himalayan ecosystems. More than 60% of the species unique to the eastern Himalayas are found here, including at least 770 bird species, 165 species of rare mammals, and more than 5,000 vascular plants. More than 26.23% of the land area has been designated as national parks, reserves and protected areas. Forests cover 72.5% of Bhutan's land (64.5% tree cover and 8% scrub forests). In contrast, pasture lands cover only 4% and cropland an estimated 8%. Bhutan's forests are among the most diverse in the world; tropical and sub-tropical forests are found in the south. Oak forests begin to mix with the broad-leafed ones at 2000 metres. And the most extensive and valuable spruce and fir forests are found in the inner Himalayas at altitudes ranging from 2700 to 3000 metres.

In large parts of the country, forests provide an abundant source of fuelwood, fodder for livestock, leaf litter and mould for the replenishment of soil fertility, food supplements, plants for herbal medicines and construction materials. They are a source of cash incomes, derived, for example, from the collection and sale of mushrooms, medicinal plants, and plants for the extraction of essential oils, as well as the production of traditional paper and natural dyes. Many cottage and handicrafts industries also rely on forests for their raw materials. The significant contribution of the environment and natural resources to Bhutan's economy is best

brought out in a recent World Bank study that attempts to compute the "wealth of a nation" by incorporating four kinds of capital: man-made (that which typically enters financial and economic accounts), natural capital (that is typically ignored by national income accounting procedures), human capital (that represent investments in health, education and nutrition of individuals), and social capital (the institutional and cultural basis for a society to function). Natural capital is a country's basic resource endowment and is defined as the stock of environmentally provided assets, such as soil, atmosphere, forests, water, wetlands. According to this study, Bhutan's estimated wealth per capita (as opposed to income) is US\$6,500. Almost 85% of this is attributed to natural capital, whereas only 7% is attributed to produced assets and 8% to human capital.

But neither does this modified monetary measure capture vital elements of the quality of life in Bhutan. Most striking, for example, to any visitor is the extraordinarily clean quality of the environment. Almost the entire country is relatively free of traffic congestion, air and noise pollution compared to other locations. Moreover, widespread extreme poverty and abject suffering that the relatively low level of income may suggest are not typically found in Bhutan. But this is not to deny the existence of some forms of deprivations faced by certain communities, in specific regions, and during different seasons in terms of access to food, educational opportunities and basic health care. Systematic household surveys have not yet been conducted to capture and reflect the extent to which people's aspirations and needs remain unfulfilled. But observations made on field visits and in discussions with communities suggest that the extent and depths of such deprivations are not as widespread as the low levels of per capita income may seem to convey. Almost everyone is reasonably well clothed and has enough food to eat, there are no starvation deaths, and virtually every family enjoys access to land and shelter. However, there is an urgent need to improve the levels of income. Many of the factors that have inhibited growth including low agricultural productivity, slow expansion of non-farm employment opportunities and limited provision of higher education facilities continue to receive priority.

Bhutan's Human Development Index

The Human Development Index is based on three indicators: longevity, as measured by life expectancy at birth; educational attainment, as measured by a combination of adult literacy (two-thirds weight) and combined primary, secondary and tertiary level enrolment ratios (one-third weight); and access to resources needed for a decent living, as measured by real Gross Domestic Product (GDP) per capita in purchasing-power-parity adjusted dollars. Table 1 presents data on Bhutan's Human Development Index.

Table 1: Bhutan's Human Development Index 1998

Life expectancy at birth (years)	Adult literacy rate (%)	Combined 1st, 2nd & 3rd Level gross enrolment ratio (%)	Real GDP per capita (PPP\$)	Life expectancy index	Education index	GDP index	Human Development index (HDI)
1998	1998	1998	1998				
66	54	44	1534	0.683	0.600	0.460	0.550

Source: See Technical Appendix A

With an HDI value of 0.550, Bhutan falls in the category of medium human development countries, along with Sri Lanka and Maldives in South Asia. Nevertheless, there is still a long way to go – and much ground to cover - in terms of improving the levels of human development in the country.

From Bhutan 2020
A Vision for Peace, Prosperity and Happiness

Central Development Concept:
Maximizing Gross National Happiness

The guiding principles for the future development of our nation and for safeguarding our sovereignty and security as a nation-state must be complemented by a single unifying concept of development that enables us to identify future directions that are preferred above all others. This unifying concept for the nation's longer-term development is already in our possession. It is the distinctively Bhutanese concept of Maximizing Gross National Happiness, propounded in the late 1980s by His Majesty King Jigme Singye Wangchuck.....

The concept of Gross National Happiness was articulated by His Majesty to indicate that development has many more dimensions than those associated with Gross Domestic Product, and that development should be understood as a process that seeks to maximize happiness rather than economic growth. The concept places the individual at the centre of all development efforts and it recognizes that the individual has material, spiritual and emotional needs. It asserts that spiritual development cannot and should not be defined exclusively in material terms of the increased consumption of goods and services.

Expanding Gross National Happiness

Consistent with the human development approach, from a Bhutanese perspective, His Majesty the King Jigme Singye Wangchuck has called for focusing more broadly on Gross National Happiness – and not narrowly on just Gross National Product. Already in the 1960s, the late King Jigme Dorji Wangchuck had declared that the goal of development should be to “make people prosperous and happy.” Development did not mean a blind expansion of commodity production. Instead, a holistic view of life and development is called for that augments people’s spiritual and emotional well-being as well. It is this vision that Bhutan seeks to fulfill. (See box 2.) **Box 2**

The Constituents of Happiness

A great deal of consistency exists between the Bhutanese concept of Gross National Happiness (GNH) and human development. Commodity ownership may contribute to standard of living, but it is not a constituent part of that standard. Amartya Sen points out, for instance, that a grumbling rich man may well be less happy than a contented farmer, but he does have a higher standard of living than the farmer. It is the sense of discontentment or emptiness that the rich farmer experiences that constitutes unhappiness. Happiness may be subjective, but this subjectiveness is shared by all, regardless of levels of income, class, gender or race.

The pursuit of GNH calls for a multi-dimensional approach to development that seeks to maintain harmony and balance between economic forces, environmental preservation, cultural and spiritual values and good governance. The articulation of happiness as the goal of development has strong roots in Bhutan’s Buddhist traditions. Rather than talk of happiness per se, Buddhism talks about avoiding dissatisfaction through adequate provisioning of four necessities – food, shelter, clothing and medicine. Significantly, however, it holds that meeting this hierarchy of wants is only the first step in avoiding human suffering which ultimately depends upon cultivating a sense of detachment and spiritual fulfillment.

Apart from the religious influences, the concept of GNH as it has evolved over the years has also been a

reaction to the experiences of other developing nations. Bhutan's late start in development has had one major advantage: it allowed the country to learn from the experiences of other countries. The pursuit of growth in GNH rather than in GNP reflects Bhutan's anxiety to avoid some of the more glaring failures of the blind pursuit of economic growth. By seeking to promote human happiness, the focus is on what matters most to people: their security, peace and comfort. Consequently, Bhutan has identified four essential constituents of happiness: economic development, environmental preservation, cultural preservation and promotion, and good governance.

From Bhutan 2020
A Vision for Peace, Prosperity and Happiness

The key to the concept of Gross National Happiness cannot be found in the conventional theories of development economists and in the application of such measures as utility functions, consumption preferences and propensity and desire fulfillment. It resides in the belief that the key to happiness is to be found, once basic material needs have been met, in the satisfaction of non-material needs and in emotional and spiritual growth. The concept of Gross National Happiness accordingly rejects the notion that there is a direct and unambiguous relationship between wealth and happiness. If such a relationship existed, it would follow that those in the richest countries should be the happiest in the world. We know that this is not the case. This marginal increase has also been accompanied by the growth of many social problems as well as such phenomena as stress-related diseases as well as suicides, surely the very antithesis of happiness.

(In Bhutan) the most important priorities can be classified under five thematic headings that provide us with powerful objectives for steering process of change. These five objectives are human development, cultural and heritage, balance and equitable development, governance and environmental conservation. These five main objectives not only give very tangible expression to the central tenets of Gross National Happiness, they also embody the guiding principles that have been identified as being of decisive importance in ensuring our future independence, sovereignty and security. As such, they acquire us a special significance in elaborating preferred directions for the kingdom's future development.

If happiness is among the cherished goals of development, then it does matter how this happiness is generated, what causes it, what goes with it, and how it is distributed – whether it is enjoyed by a few or shared by all. Human happiness may not automatically flow from economic growth. Conscious policies are needed to establish a link between economic progress and human happiness. Part of this will require improvements in socioeconomic conditions and the satisfaction of basic needs. But a growing income and better provisioning of basic social services are not sufficient by themselves; these have to be supplemented by appropriate employment opportunities, social security and adequate leisure time.

Bhutan seeks to establish a happy society, where people are safe, where everyone is guaranteed a decent livelihood, and where people enjoy universal access to good education and health care. It is a society where there is no pollution or violation of the environment, where there is no aggression and war, where inequalities do not exist, and where cultural values get strengthened everyday. A happy society is not a fatalistic society, but is built on hope and aspirations. It is also a more equal and compassionate society, where sharing and contentment come out of a positive sense of community feeling. A happy society is one where people enjoy freedoms, where there is no oppression, where art, music, dance, drama, and culture flourish.

Ultimately, a happy society is a caring society, caring for the past and future, caring for the environment, and

caring for those who need protection. Establishing such a society will require a long term rather than a short-term perspective of development. Much will depend upon how well the country's environmental resources are harnessed and managed. Happiness in the future will also depend upon mitigating the foreseeable conflict between traditional cultural values and the modern lifestyles that inevitably follow in the wake of development.

CHAPTER 2

HUMAN DEVELOPMENT SINCE 1960.

In the early 1960s, His Majesty King Jigme Dorji Wangchuck ended Bhutan's self-imposed isolation and made it an active member of the global community. It was clear that for the country to develop, its people had to develop. It may be true that nobody starved in Bhutan and everyone lived off the land, but people had to acquire better education, and they had to have access to modern health services, sanitation, safe water and electricity. It also meant that human development would be impossible without a proper administrative system, a network of roads and communication facilities.

Practically no data on human development exist for the period before the 1960 and very little quantitative information is available between 1960 and 1980. The Royal Government began putting systems of data collection into place only in the 1980s. Available data on human development indicators permit construction of the Human Development Index for three time periods between 1984 and 1998.

Table 2: Trends in Bhutan's Human Development Index 1984 - 1998

	Life expectancy at birth (years)	Adult literacy rate (%)	Combined first-, second- and third level gross enrolment ratio	Real GDP per capita	Life expectancy index	Education index	GDP index	Sum of the indices	Human Development Index (HDI)
1984	47.4	23.0	24.5	901	0.373	0.235	0.367	0.975	0.325
1991	56.0	35.2	33.2	1,235	0.517	0.345	0.420	1.282	0.427
1994	66.0	47.5	39.0	1,338	0.683	0.447	0.433	1.563	0.521
1998	66.0	54.0	44.0	1,534	0.683	0.600	0.460	1.743	0.550

Source: See Technical Appendices A and B

Thus, Bhutan has moved from being a low human development country to a medium human development country over a short period of 10 years.

Expanding Opportunities

As noted, Bhutan's first five-year development plan was launched in 1961, until then the economy had been characterized by extreme isolation. Infra-structural facilities were grossly inadequate. Mules and horses were the dominant mode of transportation; the country had no metalled roads, no motor vehicles, and no electricity. There were no modern means of communications connecting it to the rest of the world, nor did it have a postal or telecommunication system. Planned development ended the Kingdom's physical isolation and ensured investment in creating basic physical and social infrastructure. Social services also were almost entirely lacking. It was during the first plan that Bhutan's initial roads, schools and hospitals were built. The

next three five year plans retained this focus. Later plans began to deal with agriculture and industry.

By the 1980s, Bhutan had made major strides in many areas of development: in infrastructure, energy, telecommunications, agriculture and industry. Although it has attempted to promote opportunities in all spheres of life, there is still a long way to go. Every effort has been made not to lose sight of the primary goal: the betterment of human life without having to inordinately compromise tradition and culture, or the country's magnificent natural resources.

Access to Jobs and Sources of Livelihood

Almost 85% of Bhutan's population lives in rural areas. Agriculture continues to be the chief source of livelihood. Most of the people earn their living through farming, animal husbandry and forest products. An estimated 65,000 farming families own, on average, agricultural landholdings of 1.5 hectares per household. Farming activity is typically diversified with most households growing a range of cereals and horticultural products, keeping several types of livestock and utilizing the forests for fuels, grazing and compost. The five-year plans have tried to boost farm incomes through agriculture and livestock development.

Only 16% of Bhutan's land is suitable for agriculture. Of this, 8% is under cultivation. The mountainous terrain and fragile ecology does not allow for any expansion, limiting development in this sector to introducing high-yielding varieties, improving farming techniques and applying enhanced inputs. Agricultural production has increased despite the limitations of land. In 1984, 185,100 tones of cereal were produced. In 1992 this figure had increased to 207,000 tones. Agricultural infrastructure also grew significantly: by 1998, a network of 159 extension centres covered most of Bhutan, and 5 research centres, 14 seed and plant production farms, 3 farm mechanization centres, 1 farm machinery training centre and 1 national mushroom centre were established. Even so, the problem of low land productivity persists in many parts of the country.

Horticulture has emerged as an important area for generating income. Diverse agro-climatic conditions have allowed for the commercial production of a variety of fruits. These include apples in the temperate north and mandarin in the sub-tropical south. Potato, cardamom, ginger and oil seeds also are being produced. Livestock has been developed by introducing improved breeds and improving pasture and veterinary services. Cattle are owned by an estimated 95% of households. Meat and other livestock products are mostly retained for self-consumption; marketed surpluses are small. In some regions, increased production of dairy food has enhanced cash incomes for farm households and improved diets. Between 1985-98, the number of veterinary hospitals increased from 18 to 21, and livestock extension centres from 87 to 110.

Even though only 15% of Bhutan's population reside in urban areas, migration from rural to urban areas has been occurring steadily especially with the rapid increase in population and the improvements in the educational levels. Disenchanted with the limited opportunities in rural areas, the young in particular are moving to the towns in search of better jobs. The Royal Civil Service is the largest employer in Bhutan, particularly of the educated. Initially, because of a shortage of skilled people, a large part of Bhutan's workforce was brought in from other countries. Even senior bureaucratic positions were manned by expatriates. But with rising levels of literacy and education, things have changed, and Bhutanese nationals now fill the cadres of the civil services. But the growth of the civil service sector can no longer keep pace with the increasing numbers of qualified people who seek employment every year. In 1984, only 43 university graduates were available for employment, and the civil service absorbed all. In 1994, 94 graduates needed employment and the civil service was able to absorb only fifteen. Others have had to find employment in public corporations and private sector enterprises. Such opportunities in the private sector need to expand in order to absorb the growing number of educated persons in the country.

Access to Basic Health

Life in the early days was short and hard. Life expectancy in Bhutan has risen from 37 years in 1960 to 66 years in 1994. Very few nations in the world, even those wealthier than Bhutan, have seen such a dramatic rise in longevity over this period. When Bhutan began its development process in 1961, it had just 4 hospitals and 11 dispensaries operated by 2 qualified doctors and untrained compounders. To create a basic health infrastructure was an urgent priority. By 1998, Bhutanese health system consisted of 28 hospitals and 145 basic health units (BHUs) including 1 Indigenous Hospital and 11 Indigenous Units. There are doctors 98, 28 Drungtshos (Indigenous Physician) and 928 paramedical workers.

Basic health care is free, and Bhutan has invested large resources into ensuring universal primary health care. The effort has been to provide preventive health care rather than focus on tertiary care. Planning and monitoring of health programmes take place at the district level through medical officers who also supervise the BHUs. Health awareness at the day-to-day level also is imparted by the BHUs, which form the health support line of the country. The BHUs were set up in the 1970s to cater to the health needs of Bhutan's scattered population. Before this, formal health care was only available in the urban centres. Now there are 1,058 village level health workers, who provide basic medical help and share their health knowledge, skills and understanding. The village health worker refers cases to the BHU. In addition, mobile outreach clinics reach those who live too far from the BHUs. By 1998, there were 454 outreach clinics that provided preventive health care, including immunization of children and pregnant women. They provide antenatal care, promote nutrition, provide iron and deworming tablets, and monitor the growth of children.

So-Wa-Rigpa, an indigenous medicinal system introduced in the 17th century from Tibet, co-exists along with the modern health care system even today and is actively promoted by the Royal Government of Bhutan. Services are offered by traditional institutes and traditional healers. The system uses Himalayan flora, which has several species with healing properties. Traditional medical services are offered through the indigenous hospital in Thimphu and 11 indigenous dispensaries spread across the country.

Infant mortality rates in Bhutan have dropped to less than half of what they were thirty years ago. In 1960, Bhutan's infant mortality rate (IMR) was 203, one of the highest in South Asia and in the world. In 1984, the country's IMR had come down to 142. By 1994, Bhutan had reduced its IMR to 70.7, half the level prevailing in 1984. By 1998 Bhutan had achieved an overall child immunization coverage rate of 90%, which is partly due to the setting up of an effective extension service and also because of the public campaigning and awareness efforts launched by the Government. A National Diarrhoeal Diseases Control Programme has been set up. Efforts are also on going to help prevent disease by disseminating information about water, sanitation and hygiene. At the same time, as cities grow the need for an effective urban public health system is being felt. A sewerage system has been put in place in Thimphu, the capital, and Phuentsholing, the second biggest town. Further investment is planned for developing other urban centres to improve the quality of urban life.

Before the mid-eighties, iodine deficiency disorder was a serious problem in Bhutan. Goitre prevalence rates were high. Even in 1983, a survey conducted in 11 out of Bhutan's 18 districts showed an average goitre prevalence rate of nearly 65%. Cretinism was reported in all districts, reaching 10% or higher in those districts most severely affected. The findings of the survey prompted the country to launch a national iodine deficiency disorder (IDD) control programme. Realizing the urgent need for salt iodination, in 1985, a salt iodination plant was commissioned near Bhutan's southern border to process all salt entering the country. Today more than 90% of edible salt is fortified with iodine. By 1991, the goitre prevalence rate had come down to an average of 26% among children. Today iodine deficiency has virtually been eliminated.

The country has given high priority to maternal and child health. Levels of Grade I malnutrition among children fell from 32% in 1993 to 18% in 1997. Bhutan has fewer children under 5 that are underweight and malnourished than some other countries in the region. Maternal mortality rates have been halved, from 773 deaths for every 100,000 babies born in 1984 to 380 in 1994. Close to 85% of births take place at home, where often two or more people help with the delivery. The 1994 National Health Survey showed that 35% of the births were attended by husbands, another 30% by mothers, and some 10% by relatives and friends. Another 15% were attended by doctors, trained birth attendants, midwives, nurses and health workers. An ongoing pilot project in some districts is providing a "Safe Home Delivery Kit" that contains a piece of soap, gauze, disinfectant, a clean string, a razor blade and a sheet of plastic. Antenatal care is provided by hospitals, BHUs, dispensaries and out-reach clinics. Women who go for check-ups are immunized against tetanus twice, supplied with iron tablets to prevent or treat anaemia, screened for high blood pressure and their urine is tested wherever laboratory facilities are available.

The health centres also help women prepare for a safe delivery and for peri-natal care. Women are encouraged to call for help at the time of the delivery. Yet there is more to be done in order to improve people's access to basic health services. A 1992 study shows that 64% of the women live less than 2 hours' walk away from an outreach clinic, while 10% live 10 or more hours away from any health facility. The full benefits of the rapid decline in infant mortality, meanwhile, are yet to be realized. For instance, it is well established that improvements in child survival precede declines in fertility. The desire to have more children is to an extent a reflection of the need to ensure that at least some survive: it also reflects the need for security in old age. Despite, the fall in IMR, the total fertility rate (TFR) in Bhutan is high at 5.6. But fertility reduction alone is not sufficient to control population. Today, the contraceptive prevalence rate is only around 19% and the government recognizes that this must be stepped up. Along with an expansion in the provisioning of family planning services, women's education also needs to be promoted rapidly. Only then will families be able to make informed choices, and in their own best interest, have smaller families.

Access to Safe Drinking Water

Access to an adequate safe water supply is a vital part of primary health care. It contributes to cleanliness, checks the frequency and severity of diseases and improves nutritional status. Piped water schemes in Bhutan are designed to supply 120 litres per person per day (pppd) in the urban areas and 45 litres pppd in rural areas. An impact study concluded that on an average, users of piped water schemes need about 12 litres pppd inside the house while using another 41 litres pppd at the tap-stand for various other purposes. An extra 69 litres pppd was available, which flowed away unused. Around 65% of Bhutan's rural population have access to safe drinking water.

Access to Basic Education

Bhutan also has a long way to go before achieving universal literacy. Its achievements in the past few decades need to be strengthened and expanded. The adult literacy rate has nevertheless quadrupled in the past twenty years; from an estimated 10% in 1970, it rose to 21.1% in 1984 and to 47.5% in 1994. In the absence of gender disaggregated data, it is difficult to assess the precise extent of gender disparities. However, literacy levels among men are reported to be significantly higher than among women, although women have been catching up with men in recent years in terms of education.

Before modernization began in Bhutan, education within the country was only available in the monasteries. Training was imparted here in religious rituals and also in numeracy, philosophy, astrology, literature and traditional medicine. This tradition continues today, with about 15,000 monks, nuns and Sanskrit pandits scattered all over the country. Some religious institutions receive state support. Overall, planned modern

education was introduced in the late 1950s. In 1959 just 440 students were studying in 11 primary schools. In 1998 there were 322 educational institutions, consisting of 128 primary, 115 community schools, 44 junior high schools, 18 high schools, 1 degree college, 9 specialized training institutes including 2 Sanskrit patshalas, and 7 private schools. There are also 54 non-formal education centres. In 1998 there were 1,00,198 students, including those in non-formal education, and 2,785 teachers. While enrolment has risen to levels where the existing infrastructure may have trouble in meeting the needs, the dropout rate has fallen from 10% in the early 1980s to 4% now. The non-formal education programme caters to those who earlier had no opportunity to attend school.

Primary school enrollment of girls is increasing faster than boys' enrolment. In 1990, the boy - to- girl ratio was 61 to 39. In 1995 it became 57 to 43. Community schools in particular seem to be providing greater access to education for girls, but gender disparities are clearly higher in secondary school and even more in college. In 1998 girls accounted for 45% of the students population. The percentage of girls in Sherubtse College, meanwhile, is 26.7% and about 35% in all other educational institutions. Gender disparities are slowly being reduced in primary school dropout rate.

Free education is provided from the primary to the tertiary level. Besides free tuition, this includes free textbooks and, in some places, meals and boarding facilities. The educational structure consists of one-year P-Primary, 6 years Primary, 4 years Secondary, 2 years Junior College and 3 years degree programme.

During the Seventh Five-Year Plan, annual enrolment exceeded the planned 6% expansion target by 2%. People have begun to value education and look at it as a means to a better life. Pressure for expanding the education system is building up. A 1995 assessment of primary school classroom space indicated that space exists for over 60,000 children, but additional space for 23,000 students is needed between now and the year 2002. Demand will soon outstrip supply. Supply needs strengthening not simply in terms of buildings and teaching materials, but also trained teachers. Bhutan already has taken recourse to commercial borrowing for investment in education. It also plans to charge a reasonable fee from those who can afford to pay as a way of cost sharing. Other plans include improving the educational coverage equitably across the Kingdom, upgrading teachers' training, involving communities in construction, maintenance and management of schools, and improving the cost-effectiveness in the delivery of educational services.

Bhutan has always faced a shortage of teachers, and the gap has been met by a large number of expatriate teachers: 10% at the primary level, 25% at high secondary level and 40% at the secondary level in 1999. The availability of teacher resources has, however, been improving. The two teacher training institutes turned out 487 teachers in 1998 and 713 teachers in 1999 and their capacity is being expanded during the Eighth Five-Year Plan. Even so, the shortage is likely to persist, especially as the country gears up to expand vocational and higher education.

Setback to Human Development

The adoption of planned socio-economic development in the early 1960s brought very visible improvement in quality of life for the Bhutanese people. The initiation of planned development also tremendously increased the scope and number of development-oriented activities in the country. Thousands of labourers of mostly Nepalese origin were brought into construct roads and implement other development programmes because they was an acute shortage of manpower. In addition, there had been an influx of illegal economic migrants through Bhutan's open and porous borders in the south. Government effort to stem illegal immigration through Bhutan's first detailed census in 1988 were opposed by a nexus of illegal immigrants and vest interested groups whose declared objective has been taking over of political powers in the kingdom. In the aftermath of numerous acts of violence and disturbances that followed, many from the southern Bhutan left the country. Many emigrated

voluntarily despite Government requests to remain, while others were induced, coerced or threatened to leave the country by dissident elements.

An estimated 90,000 people are reported to be in camps in eastern Nepal. The Government of Bhutan and Nepal established a Joint Ministerial Committee in 1993 to work toward a resolution of the refugee problem. The 8th round of Joint Ministerial Committee was held in September 1999 in Kathmandu, and steady progress is being made in search of a durable and comprehensive solution.

The disturbances and problems in the southern Dzongkhags led to the closure of 76 out of 114 schools for security reasons. As many as 30 schools, 12 Basic Health Units and other infrastructure facilities were destroyed by dissident elements. However, despite the risks involved the Government kept open more than 76 schools, 89 health centres and other infrastructure facilities. Development activities have now been fully resumed on the insistence of His Majesty the King.

Gender Equality

Gender-disaggregated data on human development indicators are not readily available. Female foeticide, female infanticide and deliberate neglect of a girl child are common occurrences in most South Asian countries, but not in Bhutan. Here, infant mortality for females (67 deaths per 1000 live birth) is lower than that for males (75 deaths per 1000 live births). Parents do not have strong gender preferences and treat girls and boys equally. Most surveys report a higher proportion of women than men in Bhutan. According to the 1984 Demographic Sample Survey that covered rural households, there were 102.6 women for every 100 men in the country. The 1994 National Health Survey reported a female-to-male ratio of 108.8 girls for every 100 boys in the age group of 5 to 14 years, and a ratio of 102.2 women for every 100 men in the age group of 65 years and older.

In many South Asian countries, usage of the health care system is dominated by boys, suggesting a strong anti-female bias. Again, this is not the case in Bhutan. Gender relations in Bhutan tend to be more egalitarian and less inhibited than in many other societies. Often the gender roles overlap and the head of the family can depend simply on who is most capable. A household short of women may have a man taking care of the household chores and children. Bhutanese women enjoy considerable freedom and are treated equal to men under the law. There is no overt discrimination on the basis of gender. Women's role is as vital as men's in the rural and urban economy, and they are actively involved in all areas of economic, political and social life. Much of the retail trade is controlled and managed by them. In the political forum, women attend most public meetings and important district meetings. Their participation in the decision-making fora such as Zomdus (community meetings) at the grassroots level is as high as 70%, and they participate actively in the other decision-making fora like district and block level development committees is greatly promoted. The placement of women in the higher strata of government is being encouraged, with 9 women people's representatives in the National Assembly, the highest Legislative body of the country, being a clear indication of this.

In the past, however, did not occupy many high Government posts. This partly reflects the low recruitment in the earlier years because of the availability of fewer educated women. This was a result of physical constraints that made educational institutions, mostly outside the country, almost inaccessible to Bhutanese students especially girls. The future will probably be different. Women form 19% of the civil services sector and are opting to become doctors, mechanics, engineers, entrepreneurs and decision-makers. The female representation is particularly notable in institutes such as Teacher Training College, National Institute of Education and Royal Institute of Health Sciences.

The law in Bhutan treats men and women equally. The law of inheritance, for example, reserves equal rights

for all children, irrespective of sex and age. In fact, the predominant inheritance laws are particularly favourable to women. Daughters are known to inherit all the family property, and sons move in with their wife's family. However, in practice, traditional systems operate and these practices are informal, flexible and circumstantial. For instance, if a man marries into a family that has large land holdings but is short of manpower, he will live with the bride's family and not ask, or receive, a share of land from his family. This is so with women as well. The bride or bridegroom who moves into the home of the spouse enhances the productivity of the household and seeks no other compensation. When family property is divided, the share given each child may vary because parents' decisions are often guided by the relative need of each child. In most parts of Bhutan, the social custom favours women's interests.

In matters of marriage, both men and women enjoy equal freedoms to choose their partners. The practice of dowry, characteristic of many Asian societies, is unknown in Bhutan. There is no social stigma attached to divorce, and women having children outside of marriage are not looked down upon. All couples are encouraged to obtain a legal "marriage certificate" from the Court. Both partners can initiate divorce proceedings. If wrong doing by either partner is cited as a reason for divorce and guilt is established, the guilty partner receives only one-third of all properties and assets held individually or jointly. Mothers are awarded custody of children under the age of nine years, regardless of who bears guilt of separation. During this period, child support is provided by the father, which is 20% of his monthly income until the child attains 18 years of age. After the age of nine, the children are free to choose to which parents to live with. Legislation for ensuring equal treatment for men and women continues to evolve and develop as people encounter new situations.

Governance and Decentralization

In addition to promoting social and economic opportunities for its people, Bhutan also has striven to improve its system of public administration and local governance. The Royal Government embarked on the process of decentralization under the Royal initiative of His Majesty the King. The establishment of Dzongkhag Yargye Tshogchung (DYT) in 1981 and Geog Yargye Tshogchung (GYT) in 1991 has helped tremendously in the decentralization process in Bhutan.

The Tshogdu consists of 150 members; 105 are elected representatives of the people, 10 are from the Dratshang and 35 are nominated representatives of the Royal Government. The people's representatives are directly elected by the people of their respective constituencies through secret ballot. The representatives of the clergy are elected by the Zhung Dratshang (Central Monastic Body) and the concerned Rabdeys (District Monastic Bodies). The representatives of the government are nominated by His Majesty the King from among senior civil servants. All members except the representatives of the clergy, who serve for one year, serve a term of three years. The Speaker and the Deputy Speaker are elected by the National Assembly from among the members.

The Lodey Tshogdey (Royal Advisory Council), formally established in 1965, advises His Majesty the King and the Ministers, and monitors the implementation of policies and programmes approved by the National Assembly. The Council consists of nine members. Six are representatives of the public (Meeser Thuepoens) and are elected in the National Assembly from among the representatives of the 20 Dzongkhags (districts). Two members represent the Central Monastic Body, and the chairman is nominated by His Majesty the King.

Planning and all development activities in Bhutan, as in most other countries, were initially centralized. The Royal Government set development priorities, designed programmes and monitored performance. In the early 1980s, this began to change. Recognizing the importance of people's participation in the development process, His Majesty the King initiated a decentralization policy to promote people's participation in the development planning and implementation. Administration and planning began to get decentralized, meaning that

development in each district could be planned based on the needs and resources of the local people. The 560 elected members of the Dzongkhag Yargye Tshogchung are responsible for proposing their own development plans, and submitting them to the Royal Government. To finalize these plans, His Majesty the King personally leads planning teams to the Dzongkhags, holds detailed discussions to reach conclusive decisions in consultation with the people.

In 1991 His Majesty the King reconstituted the national Planning Commission and handed over the chairmanship to the Planning Minister to ensure greater decentralization in the decision-making process. A Technical Committee of 21 heads of departments and other senior officers was set up to lend professional support to the Planning Commission and to promote greater participation of Government agencies. In the same year, as noted above, the His Majesty established the Geog Yargye Tshogchung (GYT), in all 202 geogs, with 2859**** elected members. These Committees are headed by gups (village leaders) and are responsible for assessing local needs, determining priorities, deciding on programmes, and monitoring progress of all development activities in their geogs. The gups also are responsible for collection of taxes in rural areas, mobilization of resources for community services, settlement of local disputes, maintenance of water supply and supervision of social services. With the dissolution of the Lhengyel Zhuntshog by Royal Decree in 1998 to bring changes to the governance system in the kingdom, the Planning Commission was reconstituted with 17 members appointed based on their professional and individual capacity.

Under the current governance, consolidation of the judicial, the legislative and executive arms of the state have been emphasized. His Majesty the King further initiated the major reforms and issued Kasho (Royal Edit) during the 76th National Assembly in 1998, culminating in devolution of all executive authority to the elected Council of Ministers. The Ministers were mandated to take the nation forward into new era of governance and enhance efficiency, improve transparency and ensure accountability in the Bhutanese System.

This process of steady decentralization has enabled Bhutan to ensure a system of government that enjoys the mandate of the people, provide clean and efficient governance. The momentous changes in the structure of the government in 1998 kept human development and happiness focussed and the Royal Government playing an active role in mobilizing and managing resources, extending technical support and creating an enabling environment for local governance. The result has been to expand human capabilities and increase opportunities for people in many different spheres of life.

Chapter 3

ECONOMIC GROWTH AND HUMAN DEVELOPMENT

Over the years, Bhutan has developed a unique approach to development. Deeply ingrained in policy-making is the idea that development is not only about material progress and accumulation of wealth. The country is very conscious about the negative consequences of unchecked commercial expansion. People, their needs, well-being and happiness are central to all development efforts. In addition, there is a strong recognition that human progress should advance not merely people's physical standards of living, but also their emotional and spiritual well-being. Ensuring compatibility of development efforts with the people's socio-cultural traditions is regarded as essential for ensuring sustainable development. Every effort is made to weave human conservation into the process of economic growth. Conservation is not narrowly confined to issues of the environment, but is typically interpreted to include Bhutan's cultural traditions and human values.

As has been seen, policy makers in Bhutan are concerned more with the quality of development than with its pace. A conscious effort is made to take a long-term view rather than adopt policies that may result in short-term gains. The quest is to strike a balance between the forces of development, such that they enrich the lives of people. These principles are reflected in number of measures that the country has taken to promote economic growth and human development.

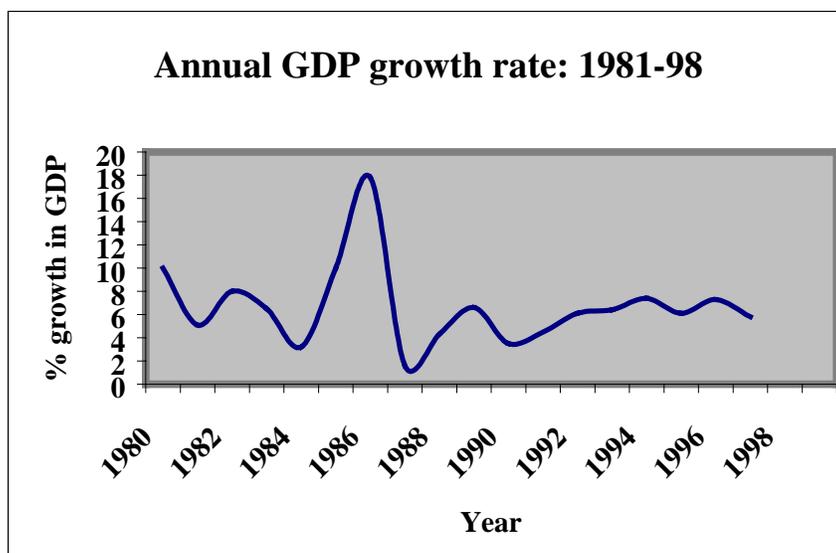
Growth-Mediated Security

The process of planned development was strengthened with the inauguration of the Planning Commission in 1971. Planning received a further impetus in 1974 when, during the Coronation Ceremony that June, His Majesty the King identified the achievement of economic self-reliance as the most important task before the country. He defined national self-reliance to mean, in the Bhutanese context, the ability "to stand on one's own feet, have the power of decision in one's own hands, and not be dependent on others."

Detailed time series data with respect to major macroeconomic variables are not available for the period before 1980. Between 1980 and 1998, however, Gross Domestic Product grew steadily, averaging 6.7%. In the 1980s alone, GDP grew at an even higher average of 7.3% per annum, with income almost doubling between 1980 and 1989. The economic growth slowed between 1990 and 1998 but remained high nonetheless, averaging 5.9% per annum.

A marked change also has occurred in the composition of GDP. In the early 1980s, agriculture, livestock, forestry and fishing, along with trade, were the main sectors, accounting for more than two-thirds of the country's GDP. By 1990, their share had declined to 42.7%, and now they accounts for only 36.7% of the country's GDP. During the 1980s, the country began to develop the enormous hydropower potential arising out of the steep southern watershed of the Himalayas. A surge occurred in hydropower development and establishment of associated industries in the second half of the decade. In 1986, the country's first major hydropower project in Chukha went into production, enabling the export of power to India and the setting up of energy-intensive industries in the country.

Figure 5:



Source: Royal Government of Bhutan

As a result, the share of mining, manufacturing and electricity soared from 4% of GDP in 1980 to 24.5% of

GDP by 1998. The slowing down of the growth in the 1990s is partly attributable to the fact that no new hydropower or industrial projects have come on stream since 1990.

Between 1990 and 1998, mining and quarrying recorded the maximum growth, 12.3% per annum. This was followed by the manufacturing sector, which grew annually by 11.1% during the same period. Agriculture and allied activities recorded the slowest annual growth, 3.2%. The generation of economic growth by itself does not guarantee an expansion in human development. Neither has the conversion of economic growth into improved human development taken place automatically in Bhutan. A set of conscious policies have made investment in people the top priority.

Every effort has been made to channel economic growth for ensuring universal access to basic health, education and essential social services. Today, almost every Bhutanese family has shelter

Table 3: Composition of GDP

	(% of real GDP)		
	1980	1990	1998
Agriculture, livestock, forestry & fishing	55.7	42.7	36.7
Mining and quarrying	0.6	0.9	2.4
Manufacturing	3.2	8.1	11.1
Electricity, water and gas	0.2	7.8	11.0
Construction	7.9	8.1	10.6
Wholesale & retail trade, Restaurant & hotels	10.9	6.6	7.0
Transport, storage & communications	4.3	7.1	7.5
Financing, insurance & real estate	6.3	7.7	5.1
Community, social & personal services (Govt)	10.8	11.0	8.6

Source: Central Statistical Organization (CSO)

and access to land holdings, as well as free education and medical services. An effective primary health care system is in place that provides access to 90% of the population. An extensive outreach system has been designed that ensures, often through the use of satellite communication, that help is made available as soon as possible to residents even in remote hilly villages. Provisioning of safe water, immunization of children, iodination of salt, promoting public hygiene and ensuring effective sanitation have all been priorities. (See Box 4.)

Household sanitation

In Bhutan, 70% of the population has access to sanitation. Sanitation is an area of development where a simple low-cost intervention can make a big difference to the general level of hygiene. But attitudinal problems have proved to be stumbling blocks in most places. Not so in Bhutan.

In 1992, realizing the importance of sanitation, His Majesty the King issued a "Kasho" or Royal Decree stating that every household must construct and use at least a simple pit latrine. By 1994, 90% of urban areas and 66% of rural areas had at least a pit latrine, resulting in a national coverage of 70%. Almost 70% of latrine owners say that it was the Royal Decree that made them build their latrine, but they also said that a concern for hygiene was a major factor.

The priorities given to improvements in the living conditions of people is reflected in the expenditure patterns of the country. During the First Five Year Plan, 59% of the expenditures were incurred on public works for the creation of necessary infra-structure. Since then a steady decline in the allocations for public works has occurred, and during the Seventh Plan only about 8% of the development outlay was earmarked for the purpose. Allocations to health and education went up from about 12% during the First Plan to 27% during the Second and Third Plan; they were around 7% during the Fourth Plan but declined to 13% during the Fifth Plan and 12.4% during the Sixth. In the Seventh Plan, once again, allocations to health and education went up, to nearly 18%. The Eighth Plan (1997-2002) reflects a 58% increase in allocations to social sector development.

Financing of Development

Opening up to the forces of modern development automatically meant breaking barriers, accepting foreign aid and expanding trade. In 1961, Bhutan's first big step towards development was its roads, which were built with India's assistance. Bhutan's first two Five-Year Plans were wholly financed by the Government of India through grants. Bhutan also developed its hydropower potential and its industrial base in collaboration with the Government of India. Gradually, other donor countries began to extend support and the share of aid from India started declining. After Bhutan joined the United Nations in 1971, UNDP and other UN agencies, the World Bank and the Asian Development Bank began to assist the country. Aid also came from major bilateral donors such as Japan, Switzerland, Denmark, Germany, Austria and the Netherlands. By 1984, 71% of the country's revenues consisted of grants and India's share had come down to roughly 50% of total grants.

In 1998, exports accounted for 30.3% of GDP and imports for 38.6%. India continues to be Bhutan's most important trading partner, buying 94% of all exports and accounting for 71 % of all imports in 1998/99. Trade between the two countries is without any tariffs.

While Bhutan relied primarily on foreign aid for its development until 1987, the domestic resource mobilization prospects drastically improved with the commissioning of the Chukha hydropower project that year. Bhutan and India entered into an agreement for developing Chukha on a grant-cum-loan basis, under the energy buy-back arrangement, for 99 years; electricity generated by Chukha but not consumed within Bhutan is thus exported to India. In 1993, about 90% of the electricity generated by Chukha was exported to India; Bhutan's revenues doubled between 1985/86 and 1987/88. By 1998/99, Chukha was accounting for almost 35% of total internal revenue generated.

In the early 1980s Bhutan's external debt was negligible, but because of loans for developing the power sector,

the total outstanding debt had risen to US\$133 million by 1994. Since then, debt has been gradually declining, with debt service payments falling to 6.8% of exports of goods and services in 1997-98.

Options for domestic resource mobilization through taxation have been limited in the country; its tax-to-GDP ratio has been increasing steadily since 1990, to about 8% in 1998. Consequently, the Bhutan has relied on grants and, more recently, on export of electricity. In 1996, grants amounted to 24.7% of the country's GDP and 46.7% of the total revenues.

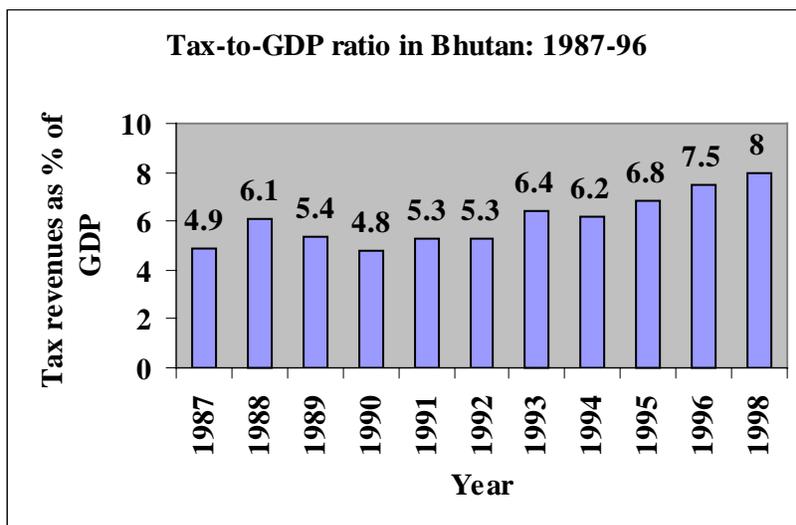


Figure 6:
Source: Royal Government of Bhutan

With little scope to increase domestic taxes, the recurrent budget requirements, especially for the social sectors, are under considerable strain. Bhutan is conscious of its reliance on foreign aid. At the UN's Sixth Round Table Meeting (1997), the Royal Government asserted that it would continue to strive for self-reliance and a reduced dependence on external aid. In keeping with Buddhist values, need rather than greed has been the guiding principle in this regard. Bhutan has used a mix of local revenue mobilization, foreign aid and international loans to finance its development. The reliance on foreign grants does seem large, but it is also consistent with an environmentally conscious global philosophy that recognizes the international significance of Bhutan's environmental wealth and the need to conserve it. There is, however, additional potential for revenue mobilization from the further expansion of hydropower projects, which the Government has not yet tapped.

Preventing Rather than Correcting Market Failures

One of the most salient features of development in Bhutan has been prevention of market failures so that the question of correcting them does not arise. The effort to preserve and augment the country's environmental resources is a striking example. Recognizing the global responsibility placed upon Bhutan as one of the world's ten ecological "hotspots", every effort has been made to prevent excessive deforestation and logging. The Royal Government has set the minimum forest coverage at 60% of the country, monitoring deforestation and reforestation activities very closely.

Despite the tourist potential that exists, the Government is cautious about making tourism a major source of revenue. Being fully aware of the negative externalities of tourism, it wants to protect the environment,

reduce the danger of illegal trade in artifacts and prevent the Bhutanese culture and the way of life from being destroyed. Although there are no official limits on the number of tourists, such arrivals are regulated by price. Nonetheless, the number of tourists visiting Bhutan has increased from 1,538 in 1990 to 5,365 in 1997 and 7174 in 1998, with steady improvement in the facilities and infrastructure. However, the contribution of tourism to the economy remains modest and the total tourism receipts amounted to US\$6.5 million in 1997 and US\$8.7 million in 1999, of which one-third was collected as Government royalties.

Similarly, the Royal Government plans to build and develop growth centres in rural areas as a strategy to check rural-urban migration. It is a way of preventing problems of congestion, pollution, crime, homelessness and so forth that typically result from rapid urbanization and excessive migration. To sum up, in many ways, Bhutan's approach to development is judicious and conservative. It is guided by a long-term vision of human security in which benefits of economic growth are consciously channeled to meet the most basic requirements of its people.

Chapter 4

CHALLENGES AND EMERGING OPPORTUNITIES

Bhutan has so far successfully managed the process of development and ensured a harmonious balance between modern economic forces, traditional social values and the natural environment. But as the country enters the next phase of development, it faces a set of new challenges. Till now, the development effort was, to a large extent, limited to basic tasks like building infrastructure, constructing roads and opening health care centres and schools. Today, this physical foundation is largely in place. Now, the focus has to be on ensuring that the public provisioning of basic social services is of good quality, and at the same time is equitable and efficient. Already, the public outlay on health, education, water supply and sanitation accounts for more than 20% of the Government's expenditure. But as the population increases, and more and more people expect to have improved access to these basic social services, the burden on the exchequer can only increase.

Population Growth

If the rate of population growth of 3.1% per annum is maintained, then the country's population is likely to double by the year 2020. Apart from the implications this holds for the availability and quality of basic social services, this is also likely to pose a serious threat to Bhutan's environmental resources. Many forest areas already are under heavy pressure for exploitation for fuel, timber and other wood products. The need for more grazing lands also could come into conflict with the goal of protecting forestlands.

As in all developing societies, the surge in Bhutan's population growth is the result of a steep fall in the death rate, itself a testimony to the success of health care policies adopted in the last four decades. However, the fall in the death rate has not been accompanied by a lower birth rate. To control the population growth rate, therefore, family planning activities has been stepped up, including the supply of contraceptives, the dissemination of information on family planning and the expansion of maternal and child health care facilities.

Education and Empowerment of Women

Simultaneously, although gender disparity is less marked in Bhutan than in the rest of South Asia, every effort has been made to encourage educational attainment among women. Around the world, a fall in fertility rates has been linked to the education and empowerment of women, in addition to, of course, improved reproductive health care and economic security.

Rising Aspirations of the Educated Youth

Social transformation goes hand in hand with economic change. The spread of modern education already is creating a class of young people who no longer fit in with the traditional rural lifestyle. In the next five years alone, around 50,000 young people will leave school and enter the labour market. Also five years from now, more than 100,000 children will be enrolled in primary school. With 42% of the country's population being younger than 15, creating appropriate employment opportunities that meet the rising aspirations of the younger generation will be a major challenge. To meet this challenge, a National Employment Board has been created, which will be predecessor to the Ministry of Labor. This board is mandated to coordinate and facilitate employment, recruitment and job market research for employment as well as regulate policies related to the conditions of employment.

Encouraging the Growth of the Private Sector

At present, the government is the major employer in the country, and civil service jobs are coveted badges of honour. But the civil service is already showing signs of saturation, while the nascent private sector is in no position to absorb the thousands of job aspirants. The Government therefore needs to encourage the private sector to play a more meaningful role in the country's development; this would create more jobs in business and industry and ease the employment pressure on the Government. However, the Government first of all must expand opportunities for market development, followed by higher investments in infrastructure, banking, communications and transportation. Bhutan today has 3,636 kilometres of road network, 7,445 telephone connections and 105 post offices covering almost all Dzongkhags.

Private-sector employment also would require an appropriate match of technical and vocational skills with job needs and opportunities. The issue of quality and content of education therefore must be urgently addressed so that country is equipped to take major strides in fields like energy, forestry, agriculture and chemicals. Greater focus must be given to develop strategies for promoting private sector development and enhanced through adequate provision of financial support, legal protection and licensing.

Redefining the Role of the Government

If the private sector is to become an engine of economic growth, the government will need to redefine its role from that of "provider" to "enabler" of development. Social protection and security will, of course, remain the state's primary responsibility, but civil servants must be less of regulators and more of development administrators. The mission must be to further the process of decentralization already set into motion. This should strengthen the mechanisms of local governance and generate more community participation in decision-making. The objective should be to develop a system of governance that enlarges opportunities for people at all levels to participate more fully and effectively in decisions that have a bearing on their lives, livelihoods and the future of their families, communities and nation. It is with this aim that the Bhutanese System was restructured in 1998 under the Royal Decree and reform was initiated to review, rationalize and find solutions that will help to redefine role of the state. In addition, the government has initiated the development and design of the National Standardized and Computerized Monitoring and Evaluation System. Steps also have been taken to develop a Computerized National Planning Information System to support efficient decision-making in development planning and in complementing the M&E System at the same time.

Rapid Urbanization and Migration from Rural Areas

Largely because of the increasing migration from rural to urban areas, cities are expanding at an extraordinary pace. Thimphu's population is growing annually by an unprecedented 10%. Poorly equipped to deal with this

influx of migrants, the urban areas are witnessing severe constraints of housing, water and sanitation. Vehicular pollution is increasing rapidly. Systematic urban planning is urgently needed. Rather than seeking to reduce the overall urbanization rate, the challenge is to redistribute urban growth, recognizing, however, that rural urban migration has positive effects too. Most important, it can ease the pressure on available agricultural land, most of which has already been brought under cultivation. Migration may slow the trend towards fragmentation of land holdings, thereby facilitating increasing mechanization that would, in turn, increase productivity. On the other hand, increased productivity also could result in labour displacement, fuelling rural-urban migration. Realizing the adverse effects of the migration, the Government has taken initiatives to step up the measures to meet the challenges comfortably. The Division of Urban Development and Housing has been created, and new urban centre have been identified.

Rural Development

Managing rural development, then, is as important as managing urbanization, because it can help curb the drift to the cities, especially of the educated. Apart from initiating growth centres and a decentralized system, which allows rural communities to plan their own growth, efforts must be made to further improve basic living standards in rural areas. This includes ensuring effective and accessible health services, income generating agricultural and cottage sector programmes, better transport and communications and wider access to electricity and safe water.

Environmental Conservation

Bhutan has successfully managed to conserve its natural resources till now, but the forces unleashed by development - be it urbanization, industrialization or even the provision of infrastructure like roads and sewage pipes - will inevitably strain the fragile environmental balance of this mountainous kingdom. Still, during the pursuit of economic growth, every effort has been made to ensure that the process of modernization does not unduly compromise the country's rich natural resources. As much as 72% of the land is under forest cover, and it is the Government's policy to maintain a minimum of 60% as such forever. To prevent over-exploitation of Bhutan's natural resources, the government has deliberately chosen to forego immediate economic gains from the indiscriminate development of sectors like tourism and mineral quarrying. This judicious approach is bound to pay dividends in the long run, because it will ensure the sustained growth of these industries. Bhutan's abundant water resources also are a potential source of revenue. It has been estimated that the country's four major rivers can generate 30,000 MW of electricity. Indeed, the hydropower sector has the highest potential for revenue generation.

Cultural Identity and Traditional Values

As economic and social transformation gathers momentum and Bhutan becomes increasingly integrated with the outside world, people's life-styles are changing along with family structures. Assimilating these changes without losing the country's unique cultural identity is one of the main challenges facing Bhutan today.

Recognizing that there is no automatic link between economic growth and human development, the government has initiated several policies that have led to the enhancement of human capabilities in Bhutan by promoting opportunities in all spheres of life. But now that the time has come for the nation to consolidate these gains: Choices need to be made in varied fields involving a careful assessment of trade-off and opportunity costs. What is important, as always, is not to lose sight of a national sense of peace, happiness and security.

In the 11th Century, the great Buddhist's master Milarepa wrote:

"There are in the heart of the vast Himalayas some strange market places where one can barter the whirlwind of life for infinite wisdom." Bhutan is acquainted with these market places - but how well a kingdom manages them will determine its future.

Technical Appendix A¹ Computing the Human Development Index for Bhutan

The Human Development Index (HDI) is based on three indicators: longevity, as measured by life expectancy at birth; educational attainment, as measured by a combination of adult literacy (two-thirds weight) and combined primary, secondary and tertiary enrolment ratios (one-third weight); and standard of living, as measured by real GDP per capita (PPP\$).

Fixed minimum and maximum values

To construct the index, fixed minimum and maximum values have been established for each indicators:

- Life expectancy at birth: 25 years and 85 years
- Adult literacy: 0% and 100%
- Combined enrolment ratio: 0% and 100%
- Real GDP per capita (PPP\$): PPP\$100 and PPP\$40,000

For any component of the HDI, individual indices are computed according to the general formula:

$$\text{Index} = \frac{\text{Actual } x_i \text{ value} - \text{minimum } x_i \text{ value}}{\text{Maximum } x_i \text{ value} - \text{minimum } x_i \text{ value}}$$

If, for example, the life expectancy at birth in a country is 65 years, the index of life expectancy for this country would be:

$$\text{Life expectancy Index} = \frac{65 - 25}{85 - 25} = \frac{40}{60} = 0.667$$

Treatment of income

Constructing the income index is a little more complicated. Income enters into the HDI as a surrogate for all the dimensions of human development not reflected in a long and healthy life and in knowledge – in a nutshell, it is a proxy for a decent standard of living. The basic approach in the treatment of income has been driven by the fact that achieving a respectable level of human development does not require unlimited income. To reflect this, income has always been discounted in calculating the HDI.

¹ See also *Technical Note in 1999 Human Development Report. The Human Development Index for Bhutan has been constructed on the basis of data available with the Royal Government of Bhutan. Technical Appendix 2 discusses the database and sources for human development indicators in Bhutan.*

Accordingly, income is treated using the following formula:

$$\text{Index} = \frac{\log y - \log y_{\min}}{\log y_{\max} - \log y_{\min}}$$

The actual construction of the HDI for Bhutan for 1984 and 1998

Values of the HDI components for Bhutan

	Life expectancy (years)	Adult literacy enrolment (%)	Combined per capita ratio (%)	Real GDP (PPP\$)
1984	47.4	23.0	24.5	901
1991	56.0	35.2	33.2	1,235
1994	66.0	47.5	39.0	1,338
1998	66.0	54.4	44.0	1,496

Life expectancy index

$$\text{Bhutan (1984)} = \frac{47.4 - 25}{85 - 25} = \frac{22.4}{60} = 0.373$$

$$\text{Bhutan (1991)} = \frac{56.0 - 25}{85 - 25} = \frac{31.0}{60} = 0.517$$

$$\text{Bhutan (1994)} = \frac{66.0 - 25}{85 - 25} = \frac{41.0}{60} = 0.683$$

$$\text{Bhutan (1998)} = \frac{66.0 - 25}{85 - 25} = \frac{41.0}{60} = 0.683$$

Adult literacy index

$$\text{Bhutan (1984)} = \frac{23.0 - 0}{100 - 0} = \frac{23.0}{100} = 0.230$$

$$\text{Bhutan (1991)} = \frac{35.2 - 0}{100 - 0} = \frac{35.2}{100} = 0.352$$

$$\text{Bhutan (1994)} = \frac{47.5 - 0}{100 - 0} = \frac{47.5}{100} = 0.475$$

$$\text{Bhutan (1998)} = \frac{54.0 - 0}{100 - 0} = \frac{54.0}{100} = 0.540$$

Combined primary, secondary and tertiary enrolment ratio index

$$\text{Bhutan (1984)} = \frac{24.5 - 0}{100 - 0} = \frac{24.5}{100} = 0.245$$

$$\text{Bhutan (1991)} = \frac{33.2 - 0}{100 - 0} = \frac{33.2}{100} = 0.332$$

$$\text{Bhutan (1994)} = \frac{39.0 - 0}{100 - 0} = \frac{39.0}{100} = 0.390$$

$$\text{Bhutan (1998)} = \frac{44.0 - 0}{100 - 0} = \frac{44.0}{100} = 0.440$$

Educational attainment index

$$\text{Bhutan (1984)} = \frac{2(0.230)/3 + (0.245) / 3}{3} = 0.235$$

$$\text{Bhutan (1991)} = \frac{2(0.352)/3 + (0.332) / 3}{3} = 0.345$$

$$\text{Bhutan (1994)} = \frac{2(0.475)/3 + (0.390)/3}{3} = 0.447$$

$$\text{Bhutan (1998)} = \frac{2(0.540)/3 + (0.440) / 3}{3} = 0.507$$

Adjusted real GDP per capita (PPP\$) index

The adjusted real GDP per capita for Bhutan would be:

$$\text{Bhutan (1984)} = \frac{\log(901) - \log(100)}{\log(40,000) - \log(100)} = 0.367$$

$$\text{Bhutan (1991)} = \frac{\log(1,235) - \log(100)}{\log(40,000) - \log(100)} = 0.420$$

$$\text{Bhutan (1994)} = \frac{\log(1,338) - \log(100)}{\log(40,000) - \log(100)} = 0.433$$

$$\text{Bhutan (1998)} = \frac{\log(1,496) - \log(100)}{\log(40,000) - \log(100)} = 0.460$$

Human development index

The HDI is the simple average of the life expectancy index, educational attainment index and the adjusted real GDP per capita (PPP\$) index. It is calculated by dividing the sum of the three indices by 3. The HDI for Bhutan for 1984, 1991, 1994 and 1998 were calculated as follows:

	Life expectancy index	Education Index	GDP index	Sum of the indices	Human Development index
1984	0.373	0.235	0.367	0.975	0.325
1991	0.517	0.345	0.420	1.282	0.427
1994	0.683	0.447	0.433	1.563	0.521
1998	0.683	0.507	0.460	1.743	0.550

Discrepancies exist in the values of the indicators used by the global Human Development Report and those used by the RGoB. The main differences are the following:

Values of the HDI indicators for 1997:

	Global 1999 Human Development	Royal Government Report of Bhutan
Life expectancy at birth (years)	60.7	66.1
Adult literacy (%)	44.2	54.0
Combined enrolment ratio	12.0	72.0
Real GDP per capita (PPP\$)	1,467	1,534
Human Development Index	0.459	0.550

The difference in life expectancy is due to the different sources being used for estimation. The RGoB estimate is based on the most recent demographic survey carried out in Bhutan, whereas the UN's estimate is based on demographic projections. A big difference also occurred in the combined enrolment rate. The UN figure of 12% is unrealistically low; this is due to the population total of 1.9 million used for the calculation.

Technical Appendix B

Note on Human Development Indicators for Bhutan

The preparation of Bhutan's first Human Development Report has served several useful purposes. The Report presents to the reader a picture of the state of human development in the country and the progress made since 1961. Discussions held during the preparation of the Report were helpful not only in reviewing achievements and shortcomings, but also in identifying several areas for more careful analysis. But most significantly, the exercise drew attention to the limited availability of good - quality data on human development indicators, and to the severe constraints that this imposes on

planning, programme development and policy formulation. This has prompted the Royal Government to initiate action to review and strengthen the country's national statistical base.

Like many developing countries, Bhutan's database for assessing levels of human development is weak. Practically no quantitative data on socio-economic conditions are available for the period before 1960. Several efforts have been made to collect data on living conditions after the country began the modern development in 1961. However, these studies could not be carried out systematically and periodically because of various constraints, most notably the absence of sufficiently trained manpower. As a result, the surveys vary in coverage, quality and usefulness. Results of different surveys are not comparable because the sampling design and methodologies also tend to differ from one to another. This greatly limits the ability to monitor trends and progress.

Carrying out socio-economic surveys in Bhutan poses several challenges. The country's small population (estimated at 636,499 in 1998) means there is a limit to the availability of resources necessary to field large scale surveys needed to estimate many indicators, disaggregated by gender, class, ethnicity, income and expenditure groups, and geographical locations. In addition, the country's mountainous topography and the widely dispersed pattern of human settlements make the task of the field investigator extremely difficult. An otherwise simple household-level cluster survey becomes very arduous and complicated when there are often only four or five households per village, where a village could be several days walk from the nearest motorable point, and when walking from one household to another could mean climbing steep slopes. Nonetheless, these physical constraints do not justify the non-availability of systematic disaggregated data on human development. On the contrary, they point to the need to devote additional resources, technical expertise, time and effort for data collection.

This brief note discusses some of the data sources and problems concerning Bhutan's human development indicators.

Population:

A significant discrepancy exists between the population totals reported by the United Nations and those provided by the Royal Government of Bhutan. The estimates of the United Nations place Bhutan's population at 1.9 million in 1997. The UN's estimate is a projection based on RGoB's estimate of 1.035 million in 1969.

The Royal Government had estimated Bhutan's population for 1998 to be 636,499. Estimates for previous years are as follows:

Estimated population

1984	452,000
1985	460,278
1986	468,708
1987	477,292
1988	486,034
1989	494,935
1990	504,000
1991	518,000
1992	533,000
1993	548,000
1994	564,000
1995	582,000
1996	600,000
1997	618,557
1998	636,499

Efforts have been initiated by both the Royal Government and the United Nations to reconcile these figures and validate the new population totals for Bhutan. The World Bank, in its computation of per capita GNP for Bhutan, takes into account the lower population total provided by RGoB, whereas for other calculations (such as enrollment rates), the UN continues to use the UN estimate of 1.9 million for 1997. No official figures are available for some vital aspects of Bhutan's population, including rural and urban totals and district level totals.

Demographic and health surveys

Bhutan has yet to institute a comprehensive system of vital registration that can provide complete and accurate data on births and deaths. The RGoB recognizes the importance and the need for a system of sample registration that periodically gathers data on birth and death rates, causes of death, fertility and infant mortality for the country.

The first systematic survey to obtain demographic data was conducted by the Central Statistical Organisation, Planning Ministry and the National Institute of Family Health between June and August 1984. This was an ad hoc demographic sample survey based on a two-stage sampling procedure, with the sample size fixed at 5% of total population in each Dzongkhag (District). Forty percent of the 56,205 individuals enumerated during the survey were 14 years and younger, 56% age 15 to 65 and the remaining 5% older than 65. This Survey updated earlier data on age composition, mortality, fertility and other demographic indicators. (See Table.)

Other sample surveys covering some of the indicators have been conducted since 1984, but these have not been nationally representative. In 1991, a demographic mortality survey was undertaken in rural areas of 13 Dzongkhags. A total of 1868 households with 12,375 persons, including 3,163 women in the reproductive age group (15 to 49), were enumerated.

The National Health Survey conducted in 1994 by the Health Division and the Central Statistical Organization, with technical support from SEARO and funding support from WHO, is the other recent source of demographic data. The objectives of the Survey were to (a) estimate with reasonable confidence national rates of infant mortality, under-five mortality, total fertility and contraceptive prevalence; (b) determine the age and sex distribution of the study population; (c) determine the maternal mortality rate for the study population; and (d)

assess the accessibility and utilization of health care services. A stratified two stage sampling design was adopted for the survey, a total of 11,716 households with 63,890 household members were enumerated. The results provide estimates of population growth rates, infant and maternal mortality rates, crude birth and death rates, and fertility rates.

Comparative results for 1984 and 1994 national surveys

Sample population and selected health indicators for 1984 and 1994, with the number of persons enumerated, are as follows:

Sample population & selected health indicators for sample populations	1984	1994
Persons enumerated:		
- Total	56,205	63,890
- Males	27,747	30,440
- Females	28,458	33,450
Sex ratio: males per 100 females	97.5	91.0
Dependency ratio	80	91.7
Live-births for one-year period	2,198	2,543
Sex ratio at birth, males per 100 females	102.0	105.1
Crude birth rate per 1000 population	39.1	39.9
General fertility rate	169.6	172.7
Deaths for one-year period	754	576
Crude death rate per 1000 population	13.4	9.0
Population growth rate	2.6%	3.1%
Infant mortality rate per 1000 live births	102.8	70.0
Under-five mortality rate per 1000 live births	162.4	96.9
Maternal mortality rate per 1000 live births	7.7	3.8

Source: Report on the 1994 National Health Survey, Royal Government of Bhutan, February 1995.

Measuring maternal mortality is very difficult and costly because it involves questions of cause of death, timing of death and pregnancy status at or before the death. This means that even complete vital registration systems under-report and misclassify maternal mortality. An additional problem in ascertaining maternal mortality from

surveys is the extremely large sample size needed to make a reliable estimate of maternal mortality. If, for example, the maternal mortality rate is around 400 per 100,000 live births, a sample that includes about 50,000 live births (and concomitantly more households) is necessary to give an estimate with a confidence interval of plus or minus 20 percent. Such a large survey is clearly not a responsible use of scarce resources, and in Bhutan it is difficult to implement. Notwithstanding the constraints, a Maternal Health Survey with the technical assistance from WHO and UNICEF was conducted in 1994 and MMR was estimated at 380 maternal deaths per 100,000 live births.

It is important to note that with a birth rate of around 40 per 1000 population, there are some 26,000 babies born every year in Bhutan. A MMR of 380 per 100,000 live births implies that there are about 100 maternal deaths in the country, out of the roughly 26,000 deliveries that take place.

Periodic data are published by the Health Division on the functioning of the health system. This typically includes data on the number of health units and hospitals, health personnel, patterns of disease, utilization of health services and immunization coverage. There are, however, reportedly no comprehensive and periodic epidemiological studies, health, nutrition and morbidity surveys carried out in the country.

Educational Statistics

The Education Division, under the Ministry of Health and Education, regularly publishes "General Statistics" on schooling in Bhutan. Data are reported on (a) the number of schools and institutions, (b) number of students and (c) number of teachers. Detailed breakdowns are available on the enrolment and staff in different levels of schools and in institutions. Dzongkhag-wise distribution of school enrolment by gender and classes is also published. Comprehensive data on educational achievements and more reliable level of learning at different stages of schooling have to be enhanced through systematic literacy surveys.

Literacy rates: Based on the small surveys conducted in 1980, the literacy rate (above 6 years) in 1980 at 23% and at 54% in 1994. Interpolating from this trend yields a literacy rate of 29.4% for 1984.

Adult literacy rates: The construction of the HDI requires estimates of adult literacy rate (literacy rates among populations aged 15 years and older). Estimates and recently worked out based on the 1994.

National Health Survey suggest that in Bhutan the population below 6 years of age is 18.7%, between 6 and 14 years is 23.3%, and above 15 years is 58%.

It is estimated that the literacy rate (above 6 years of age) in 1994 was 54%. It is also reported that currently more than 90% of children enroll in primary schools and that the drop out rate in primary schools is around 4%. Assuming that some 70% of children in the age group of 6 to 14 years are literate, the adult literacy rate works out to around 47.5%.

It is estimated that the literacy rate (above 6 years of age) in 1984 was 29.4%. Assuming that the age composition of the population in 1984 was the same as in 1994, and that the literacy rate among the age group of 6 to 14 years was only 50% in 1984, the adult literacy rate for 1984 works out to 23%. Similar extrapolations place the adult literacy rate for 1991 at 35.2% and for 1998 at 54%.

Combined first, second, and third level gross enrolment ratio:

The construction of the HDI also requires data on gross enrolment ratios. According to the General Statistics

published by the Educational Division, total enrolment at all levels of education in 1994 was 70,886. These statistics on enrolment leaves out students in monasteries, an estimated 15,000 in 1994. Therefore, the total enrolment in 1994 becomes 85,886 (70,886 + 15,000).

The denominator for the combined gross enrolment ratio is population in the age group 6-23 years. According to recent estimates, 39% of Bhutan's population was in this age group. This yields a combined first, second and third level gross enrolment ratio of 39% for 1994.

According to the Royal Government of Bhutan, there were 1,500 students enrolled in all educational institutions in 1959, which grew to 70,000 by 1990. This expansionary trend has been used to estimate the number of children enrolled in 1984. Assuming that the children in monasteries were the same proportion then as they were in 1994 (some 17% of total enrolment), the total number of children enrolled at all levels of education in 1984 works out to 40,325. Again, assuming that the population in the age group of 6 to 23 years was the same in 1984 as it was in 1994 (39%), the combined gross enrolment ratio works out to around 24.5% in 1984. Similar extrapolations place the estimate for 1991 at 33.2%. The combined enrollment rate for 1998 has been estimated to be 44%.

Income, Wealth and Expenditure Surveys

The late starts in planned development and subsequent lack of trained and qualified manpower constrains systematic surveys on the income and expenditure patterns of households in Bhutan. There are a few small surveys of land holdings and asset ownership, but these are not nationally representative. Bhutan has yet to institute a comprehensive national sample survey system that can collect, analyze and report data periodically on different socio-economic aspects.

Real GDP per capita (PPP\$)

Bhutan has in place a system of national income accounts that provides regular data on key macroeconomic indicators.

The 1999 Human Development Report estimates Bhutan's real GDP per capita for 1997 to be PPP\$1467. The PPP value of Bhutan's GDP has been arrived at by multiplying the per capita figure of PPP\$1,467 by the estimated population. Using this as the base, real GDP in PPP terms for every year between 1984 and 1998 has been worked out by applying the real annual growth rates in GDP published by RGoB. These figures have then been divided by population to arrive at real GDP per capita in PPP dollars.

	Estimated Population	GDP at 1980 prices (mn.Nu)	Real GDP Per cap (Nu.)	Real GDP per cap PPP\$
1984	452,000	1,466	3,243	901
1985	460,278	1,520	3,302	917
1986	468,708	1,675	3,573	992
1987	477,292	1,973	4,134	1,148
1988	486,034	1,994	4,102	1,139
1989	494,935	2,087	4,217	1,171
1990	504,000	2,225	4,414	1,226
1991	518,000	2,303	4,447	1,235
1992	533,000	2,407	4,515	1,254
1993	548,000	2,553	4,659	1,294
1994	564,000	2,716	4,816	1,338
1995	582,000	2,918	5,014	1,393
1996	600,000	3,095	5,158	1,433
1997	618,557	3,321	5,368	1,491
1998	636,499	3,514	5,521	1,534

LIST OF ACRONYMS

BHU	Basic Health Unit
GNH	Gross National Happiness
GNP	Gross National Product
GDP	Gross Domestic Product
IMR	Infant Mortality Rate
IDD	Iodine Deficiency Disorder
TFR	Total Fertility Rate
RIHS	Royal Institute of Health Sciences
DYT	Dzongkhag Yargye Tshogchung
GYT	Geog Yargye Tshogchung
HDI	Human Development Index
Nu.	Bhutanese Currency or Ngultrum
NHDR	National Human Development Report
RGOB	Royal Government of Bhutan
UN	United Nations
UNDP	United Nations Development Programme
WHO	World Health Organization

GLOSSARY

Bon	Pre-Buddhist religion
Druk Gyalpo	His Majesty the King of Bhutan
Drukpa Kagyu	A branch of tantric lamaism originating from Naropanchen
Drungstho	Indigenous physician
Gomchen	Lay priest
Guru Rinpoche	Precious Teacher or Master
Gongsar	Knighted commander
Geog	Administrative unit, or Block, under District
Gup	Elected leader of the geog
Dratshang	AN established monk body
Dzong	Fort or monastery
Dzongkhag	District
Kasho	Royal Decree
Lama	Priest
Lhengyel Zhungtshog	Cabinet
Lodey Tshogdey	Royal Advisory Council
Lyonpo	Minister
Meeser Thuepoens	Elected Village Representative on the Royal Advisory Council
Monks	Ordained priest
Nuns	Ordained women
Penlops	Regional Governors
So-Wa-Rigpa	An indigenous medicine system
Sankrit pandit	Hindu Priest
Patshala	Centre for Hinus study
Rabdeys	District monastic bodies
Tshodu	National Assembly
Zhung Dratshang	Central monastic Body
Zomdu	Community or local meeting