

# **BHUTAN**

**Towards Sustainable Development  
in a Unique Environment**



**National Environmental Secretariat  
Planning Commission  
1992**

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in a Unique Environment



Ministry of Environmental Secretariat  
Planning Commission  
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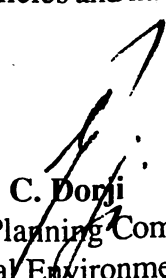
# Foreword

**“Gross National Happiness is more important than Gross National Product.”** His Majesty King Jigme Singye Wangchuck has with these words on several occasions expressed the main thrust of the development process in Bhutan.

Druk Yul, or Bhutan as it is known to the outside world, emerged quite recently from centuries of self-imposed isolation and medieval grandeur to join other nations in the process called development.

His Late Majesty King Jigme Dorji Wangchuck and His Majesty King Jigme Singye Wangchuck have desired for their people a better life with less hardship and greater social security. The development leading towards these goals will be guided by the objective of “Gross National Happiness” more than anything else. We will not be rushed into an uncritical adoption of all things that are modern; we will draw on the experience of those who have trod the path of development before us, and undertake modernization with caution at a pace consistent with our capacity and needs.

We therefore seek to preserve our culture, traditions, value systems and institutions. The unspoilt environment has always been held in reverence but today with the temptation of development there is a possibility that we may lose this reverence and break our traditional bonds with nature. This would be a great tragedy as unborn generations of Bhutanese will cease to inherit what we have received in our time. To guard against this we have framed many policies and have acted as much as possible to conserve our environment.

  
C. Dorji  
Minister, Planning Commission  
Chairman, National Environmental Committee

February 1992





# Summary

*Adincha*  
*Thimphu, July 20, 1993*

The Kingdom of Bhutan in the Eastern Himalaya is environmentally one of the richest countries in the world. It is the policy of the Royal Government of Bhutan to ensure that this rich natural endowment is preserved, and that the development of the country is sustainable and will remain so in the future.

While Bhutan shares this general goal with most other nations in the world, it may be one of the few countries where this goal is reflected in day-to-day policies and practices, even when this means placing constraints and limitations on the exploitation of natural resources and reduces the pace of economic growth.

Bhutan is in a rare and possibly unique position in that it entered the so called "development process" very late, with great caution and with every intention of learning from the experiences of other countries.

As a result of this, Bhutan may be among the few countries in the world:

- where environmental planning precedes, and thereby hopefully prevents, environmental degradation,
- where the principle of sustainability is established in government policies and is being implemented;
- where population pressure is still so moderate that it does not hinder orderly planning for sustainable development;
- where external debt is manageable and does not prevent planning for sustainability;
- where the natural resource base is largely intact.

In spite of Bhutan's fortunate situation, a number of environmental concerns are apparent:

- The population is growing rapidly, and population growth will be further accelerated by better health programs resulting in lower child mortality and longer life expectancy. This population increase cannot easily be absorbed by the existing rural or urban communities. The future socio-economic balance depends on a strictly enforced family planning policy and/or new means of livelihood not directly dependent on the land.



- Virtually all arable land is being utilized and with a population largely dependent on this land for their livelihood, pressure for new farmland is growing.
- Production is falling in some farming systems since the growing population makes the traditional farming methods inappropriate.
- Increases in domestic animal populations, especially cattle and yak, has in many areas led to the degradation of vegetation without achieving a higher yield.
- Although most of the country's original forest cover is still intact, many forests are intensively exploited for grazing, fodder and firewood, for non-wood forest products and building materials. Some of this exploitation hampers natural regeneration and threatens the long-term survival of the forests.
- The road system causes severe erosion problems. In this geologically young and unstable country, the problem will be exacerbated with the further building of roads.
- Some existing wood-based industries have placed demands on raw material that exceeds the sustainable harvest of forests.
- The numerous development projects undertaken in recent years and the many projects in the pipeline need careful planning to avoid negative environmental impact.
- The national institutions are weak and not always able to cope adequately with the growing complexity of the development process.

The Royal Government of Bhutan is aware of these concerns and is:

- preparing a comprehensive family planning policy, including a social security scheme for elderly childless citizens;
- developing an integrated land-use planning capacity for agriculture, forestry and animal husbandry aimed at ensuring genuinely sustainable use of the land;
- implementing a very restrictive and conservation-oriented forest policy where the highest priority for forestry is conservation of soil, water regime and climate;
- preserving Bhutan's rich bio-diversity through sustainable land use leaving natural vegetation over large areas and through an extensive network of protected areas;
- strengthening government institutions to ensure efficient forward planning in relation to the environmental impact of new activities;
- developing a new formal education system which will enhance the understanding of the importance of sustainable development for Bhutan;
- endeavouring to keep the economy of Bhutan healthy and free of unmanageable foreign debt, in spite of a low local income base.



Although Bhutan has been isolated for centuries and only recently opened up to the outside world, it is now genuinely a member of the international community. It is grateful for the substantial development aid which has enabled its economy to remain sound while considerable development has taken place.

Bhutan expects that the world community will support its attempts to maintain its rich natural resources. Such support can be shown by:

- support to the Environmental Trust Fund, securing the bio-diversity of Bhutan;
- providing development assistance on a programme basis, including an increased proportion of local cost financing;
- limiting the number of projects through donor combinations and/or focussing on fewer sectors, thereby easing the management burden of the government.



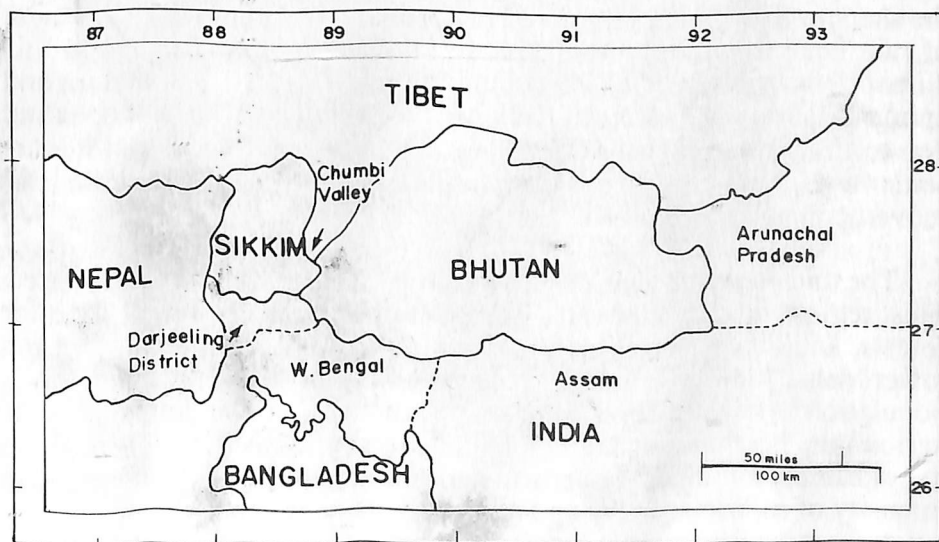


# 1. The Setting

The Kingdom of Bhutan is a small, landlocked country situated on the southern slopes of the Eastern Himalayas, bordering Tibet in the north and the Indian states of Sikkim, Assam and Arunachal Pradesh in the west, south and east respectively.

Area, sq km	46,500
Population	600,000
Population density/sq km	13
GNP per capita, US\$	425
Economy % of GDP 1990	
Agriculture	46%
Industry	25%
Service sector	29%
Land-use preliminary survey (1991)	
Grass, river and alpine	25%
Forests	57%
Cultivated	16%

## Key Figures





## **Topography and Geology**

The Himalayan Range is the most recently formed in the world, and is still rising. The country covers the southern slopes, from peaks of more than 7,500 metres down to an altitude of 200-300 metres on the southern boundary which is situated approximately where the Himalayan range rises suddenly from the North Indian plains.

A consequence of recent geological movements is heavy erosion. Slopes are generally as steep as they can be and are mainly kept stable by vegetation. There is considerable natural erosion which is further exacerbated by human activities, especially when the soil becomes heavily water-logged during the monsoon.

The climate is characterized by a dry winter and a wet summer monsoon. The precipitation becomes heavier towards the south, with annual rainfalls of up to 5000 mm.

## **Natural Habitats and Land Use**

Bhutan can be divided laterally into three climatic zones : sub-tropical, mid-montane, and alpine.

The sub-tropical zone is confined between the foothills along the Indo-Bhutan border and the mid-montane ranges at an altitude of 1800 metres above sea level. This zone is characterized by heavy monsoonal rainfall, steep hill slopes, and dense broad-leaved forests. The zone extends at places up to the base of the higher Himalayan ranges because the shape and gradient of the deep river valleys determines the movement of rain bearing winds. Over 55% of Bhutan's population live in this climatic zone, practising a combination of agriculture, horticulture and animal husbandry. Effects of heavy monsoon rain, steep hill-slopes and geo-technical disturbances combined with the higher density of human settlements have made this zone vulnerable to land-slides, hill-slope movement, and soil erosion.

The mid-montane zone covers the area between 1800 to 3500 metres. This region is characterized by moderate monsoon rainfall, conifer forests, and lesser pressure on land and forest resources because of the lower density of population. Approximately 40% of the Kingdom's population live in this climatic zone and practice a similar combination of agriculture, horticulture, and animal husbandry. This zone is less prone to landslides, hill-slope movement and soil erosion because of the lower intensity of monsoon rains and a lower density of people.





<b>Land-Use</b>	<b>%</b>
Perpetual Snow & Glaciers	8.96
Exposed and Rocky Areas	3.53
Alpine Pastures and Meadows	2.59
Alpine Scrub	9.14
Grass Land and Scrub	1.08
River Beds	0.42
Water Bodies and Lakes	0.05
<b>GRASS, WATER &amp; ALPINE</b>	<b>25.77</b>
Fir	7.72
Blue Pine	2.47
Chir Pine	1.97
Mixed Conifer	7.61
Broad-leaved with Conifers	5.16
Temperate Broad-leaved	12.86
Tropical & Subtropical Hardwoods	13.03
Plantations	0.08
Degraded Forests	5.74
<b>FOREST</b>	<b>56.91</b>
(High density: 42.8%/	
Low density: 14.1%)	
Valley Cultivation	1.13
Terraced Cultivation	5.06
Unterraced Cultivation	7.52
Shifting Cultivation	1.86
Orchards	0.46
Habitation	0.05
<b>AGRICULTURE</b>	<b>16.08</b>
<b>UNINTERPRETED</b>	<b>1.27</b>
<b>TOTAL</b>	<b>100.00</b>
Source: Master Plan for Forestry Development. Preliminary data, 1991.	

Land-use in Bhutan 1991



The alpine zone extends beyond 3,500 metres and contains alpine meadows, tundra vegetation, snow-clad peaks and glaciers. This zone is seasonally utilised by yak and cattle herders. It is characterized by scanty rainfall, dwarf vegetation and the general absence of permanent human settlements.

## People

Bhutan's population is 600,000. Dzongkha is the official language of the Kingdom.

The people of Mongoloid origin, with their distinctive language, Buddhist religion and cultural patterns of Tibetan origin inhabit the Northern and Central parts of Bhutan. The Mongoloid settlers in south-eastern Bhutan termed the Scharchopa's, though of the same origin, have a distinct cultural pattern akin to the Tibeto-Burmese. However, they have completely assimilated into the Buddhist derived culture of the northern and central parts of Bhutan. The settlers in southwestern Bhutan are predominantly Hindus. The bulk of them have immigrated more recently.

## *Buddhist Culture*

In Bhutan, Buddhism plays a central role in people's lives. The basic principles are to give back to nature what has been taken away and to



respect all forms of life. Both Buddhist and pre-Buddhist (Bon and Animism) beliefs promote a cautious attitude towards the environment. The mountains, rivers, lakes, streams, rocks and soil are believed to be the domain of spirits, so that pollution and disturbance to these sites are believed to be the cause of deaths and diseases.

Religion has bred in people a respect for life in all its forms. The constant interaction of the people with their natural environment has sharpened their intuitive insight into eco-adaptive strategies. This has been compatible with people's livelihood thanks to a limited population which has put light pressure on the land and forests.

## *History*

The policy of self-imposed isolation that Bhutan followed until the early 1950's enabled the Bhutanese to maintain their political independence and unique culture. Some implements found in Bhutan seem to indicate that the country was inhabited around 2000 B.C. The prehistory of Bhutan cannot be described as no archaeological research has been carried out.

Until the 17th century, Bhutan was divided into different factions with frequent wars. Shabdrung Nawang Namgyal united Bhutan in the early 17th century and established a theocratic system of government. The Shabdrung, or Dharma Raja (religious ruler) was the head of the ecclesiastical body and the Desi, or Deb Raja (temporal ruler) was the head of government. In this theocratic political system the succession of the Shabdrung was determined through the reincarnation process so that there were occasions when there were several claimants to this position. The Shabdrung was always recognized as a child, which often resulted in long and conflict-ridden regencies. This proved to be highly disruptive to the political system giving rise to factionalism. The two main factions were headed by the Paro Penlop, who controlled Western Bhutan, and the Tongsa Penlop, who controlled Eastern Bhutan. In 1907 the Wangchuck dynasty was established when Ugyen Wangchuck the Tongsa Penlop became the first king of Bhutan.

The third king of the Wangchuck dynasty, His Majesty Jigme Dorji Wangchuck (1952-72), had many hopes and aspirations for his country and people. He wanted Bhutan to take its rightful place in the world as a sovereign, independent country. He wanted to modernize the kingdom and make it economically self-reliant. As a great innovator in Bhutanese history, he established institutions such as the National Assembly and the Royal Advisory Council. He codified all the laws of the kingdom, separated the judiciary from the executive power, and introduced land reform and abolished serfdom. While he was keen to modernize the kingdom and improve the living standards of the people, he was determined



at the same time to preserve the cultural and traditional values of the kingdom.

## **Opening and Diversification**

In 1961/62 Bhutan began receiving Indian economic aid, for building a basic road system linking the country to India and for improving the educational system in Bhutan.

India financed the first and second Five Year Plans (1961-67, 1967-72) and they were largely implemented by Indian administrative and technical assistance in view of the shortage of trained Bhutanese personnel.

From 1972 onwards there has been a strong movement towards diversification in economy and in trade and aid relations, although India remains by far Bhutan's largest trading partner, and the most important donor of aid. The list of donors now includes major international grant and lender institutions such as the Asian Development Bank, World Bank, Kuwait Fund, UN Organizations, EEC, bilateral donors and non-governmental organizations.

## **Present Political Structure**

His Majesty the King is head of state and head of the government, assisted by the Cabinet which consists of his representatives in different ministries, ministers and high ranking civil servants.

The National Assembly has 150 members of which 105 are elected by the population for a three year period, 33 nominated by the king from the different ministries and 12 represent the monk body. The people's representatives are elected in accordance with the traditional political system at a local level.

The National Assembly normally meets twice a year, or when deemed necessary to discuss legislation submitted by the Cabinet and all matters of national importance.