
CHILDREN & WOMEN

IN BHUTAN 1991

A SITUATION ANALYSIS



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Acknowledgements:

The Situation Analysis of Children and Women of Bhutan is prepared by UNICEF, Bhutan, in close co-operation with the Royal Government of Bhutan.

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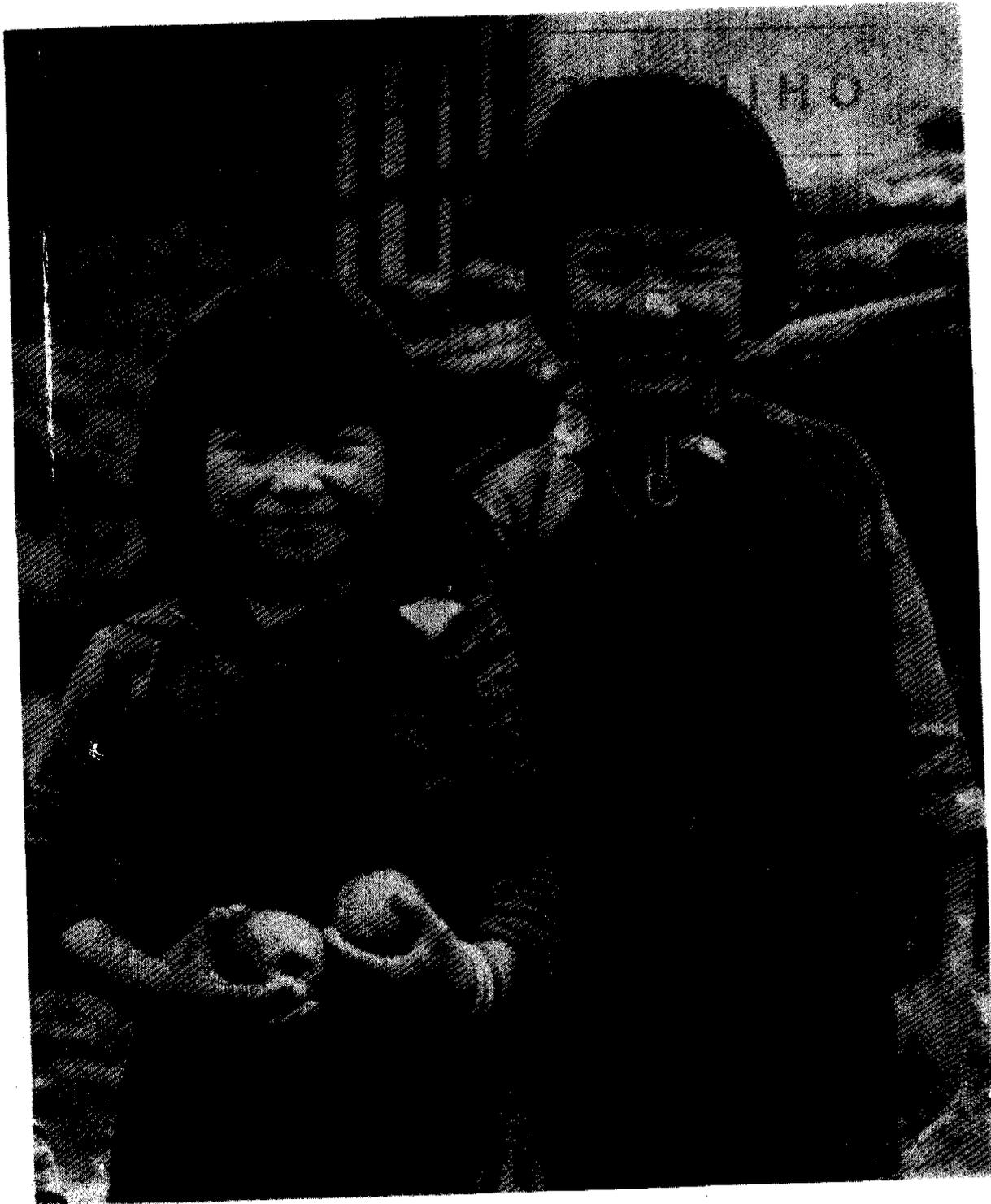
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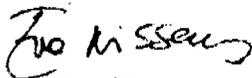


FOREWORD

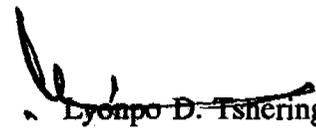
This Situation Analysis was prepared jointly by the Royal Government of Bhutan and UNICEF during 1990 and 1991. It examines the status of children and women in Bhutan and is based on available data at that time. Through this analysis of the situation of children and women, priority areas for action have been identified for the continued co-operation between the Royal Government and UNICEF during the next programme cycle, 1992 - 1996 and for the Seventh Development Plan, July 1992 - June 1997.

The Royal Government has ratified the Convention on the Rights of the Child and adopted the global goals for children for the year 2000 and incorporated them in the Seventh Development Plan with specific targets to be achieved by 1997. A National Plan of Action for Children in the 1990s is under preparation to identify policies, strategies and activities to reach those targets. Special mechanisms will be developed to monitor the progress towards achieving them. The Situation Analysis will be used to document this progress. It will be revised periodically to give the latest available information on the changing status of children and women in Bhutan.

Thimphu 1992



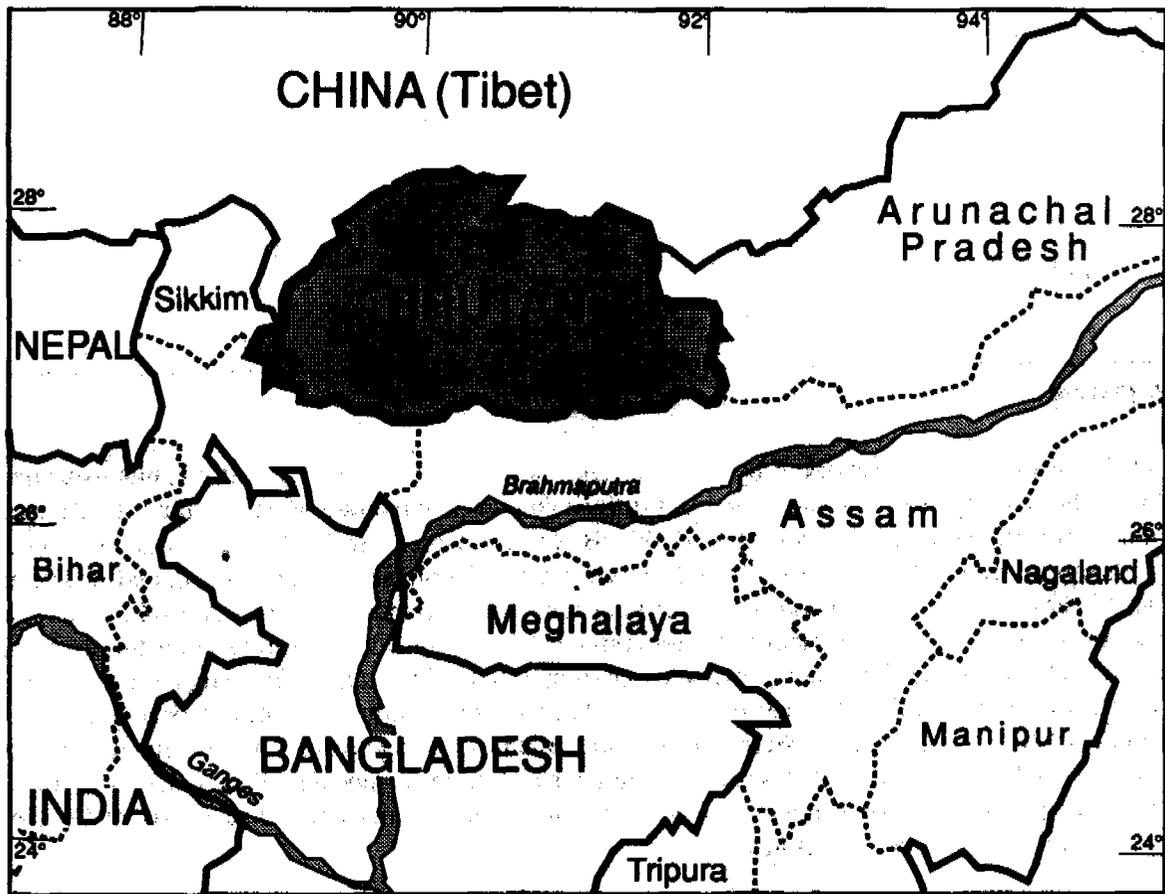
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Lyonpo D. Tshering
Hon'ble Minister of Finance

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**GEOGRAPHY**

Landlocked between INDIA and CHINA (Tibet), the Himalayan Kingdom of Bhutan covers 46,500 sq.km (18,147 sq. meters).

The great lateral divisions running east-west separate the country into three quite distinct geographical regions. These, in turn, determine the centres of population and their characteristics. The southern foothills rise precipitously from the Indian plains. The altitude rises from about 250 meters (812 feet) to 2,000 meters (6,500 feet). The central highlands or the inner Himalayas rise from 2,000 meters to 4,000 meters (13,000 feet). The third zone rises to the snow covered heights of the Himalayan peaks ranging from 4,000 meters to 7,000 meters (23,000 feet).

The climate is characterised by the altitudinal diversity ranging from hot and humid sub-tropical conditions in the south, to the perpetual ice and snow in the alpine zone of the high Himalayas. The sub-tropical south experiences an average daily temperature ranging from 15-30 degrees Celsius. In the inner valleys, the climate is more variable. It tends to be temperate and show distinct seasons. Above about 3500 meters, the climate becomes increasingly severe, with short cool summers and long cold winters.

** This map is used solely to show Bhutan's geographical location.
The international boundaries have not been officially certified.*

HISTORY

Bhutan's history has been marked by isolation and inaccessibility. The earliest inhabitants came to settle in the country many centuries ago. Little is known about these early migrations. The first motor road in Bhutan was constructed in 1962. Buddhism, which came to Bhutan in the 8th century A.D. has been moulded into a distinct Bhutanese form and Bhutanese culture, art, drama, music and dance all have a religious foundation. The rituals and dance dramas, central to the folk culture, are living manifestations of an ancient tradition and a national faith. Art, paintings and the drama are like life itself, reflecting the struggle between good and evil. The striving for enlightenment remains central to the conduct of every day living. Buddhism is woven into the fabric of society in a way for which there is no modern western comparison. Buddhist perceptions of non-violence are integral to the way of life and although Bhutan is no longer a theocracy, monks still play a leading role in lives of the people and have a honoured place both in the society and state. The history of Bhutan is therefore inseparable from its religion.

The people of Nepali origin are mainly Hindu, though many of the hill tribes are Buddhist. The Hindu religion shares Buddhist saints and has other links with the Vajrayana school of Buddhism in Bhutan. The caste system holds little sway in the Buddhists' meritocratic system. There are no religious and cultural restrictions which prevent social contact and marriage.

In 1907, Ugyen Wangchuck (1862-1926) was elected the first King of Bhutan by popular consensus. Since then, the Monarchy has spanned the following hereditary Kings:

1. King Ugyen Wangchuck 1907-1926
2. King Jigme Wangchuck 1926-1952
3. King Jigme Dorji Wangchuck 1952-1972
4. King Jigme Singye Wangchuck 1972-

Bhutan has been independent, throughout its history, it is one of the few countries in Asia never to be colonized. Bhutan was completely isolated from the outside world until the 1960s when the third King Jigme Dorji Wangchuck (1928-1972) opened links with other countries and initiated the development of the modern economy. His Late Majesty also introduced many social, legal and constitutional reforms, which had far reaching effects. It was also during the time of the 3rd King that Bhutan became a member of the United Nations and other international organizations.

DEMOGRAPHY

A population census is being carried out since 1989. Earlier estimates of the total population have varied widely from 600,000 to 1.5 million. The indications are that the figure which will emerge from the census could be about 800,000. However, information available indicates the following features:

- * Nearly 90 per cent of Bhutan's population live in about 4,500 rural settlements, which vary in size and morphology from a compact group of twenty or more houses in the south to scattered groups of houses in the north.
- * The remaining 10 per cent or less of the population live in the 25 communities that the government has classified as urban centres.
- * About 40 per cent of the country's population is settled in the southern region which has the highest density of population.

If a base population figure of 600,000 is accepted, Bhutan is the least populated country in South Asia. The density of population would then be about 14 persons per sq. km which is one of the lowest in the Himalayas. The population is mostly confined to the arable valleys, large tracts in the north are virtually empty except for groups of yak herders. The average population density in the Himalayas is 54 persons per sq.km.

In the absence of reliable vital population statistics, it is difficult to analyze the demographic trends in Bhutan. However, according to the census conducted in 1981, the crude birth rate is 39.1 births per thousand. The death rate is 19.3 deaths per thousand population. This represents an annual growth rate of approximately two per cent.

Bhutan has a young population. 40 per cent of the population is under 15 years and only about 60 per cent of the population is above 60 years. At the present growth rate, the population is expected to double in the next two or three decades unless the rapid decline in the mortality rate and increase in life expectancy is accompanied by a decline in the birth rate. Bhutan cannot afford to have such a growth of population due to its limited arable land.

ECONOMY**The Traditional Economy**

The development of Bhutan's economy has always been constrained by the following factors: being land locked mountainous terrain; small and scattered population; limited domestic demand and lack of skilled manpower. Even the traditional economy was shaped by these limitations. While trading links across the Himalayas existed, most communities have to be self-sufficient in basic necessities, especially foodstuffs, and most production was for subsistence. Although the quality of life provided by the traditional economy appears to have been relatively high, as demonstrated by the size and quality of houses and religious/administrative buildings, health standards were poor.

Early Development

Bhutan remained isolated from the outside world until the 1960s when efforts to increase links with other countries were initiated by King Jigme Dorji Wangchuck. The first Development Plan was prepared and implemented in the period 1961-1966, with emphasis on basic infrastructure to improve external and internal communications. This emphasis on infrastructure development to improve communications continued in the subsequent development plans. A large proportion of investment was also made in developing Government institutions especially through education and training. While no detailed data exist for this period, it is apparent that the improvements in communications increased the potential for trade and encouraged specialization in production.

Economic Development during the 1980s

During the 1980s, GDP grew at an average of 7.5 per cent - a very rapid rate of growth compared with most developing countries during the same period. (These growth rates are assuming constant prices, i.e. the effects of inflation have been eliminated.) By 1989, GDP almost doubled to about 90 per cent compared to its 1980 level. Assuming a population growth rate of two per cent, capita GDP growth was over five per cent per annum.

Unlike previous Plan periods, the major impetus for GDP growth was not from aid flows but was largely based on the expansion of the electricity and mining/manufacturing sectors, starting from a negligible base, electricity sector growth averaged 65 per cent per annum. This was largely due to the commissioning of the Chukha Hydroelectric power plant, with an output of 336 MW, increasing electricity production from 3.5 MW in 1981-1982 to 341.6 MW in 1987-1988. During the 1980s, the manufacturing, mining, transport and communications all showed average growth rates of well over 10 percent per annum, due to the combined efforts of starting from a very low base and increased investment, mainly in the form of aid.

ECONOMY: Development during the 1980s

Agriculture, was one of the slowest-growing sectors with growth rates at five per cent per year. But a five per cent growth rate is rapid by most standards, and would allow considerable improvement in average agriculture incomes despite the growth of the rural population. While these estimates are based on limited data, it has been assumed that the growth in the agricultural sector was the result of both increases in area planted and in productivity. The relatively slow growth of the forestry sector was the consequence of Royal Government of Bhutan's policy which restricts the level of logging to prevent unsustainable use of forest resources.

Structure of GDP in 1989

The difference in the growth rates of the various sectors resulted in change in the contribution of each sector to the GDP over the decade. The share of agriculture and forestry shrank by about 10 percentage points to 45 per cent of GDP, almost exactly offset by the growth in electricity from a negligible share to about 11 per cent. The share of manufacturing, from a very small base, almost doubled, to six per cent. The share of government services was steady at around 10 per cent. While the power and manufacturing sectors expanded during the 1980s, the majority of the population remained dependent on the agricultural sector for incomes and employment at the end of the Sixth Five Year Plan: seven out of eight adults were engaged in agriculture according to a 1981 survey. Despite the growth of the industrial sector, its overall contribution to GDP and employment remained small. Food processing, cement, wood products and alcoholic beverages accounted for most of industrial production and due to limited domestic demand, much of the production was exported to India. During the Sixth Five Year Plan, a vigorous programme of privatization was begun, whereby public enterprises were transferred to the private sector. This trend has been further prioritized in the Seventh Plan.

Public Finances in the Sixth Five Year Plan 1987-1991

The budget for the Sixth Plan was 9559.2 million Ngultrum. The sectoral allocation of expenditure reflected the priority accorded to the productive sectors, in comparison to the social services sector.

- (a) Agriculture received the largest share of the budget at 18 per cent.
- (b) Power and Trade and Industries received the second and third largest shares at 13.1 per cent and 13.3 per cent respectively.
- (c) The Social Services sectors received considerably smaller shares, with education allocated 8.1 per cent and health 4.2 per cent.

While the First and Second Five Year Plans were financed almost entirely by the Government of India, other donors began to provide aid to Bhutan from the Third Plan. Until 1987-1988 grants from India exceeded domestic revenues, but by 1989-1990 domestic revenue amounted to more than the total of grants from all sources.

ECONOMY: Long Term Opportunities

Based on the constraints noted and the existence of abundant natural resources, Bhutan's long term economic opportunities seem to lie in the development of activities which are based on the sustainable exploitation of the country's natural resources. The area with the most obvious potential is the further development of hydroelectric power for export. Although power generation will produce additional Government revenues, the development of other sectors will be required to provide incomes for the majority of the population. The initial developments in the industrial sector had not produced significant employment opportunities by the end of the Sixth Five Year Development Plan and it is unlikely that this sector would expand at such a rate as to transform the nature of the economy during the Seventh Five Year Development Plan.

The agricultural sector will, therefore, continue to provide sustenance for the majority of Bhutanese and efforts will be made to encourage increases in productivity of arable, livestock and forestry output. These increases in output will be encouraged on a sustainable basis.

Human Development Indicators

The Royal Government recognises the importance of other factors when assessing development, including preservation of Bhutan's cultural heritage and diverse natural resources. The distribution of additional incomes amongst the population is also an important consideration as demonstrated by the inclusion of balanced development as one of the Government's major objectives for the Seventh Five Year Plan. Although Bhutan was able to achieve impressive GDP growth rates during the Sixth Five Year Plan, the key basic indicators of welfare, i.e. health, nutrition, education and shelter, have remained particularly poor. Programmes to improve these indicators will be one of the major objectives of the Seventh Five Year Plan.

TRADE

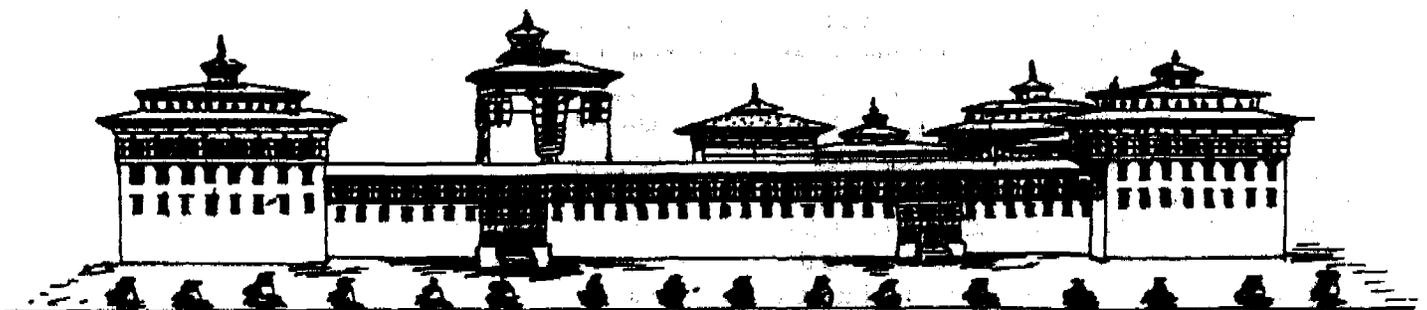
Bhutan has a very open economy: in 1989 exports amounted to about 27 per cent of GDP, while imports were 38 per cent of GDP. Bhutan's imports have continually exceeded exports although exports rose substantially from the mid 1980s. The surge in exports was mainly due to the sale of electricity from Chukha, although there was also an increase in exports of wood and wood products during the same period. Bhutan's main exports are now electricity, wood products, agricultural products, including horticultural crops, and cement. India is by far the dominant trading partner of Bhutan: it has been the destination for more than 90 per cent of Bhutan's exports. New export markets were opened during the latter part of the 1980s, including Bangladesh. While the importance of India as a source of imports declined somewhat in the second half of the 1980s, 60-80 per cent of Bhutan's imports continued to come from India by 1989.

EMPLOYMENT

Given the reservations already noted on the problem of having no basic population figure, it is, however, reasonable to estimate that nearly 90 per cent of Bhutan's population is engaged in subsistence farming. The Government's policy is to maintain a small, compact and efficient administration. Three per cent of the population is engaged in other economic activities. Six point five per cent of the population is not economically active although employment opportunities are abundant.

The biggest percentage of the literate adult population is employed in the civil service. Few of the managerial positions in the business or private sector are filled by Bhutanese. A large number of business enterprises still employ expatriates at all levels. Efforts are being made by the Government to encourage the educated Bhutanese to join the private sector.

In the civil service, there is no discrimination in pay, compensation and benefits between the sexes. Both male and female civil servants of the same qualification and level receive the same pay and benefits depending on their skills.





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A SITUATION ANALYSIS

Chapter 1

WHY A SITUATION ANALYSIS ?

The Bhutanese people are rightly proud of their social, cultural and religious heritage. Traditions are strong and contribute greatly to social coherence and integrity. Where references are made to "traditional society", the term is used strictly, according to the meaning accepted in Bhutan.

Planning a coherent programme of cooperation between the Royal Government of Bhutan and UNICEF begins with the identification of human development priorities common to both organizations. UNICEF's special charter defines the organization's specific areas of concern, and the Governments' Five Year development plans detail the national development priorities. Priorities which are

A Situation Analysis

common to both may be identified in broad terms. The process then calls for a close examination of the status of children and women as the fundamental baseline for identifying the most critical priorities, the strategy options, a framework for working together, and finally detailed programmes of activities.

This situation analysis, therefore, is the result of refining the mass of information available. As such, it is a highly selective document. It draws only on the information considered relevant to the planning process, and then records only the key elements of that information which have the most significant implications for programme development. *It cannot, and should not, attempt to be an exhaustive and definitive study of Bhutan.*

The situation analysis tends to crystallize information which, in a dynamic development environment, will often be out of date at the time of printing. By then it would have served its purpose as an integral part of the programming process. The situation analysis is, therefore, a record of certain aspects of national development during the period under review.

Period of Analysis

The period covered by this analysis cannot easily be limited by specifying a certain number of years. While the focus of the analysis must be sharpest on what exists in 1989, 1990 and 1991, references may often appropriately be made to situations, events, policies, decisions many years before. Bhutan is experiencing a period of rapid change. The evidence of this is not merely to be found in the dry colourless tables of statistics, but in the daily lives of the people in towns and villages.

One major indication of rapid change is the obvious increase in social mobility. There are more buses and trucks on the roads carrying an increasing number of people and goods to more areas of Bhutan.

Urbanisation is on the increase with small towns coming up all over the country. There are more consumer goods, more schools, more health and other public facilities and services.

In some major towns, one area of significant change is the emergence of the home video as a source of entertainment. In 1988, video was hardly known in Bhutan. The number of video cassette rental shops in Thimphu in 1991 is possibly one of the most important indicators of social change. An assessment of the number of video sets necessary to make these shops commercially viable would lead to an indication of the amount of foreign exchange spent on buying the equipment. This, in turn, would suggest the expansion of disposable income, the priority given to buying these electronic equipment. This does not take into account the popularity of certain types of video, the social messages coming via video, and the possible effects on a society whose traditions and traditional patterns of behaviour are held in high esteem as the foundations of society.

A more powerful transmitter is enabling the Bhutan Broadcasting Service to reach more people. Has this created a demand for more radios in rural and urban areas? What are people listening to? What do they want to listen to? This situation analysis may be criticized, quite rightly, for its failure to go into the observable evidence of social mobility, effective communication, and widening social horizons.

The social conflicts resulting from rapid change and rising community aspirations are critical elements in the dynamics of development and, therefore, have an important place in a situation analysis. The reason for the absence of contemporary social change in this analysis can be explained. First, the full significance of the extent of these changes, and their possible significance, are only now becoming evident. Second, a little more time is needed to determine what specific areas of social change should be

examined. Third, the internal conflicts which, unfortunately, developed during 1990 and 1991 may have accelerated some changes, and the resolution of these social differences would be an important context for any study of social change in Bhutan.

A Question of Balance

A major problem in presenting any situation analysis is to decide on the balance between statistics, description, and analysis. There are further decisions which must be made within each of these categories. For example, how are statistics related to population to be interpreted and used when estimates of the population base data vary. The census being conducted in Bhutan during 1991-1992 will clarify this situation. The question of who is a citizen of Bhutan and who is not should be resolved by the present census.

Obviously, there must be a certain amount of description and even anecdotal evidence. Well trained, experienced observers can often provide analytical insights which statistics cannot. Descriptive information provides the background necessary for understanding and interpreting statistical data. The final editing of a situation analysis has, therefore, a slightly different purpose than the sectoral compilation of substantial amounts of information. Most of the actual planning work is done from the information compiled. This final situation analysis is a distillation of that information.

One final comment on terminology is appropriate. The term "traditional society" is a particularly dangerous one to use. It is open to all sorts of interpretations, and the term, regrettably, carries overtones of cultural arrogance, condescension and even tourist curiosity. It can also be used as a technical term with a fairly well defined social, historical and anthropological meaning.

The Bhutanese people are rightly proud of their social, cultural and religious heritage. Traditions are strong and contribute greatly to social coherence and integrity. Where references are made to "traditional society", the term is used strictly, according to the meaning accepted in Bhutan.

Summary of the Situation of Children and Women

It is estimated that out of every 1000 children born, about 134 die before their first birthday and another 80 die before their fifth birthday... The maternal mortality rate is one of the highest in the world at 770 per 100,000 live births. A major cause is that 90 per cent of the women deliver at home without support from trained personnel.

Bhutan remained isolated from the outside world until the 1960s. Since then, there has been enormous progress for children and women. Almost the whole population has access to modern health services and most of the children are being immunized against the six vaccine-preventable childhood diseases. Primary education is provided to over half the children of school-going age and improved water supplies are available to 40 per cent of the rural households.

However, children and women still face many problems. It is estimated that out of every 1000 children born, about 134 die before their first birthday and another 80 die before their fifth birthday. Diarrhoeal diseases and acute respiratory infections account for more than half of reported child morbidity and diarrhoea alone for more than 40 per cent of deaths among children. One underlying cause is the general unawareness of basic principles of hygiene and sanitation.

A Situation Analysis

The maternal mortality rate is one of the highest in the world at 770 per 100,000 live births. A major cause is that 90 per cent of the women deliver at home without support from trained personnel. There are no traditional birth attendants in Bhutan and referral to the nearest hospital is difficult. Malnutrition is also a serious problem with every second child under five being below the required height for age, while 39 per cent of the children are underweight for age. Among women of childbearing age, 13 per cent are of low stature (below 145 cm), while 18 per cent are malnourished according to body mass index. Anaemia is also a major problem for women while iodine deficiency disorders and lack of vitamin A are prevalent nationwide.

Although the availability of improved drinking water supplies has increased fivefold over the last decade, 60 per cent of the rural households still do not have an improved water supply. Many of the existing water sources provide contaminated water, so it is only about 25 per cent of the rural population that has access to safe drinking water. Around 60 per cent of the rural households have a latrine, but only 15 per cent of those latrines are of an improved, more sanitary, type.

Almost 40 per cent of the children of school-going age do not yet have access to education. Every year about 30 per cent of the students repeat their grade and almost two thirds drop out before they reach the end of primary education.

While there are no major concerns exclusive to girl children which are not shared by boys, they have less access to education, as only 38 per cent of the primary school students are female. Almost 40 per cent of the children of school-going age do not yet have access to education. Every year about 30 per cent of the students repeat their grade and almost two thirds

drop out before they reach the end of primary education. Thus, there is a large number of children out of school and very few opportunities for these children to continue their basic education or to take up jobs. Illiteracy among adults is also a major problem with only 30 per cent of the adults, and less than ten per cent of adult women, being literate. All these problems are interlinked and reinforce each other. The population lives in remote isolated areas, which are difficult to reach with social services. At the same time, traditional beliefs further limit the use of existing services as people lack the basic knowledge of hygiene which helps to prevent illness.

Bhutan's economy is constrained by its mountainous and land locked terrain, a small and scattered population and lack of skilled manpower. More than 90 per cent of the population derives its livelihood from agriculture and livestock production. Private enterprise is limited to a few small-scale industries which indicates the country's narrow entrepreneurial base and explains its dependence on external assistance. India is the main trading partner and absorbs much of Bhutan's timber, minerals, agricultural products and hydroelectric power. There are, however, other concerns besides economic development. Bhutan is serious in preserving its cultural heritage and natural resources. One of the difficulties the kingdom faces is the ethnic and civil unrest along its southern border, adversely affecting schooling and health services for children living in these parts of the country, since 1990.

During the 1980s the gross domestic product grew at over five per cent per annum but unsustainable deficits in capital and recurrent budgets during the last few years has led the Government to impose severe budget reductions since 1991. Despite economic and political difficulties the survival and wellbeing of children is given high priority. The allocations for social services will go up during the Seventh Development Plan period (1992/93-1996/97) with

the share of health increasing from four per cent to 12, and education from eight per cent to sixteen.

A National Programme of Action for Children is being prepared with most of the 1990s' goals also being incorporated in the Seventh Development Plan. The Government has ratified the Convention on the Rights of the Child and has signed the World Declaration and Plan of Action for Children in the 1990s.

The Future

Bhutan's national goals for children and women for the end of the Seventh Five-Year Development Plan in 1997, are as follows:

(a) To reduce infant and under five child mortality rates from 125 and 193 per 1000 live births to 50 and 70 respectively and to

reduce the maternal mortality rate by half from 770 to 385 per 100,000 live child births;

(b) To reduce moderate and severe protein-energy malnutrition in under-five children from 38 per cent to less than 19 per cent and among women from 18 per cent to less than 12 per cent;

(c) To increase access to and use of safe water in rural areas from 40 per cent to 60 per cent of the population. To increase the availability of smokeless stoves from eight per cent to 15 per cent and to reach universal access to latrines;

(d) To increase access to primary education from 67 per cent to 85 per cent of the school-aged children (gross enrolment); and to increase the enrolment of girls so that they equal the number of boys enrolled.





CHEY CHEY OF KHING, BULI

Chey Chey is about four years old. She has another name, given by the Lama, but nobody uses it. The youngest, most loved child in the family is called Chey Chey in the Keng language and the name sticks to some. They can remember roughly when she was born but it doesn't matter. When the family decides to enrol her at the village school, they will decide her date of birth.

Chey Chey is the only daughter in the family. Her mother's first born was also a daughter. She died aged two. Chey Chey lives in her grandmother's house with grandma, her mother, her older brother Ghalay Phuntso, and her younger brother Sonam Tobgye.

Ghalay is about nine and he has been studying at the local school for several years. He isn't a very keen student. He plays truant a lot and usually fails the exams but still the family sends him back. He is happiest when he is working in the fields. The teachers think Ghalay would be happier at home; the family thinks the school is trying to get rid of him. Sonam Tobgye isn't a year old yet and is just learning to walk. But most of the time he is carried around on someone's back. Usually it is Chey Chey.

Chey Chey will be sent to school later but if she fails, misbehaves or doesn't work hard enough at home, she will be taken out and kept at home. Her future lies in the village. The man she eventually marries will move into her house. Ghalay and Sonam Tobgye will eventually leave their own house to go to the homes of their wives. This is how it is. Chey Chey's mother has already decided who Chey Chey will marry when the time comes. Some marriages in Buli happen like this, some are decided by the partners themselves.

The house and the household is small. Grandmother is getting old. She has been a widow for many years. Although she still works in the fields and is relatively healthy, her back and her joints ache all the time. The new dispensary in the village doesn't seem to have any medicine to help her but she doesn't like to go there anyway, - "The Lamas and village monks are better", she thinks. If only she could stop working so hard and rest a while, but there is too much to do! Chey Chey's mother, of course, does most of the work.

The family, like every other in Buli, grows rice, millet, maize and buckwheat as the main crops. They also have an ox to care for and a kitchen garden for chillies and other vegetables. All this takes hard work but they also have to provide labour for community work; the new hostel for the school has just been finished and the new bridge on the path from Buli to Tali is a lot of work. Then there is the Hydroelectric scheme at Tingtingbi and a new temple complex above Tali. They also have to provide portage for food and school supplies from the road and for the occasional official visitor.

Chey Chey's father is in the army, posted in the Haa district. He comes home, as do many of the Buli men who are in the army, for the rice transplanting each year. He is very big and strong, and there is always a great deal of work waiting for him when he comes back. Chey Chey is frightened of him when he first comes back although she soon gets over that. Two years ago, Chey Chey and her mother went to stay with him in the Haa district. They were all happy despite the poor housing at the army camp but there was only Grandmother and Ghalay at home and not enough people to do all the work. So Chey Chey and her mother had to come home.

Grandmother and mother wake up at dawn. They rekindle the fire to prepare the *suja* or *bangchang* that they will have first and then the rice and curry they will have for breakfast. Sometimes the rice is mixed with *karang*. Sometimes the rice is the special red rice they grow in Buli. The vegetable for the curry may be from the garden or fern, mushrooms or bamboo shoots from the forest if the season is right.

A Child's Story

When Chey Chey wakes up, her job is to fold the bedding and fetch water from the pipe that brings water to the village. But sometimes the pipe is dry. She also takes care of Sonam while the adults are busy preparing food and getting ready to go to the day's work. Sometimes, Grandmother or mother will stay home during the day, maybe making alcohol, maybe having a rest, but usually they have to go to the fields or forest or to work on the bridge all day. Chey Chey stays in the village during the day, usually with Sonam Tobgye on her back. She may be the only one at home from her house but her friends of about the same age from the other houses will be there, often carrying their younger siblings on their backs. There will also be at least a few adults around in the village and always one mother who can feed the babies when they need milk.

Chey Chey and her friends have no toys, no books. They will spend the day playing in each other's houses, or around in the village. In the summer, Chey Chey loves playing and washing in the water at the pipe. If she has soap it's a real treat. Chey Chey wants to go to the fields, to the forest, to the bridge, but she is too big to be carried around comfortably and too small to walk far on her own on the rough paths. She gets especially angry when Ghalay Phuntso goes to these places but she cannot.

At lunchtime, someone will feed the children and then later in the afternoon Ghalay will come home from school. But he has his own life, his own friends, and he isn't any company for her. Grandmother and mother come home as it is beginning to get dark. They usually have a drink to ease away the tiredness and they prepare the rice and curry for dinner. Extended family members and friends call by to talk, to drink and perhaps to eat. After dinner, Chey Chey falls asleep as the day's news is exchanged, gossip is traded, plans made and future festivals looked forward to. Chey Chey already knows about the work in the fields, the progress of the bridge, who is sick, which house will have a puja, when the next celebrations will be in the temple.

When Chey Chey is finally asleep they will open the mattress on the floor, take her cloths off and cover her with a *kira*. They will continue talking by the flickering firelight and later, mother and Grandmother will follow her to sleep, unless one of them has to go and stay the night in the fields, stoking a fire and making a lot of noise to keep the wild animals away from the growing crops. Sometimes a friend of Ghalay's comes to stay or he goes somewhere else to sleep, sometimes Grandmother's older sister comes from the house next door to sleep. It doesn't matter, although the house is small there is room for whoever comes.

Chey Chey's Grandmother was born here in this village and leads the same life that her mother led. Chey Chey's mother was born here and leads much the same life, although her travels to other parts of the country, her time living in the army camps, has made her aware of other places, other lives. Only time will tell the life that awaits Chey Chey and her children and her children's children ■

STARTING LIFE

Chapter 2



INTRODUCTION

For the rural women, the evidence is clear that there is a strong and expressed preference for delivering at home, and a concomitant fear and ignorance of hospital deliveries... Almost 90 per cent of deliveries take place at home of which only 10 per cent have professional attendance.

People are Bhutan's most important resource and development of human resources is a vital goal.

Better health and education are also the basic requirements to give the people a better quality of life.

Starting Life

In this area, UNICEF focuses on the critical first two years of human life - children. These elements are numerous and complex, and a summary such as this can only draw attention to areas of immediate concern for programme planning.

UNICEF's concern for women and children should be viewed in the context of the development of the entire community. The development comes simultaneously with progress in agriculture, health, education and the other social sectors.

This chapter cannot, in any way, attempt to be exhaustive or definitive. It can, however, highlight certain important information and suggest priorities and direction.

The Beginnings

Human procreation is not a conversational taboo in most parts of Bhutan, but there is a lack of awareness of bodily functions of both the male and the female and of pregnancy. For example, in some areas of the country, intercourse is not perceived to be the triggering factor behind conception. It is regarded as merely facilitating the re-entry of a conscious principle waiting to be reborn. In spite of the fact that women may not want, and even fear, becoming pregnant, they are often not controlling their own fertility.

The findings of a Knowledge, Attitude and Practice (KAP) study regarding Maternal Health in Bhutan, covering a sample size of 300 women conducted by the Department of Health Services in early 1992 indicated that there is a wide gap between awareness of family planning, willingness to use family planning and the actual use of family planning methods. 88 per cent of the 300 women surveyed indicated that they know about family planning and 64.7 per cent said they would be willing to use family planning if easily available. Yet, only a mere

eight per cent of the women or their husbands are currently using contraceptives.

A segment of the population perceives family planning as dangerous, in respect of both physical ailments and death. There are also folk notions prevalent in the population which regard the prevention of conception as a sin. The very fact that it is very difficult to be reborn as a human being, rather than an animal, means it is sinful to try to hinder such a birth from taking place.

The planning of a healthy family is an integral part of the Maternal and Child Health component of the Primary Health Care Elements. Health workers are expected, both during house visits and in the health centre, to motivate couples to adopt family planning methods. In addition, mobile clinics travel through the country, offering various methods of fertility control to women and men.

The Department of Health Services has built in ante-natal care as one of many primary health care services offered in hospitals, basic health units, dispensaries and outreach clinics. Ante-natal care is part of the curriculum of the different levels of health workers, but what is not known is to what extent simple indicators such as weight gain, Hb measurement, urine analysis, foetal position and pregnancy risk signs are assessed and analysed. What action is taken, both by the health workers and by the pregnant women, is not known.

Pregnant women who go for ante-natal check-ups are immunised twice against tetanus and they are supplied with iron tablets to prevent or treat their anaemia. The low turn over of iron tablets as monitored by the Essential Drugs Unit of the Department of Health Services, however, indicates that only a very limited number of women are provided with the prescribed amount of iron tablets for the required time span of six months before, and two months after the delivery. During visits to basic health units and

dispensaries, women are screened for high blood pressure and their urine is tested. However, there are still many health centres where these simple diagnostic procedures are not performed, often because of a lack of simple laboratory equipment. The health workers are expected to provide women with health education, promoting the importance of safe delivery by regular antenatal checkups. The women are encouraged to call a health worker at the time of delivery. Another duty of the health workers is to prepare women for motherhood by promoting breastfeeding and immunisation.

A steady increase in attendance at the Maternal and Child Health Clinics has been noticed. This indicates the pragmatism of Bhutanese society. After the initial hesitation steaming from ignorance, an increasing number of women are beginning to understand that the services rendered by the national health infrastructure are of benefit to them and their families.

During 1987-88, the Department of Health Services conducted a study on Unmet Needs, which specially focused on the delivery of antenatal care (ANC) services. 2,097 women were questioned about their utilisation of ANC clinics in hospitals, basic health units and outreach clinics in eight districts in Bhutan. 73 per cent of the women questioned had actually made use of the Government ANC services at least twice. The KAP study regarding maternal health of February 1992 further strengthens this finding of the Unmet Needs study (1987-88). Although the KAP study was conducted among some of the most remote villages in Bhutan (women surveyed live on the average seven hours walking distance from home to an outreach clinic, basic health unit and hospitals being 2.4 hours) it indicates that 70 per cent of all women surveyed attended ante natal clinics during their most recent pregnancy. The average number of ANC visits was four times which confirms the 1991 UCI survey which indicated that 65 per cent of

pregnant women received two doses of Tetanus Toxoid.

The findings from the KAP study also explained why 31 per cent of the pregnant women did not attend ANC clinics. 26 per cent of those who did not attend stated that although they wanted to attend the clinics, they could not due to heavy work load at home or because of the distance to the health centre. 17 per cent did not see the need to go as they had no problems and only six per cent felt that ANC did not make a difference. Although all women prefer female health workers, the gender of the health workers does not appear to be an obstacle for delivery of ANC services.

Preparing For The Birth

From a Buddhist point of view, the moment of birth and the following three days, surrounded as it is with implications of "*Dhip*", or the momentary loss of protection from harm, is the time when the baby's previous incarnations are lost or obliterated from its memory. For those who follow traditions, the event of birth is a very dangerous occurrence for all who come under the cloak of "*Dhip*" and are cut off from the protection of the sacred. Therefore, in some districts the family members do not enter the area of birth until after the cleansing rites on the fourth day; and neighbours and kinspeople who might otherwise have functioned as birth assistants or midwives do not visit until after the cleansing rites. The family tries to hide child birth from neighbours due to fear that they may bring "*doen*" (evil spirits, ghosts) unbeknowingly to harm both mother and child.

However, in one district, data collected showed that an overwhelming majority of mothers (63 per cent) were cared for by female family members at the time of delivery. It is interesting to note that 11 per cent of the deliveries were attended to by only the husband. The profession of the 'birth-attendant' does not really exist in northern Bhutan and consequently

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there is no 'Traditional Birth Attendants', as there is among the southern Bhutanese communities. However, the Department of Health Services has trained voluntary birth attendants in a northern district, Mongar, as a pilot project.

Amongst people of Nepali/Hindu origin there are women birth attendants, a role that is passed from mother to daughter. These women perform all the functions of a midwife and stay to help during the critical first three to four days.

The topic of childbirth is rarely explained, even among women, and so knowledge about the position of the child in the womb, birth procedures, risk signs and precautions are uneven. There are local and individual variations. For example, positions in which women deliver their babies vary from supine on the back, to squatting, or on hands and knees, or grasping a rope suspended from the roof.

The Arrival

With no knowledge of the signs of the start of a pregnancy or its duration, the delivery may strike unexpectedly and the pregnant mother may find herself delivering her baby wherever she may happen to be at that moment.

Figures available in the Annual Health Bulletin 1990 justify the estimation that 10 per cent of deliveries take place in hospitals and basic health units. This 10 per cent is mainly made up of women living in or near urban settlements. Another five per cent take place in the home with a trained health worker to assist. The remaining 80 out of 100 women deliver at home with only family members to assist them. For the rural women, the evidence is clear that there is a strong and expressed preference for delivering at home, and a concomitant fear and distrust of hospital deliveries. In towns, or areas close to towns, deliveries usually take place in

the room where the woman sleep. In the winter, the kitchen may be preferred as the only room where there is warmth from the stove. In villages, however, the cowshed, a simple construction in the fields, used by cattle herders at night, is often the place where children are born. With no knowledge of the signs of the start of a pregnancy or its duration, the delivery may strike unexpectedly and the pregnant mother may find herself delivering her baby wherever she may happen to be at that moment.

It has been noted that almost 90 per cent of deliveries take place at home of which only 10 per cent have professional attendance. Statistically, these deliveries must include many that should have been detected as at risk and should have been referred to a health facility. Apparently these potentially risky deliveries do not reach referral levels. Initial studies have identified some of the reasons, from the mother's point of view, why a delivery in a health institution is avoided.

The KAP study findings regarding maternal health (February 1992) indicates that 80 per cent of the 300 women surveyed prefer to give birth in their home. 40 per cent stated they felt safer delivering at home while 13 per cent claimed that home deliveries are customary. Some women did not see the hospital or basic health units as an acceptable or possible choice for a number of reasons. Some feel ashamed of having to expose themselves during delivery in hospitals/basic health units (15 per cent). Others felt that leaving their home is not possible as there is no one else to care for family (12 per cent), or that the health centre is too far (16 per cent). Being shy of male health workers is another reason (nine per cent). These findings throw some light on why 90 per cent of deliveries take place at home.

The following table, based on the unpublished demographic survey of 1991 of the Central Statistical Office (CSO), shows the distribution of year cohorts of live newborns to

the age group of women delivering. The table indicates that in the 13 northern Districts, only five to six per cent of the children born during the last four years were born to women who

were younger than 20. This is a very encouraging finding as not too many girls get pregnant too young. Very few children were born to women who were older than 44 years.

Table 2.1

Children born alive in:								
Age of women at delivery:	1990		1989		1988		1987	
15-19 years	37	6 %	24	5 %	24	5 %	29	6 %
20-24 years	139	23 %	113	25 %	119	25 %	110	24 %
25-29 years	137	23 %	113	25 %	108	23 %	111	25 %
30-34 years	103	22 %	100	21 %	91	21 %	94	21 %
35-39 years	99	17 %	70	15 %	76	16 %	62	21 %
40-44 years	53	9 %	37	8 %	46	10 %	47	10 %
Total:	600	100 %	460	100 %	473	100 %	453	100 %

Mothers Who Don't Survive

A review on maternal mortality in six out of 18 districts was recently carried out by the

Department of Health Services. Health workers interviewed family members of the deceased and checked hospital records and identified the following main causes of maternal mortality.

Table 2.2: Causes of Maternal Mortality

Haemorrhage after delivery	40%
Sepsis	13%
Eclampsia	10%
Abortion	7%
Retained Placenta	7%
Ruptured Uterus	7%
Anaemia	3%
Injury	3%
Not Specified	10%

	100%

Most maternal deaths afflicted women in the age-group 24-29 years (27 per cent). This

was followed by the age group 35-39 years, (23 per cent). Induced abortion does not seem to be

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a significant contributor to maternal mortality in Bhutan.

The maternal mortality rate is estimated at 770 per 100,000 live births. If we look at this in a different way, we will see that, with the average of over six births during a lifetime, the Bhutanese woman entering her fertile years has the chance of one in 20 of perishing from a pregnancy related disease. Were the women to have only half the number of children they are having now, their chances of survival would more than double.

The chances of surviving a delivery is greatly influenced by the age of the woman and the interval since her last pregnancy, (as is illustrated by the phrase: Too early, too late, too frequent, too many -) plus the availability and quality of pre-, peri- and post-natal care. Compared with surrounding countries, the situation in Bhutan is relatively encouraging, with an estimation of only five to six per cent of the births occurring with mothers under 20 years of age and half of the first babies born to mothers older than 20-25 years of age.

Children Who Don't Survive

The reasons for infant mortality during the first few months of life have not been systematically assessed. However, there are a range of traditional practices and situations which endanger the infant's chances for survival during his/her first vulnerable months.

In parts of the country, custom prescribes the umbilical cord to be cut on a piece of metal, usually a coin, in order to prolong the child's life. In the east, the father alone, or in his absence, the mother cuts the cord, as, according to folk notions, it is a sin for others, including health personnel, to cut the cord. This could be a reason for mothers not delivering at a health facility.

We do know that 90 per cent of deliveries take place in the home, and that 80 per cent take place unattended by any trained health personnel. We also know, from the results of the KAP study of February 1992, that in 35 per cent of the 300 women surveyed, nothing was done to clean the cord cutting implement. Only 13 per cent stated having boiled this instrument before use. 92 per cent of the 300 women used a string, often a string from the belt (*Kera*) was used to tie the cord. Only 15 per cent claimed to have boiled the string.

A health education programme could focus on the need for the use of proper preparation of the instrument and string used in order to reduce the risk of infant tetanus. Traditionally, the umbilical cord was cut with a bamboo knife made specifically for this purpose. Today, metal knives, scissors or a razor blade are increasingly being used. In parts of the country, custom prescribes the cord be cut on a piece of metal, usually a coin, in order to prolong the child's life. In the east, the father alone, or in his absence, the mother cuts the cord, as, according to folk notions, it is a sin for others, including health personnel, to cut the cord. This could be a reason for mothers not delivering at a health facility.

A traditional practice in northern and western Bhutan, is the feeding of butter to the new born child. This is usually done by a family member who uses often unclean fingers to put the butter into the newborn baby's mouth. The result is often diarrhoea and other life threatening infections putting the infant at risk at an early age. It appears from the KAP study that only 33 per cent of new borns are exclusively breastfed. 50 per cent were fed butter in addition to breast milk. Half the women surveyed started breastfeeding only "when milk came". Of these, 36 per cent started breastfeeding only on the third day. With Bhutanese women's present lack of awareness regarding the need to boil water, feeding utensils or milk before feeding the new born child, there is a real risk for the new born

infant. During the cold seasons in northern, western and eastern Bhutan, the habit of bathing infants once or twice a day during the first months can be fatal, especially as the child is usually wrapped directly in cotton cloths without rubbing and drying first after bathing.

Based on results of the demographic study conducted by the Central Statistical Office in 1984, the Infant Mortality Rate was found to be 103 infant deaths per 1,000 live births for the year 1984 (direct estimate). The indirect estimate according to the "South Model" came to 142 (unpublished) for the year 1982.

In February 1991, a random sample survey on Infant Mortality Rate/Under Five Mortality Rate was carried out in 13 out of 18 districts. This survey gives a more recent indication of the current Infant Mortality Rate/Under Five Mortality Rate, but the report is yet unpublished at the moment of printing this Situation Analysis.

The survey included 121 clusters, each having at least twenty ever married women. A total of 2,428 women who have been married were interviewed. They had between them 9,019 live born children. The boy/girl ratio was 106 to 100, and of the three most recent children born alive to each woman, the birth date and death date were recorded. The women's responses to questions about the birth date and survival period of their infants appears in Table 2.3.

The children are subdivided in year cohorts, from the year 1989 back to the year 1985. Each cohort includes between 410 and 510 children. The data of earlier cohorts are not included as the responses regarding children born more than five years ago are considered less reliable. Of each cohort assessed, the number of children who died within one month, 12 months, 18, 24, 30, 36, 42 and 48 months after birth have been converted to the mortality rate per thousand live births of that particular year cohort.

Table 2.3: Child Mortality Rate per Thousand Live Births

	Cohort born in:				
	1989	1988	1987	1986	1985
Number of children not surviving after					
1 month	57	75	73	57	68
12 months	96	107	113	109	118
18 months		132	123	122	129
24 months		144	136	131	134
30 months			144	148	153
36 months			147	157	158
42 months				166	170
48 months				173	175
54 months					180
60 months					187

The table shows that for the year 1989 the neonatal and infant mortality rate shows an optimistic drop. This could very well be the first impact of the vaccination drive to increase the

chances of survival of children in the country. However, it is still too early to state that a positive downward trend in infant mortality has been established.

Table 2.4: Gender differences in Infant Mortality

Child Mortality Rate, gender specific: per 1,000 live births										
Cohorts born in	1989		1988		1987		1986		1985	
	Boy	Girl								
Not surviving after										
1 month	51	65	74	74	94	52	82	28	87	47
12 months	99	98	117	98	117	109	134	75	137	99
18 months			140	125	120	126	138	103	151	107
24 months			144	145	138	134	147	117	161	107
30 months					150	138	159	136	180	127
36 months					150	143	171	141	180	137
42 months							184	146	185	156
48 months									189	161
54 months									199	161
60 months									209	166

As stated above, the survey was performed in a retrospective manner, relying on the memory of the mothers themselves, but often supported by other members of the family present at the moment of the interview. The village headman often proved to be a valuable source of information. The decline in the infant mortality rates of girls, the further away they are from the present, could suggest that parents tend to forget more easily the birth and early death of a girl rather than a boy child.

Any conclusions drawn from this information can only be tentative, but it does

seem clear that no gender bias detrimental to girls can be detected. It may even be to the contrary, that mortality rates for boys are higher than for girls for almost every year in the cohort.

Based on the same survey, an indirect estimation of early age mortality was carried out. The total number of children born alive and surviving at the time of interview, combined with the number of women per age group, were computed according to the United Nations models of the Coale Demeny "South" model (Trussell equations). Also see figure 2.5 and 2.6 for a general trend of infant and child mortality.

Table 2.5: Estimates according to "South Model" for the year 1989

	Both Sexes	Boys	Girls
Infant Mortality Rate	134	140	127
Probability of dying by age Five	215	221	209

It has been found that infant mortality in males is higher than females because baby boys are weaker than girls during the first year of life.

The cause is biological and is common to people all over the world. So the findings in Bhutan are consistent with this inherent weakness in infant males up to 12 months of age.

The probability of surviving from age one to age five, however, is almost the same for boys and girls, indicating little or no preferential treatment by parents based on the sex of their children.

The Newborn

Some information exists regarding the prevalence of low birth weight in Bhutan. This information is recorded in hospital data on all deliveries carried out in 22 out of the 27 hospitals. However, when assessing the available data, one should remember that only 10 per cent of all deliveries actually take place in a hospital, and that in many cases, these deliveries in themselves might also represent a high percentage of high risk deliveries.

This is the available delivery data from the 22 reporting hospitals:

Out of a total of 4,399 deliveries conducted in the 22 hospitals in 1989, 2,400 of the infants were reported to have a birth weight below 2.5 kg. This percentage of almost 54.6 per cent, is, however, not supported by the information provided by the National Nutrition Survey Report, December 1989, where children in their first months of life were found to be in satisfactory nutritional condition. Only a minimal percentage of children had a weight-for-age below two standard deviations below the reference median. We must assume the dramatic hospital data as quoted above does not reflect the actual prevalent low birth weight rates.

Sustaining Life: Feeding, Nutrition; Deficiencies

Normally, breast-feeding is continued till the second, or sometimes even into the third year. If a subsequent child is born before the normal nursing age is over, the elder child is often allowed to continue to suckle.

Infants are usually breastfed soon after delivery. Sometimes, a new born infant is offered a lump of butter. This is repeated before every feed from about three to 15 days of age. Nursing is done on demand. A crying infant will normally elicit responses from the mother to satisfy, distract or console them. Lactating mothers often drink "changkay", a local brew enriched with eggs and butter during and after birth to enhance milk production but she avoids meat, especially pork.

Customs regarding supplementary feeding vary. A supplement of butter and rice flour may be introduced as early as the fourth day of life. Rice flour-paste or wheat-flour-paste are introduced quite early. The child is fed these snacks with unwashed fingers or from the mother's or other caretaker's mouth.

During the first weeks after delivery, or for as long as five to six months, the nursing mother refrains from eating fruits and green vegetables, as these are thought to cause diarrhoea in the infant. Offering any other food but breastmilk to the infant facilitates the likely introduction of diarrhoea causing agents and should be postponed as long as possible, preferably into the third trimester of life.

Normally, breast-feeding is continued till the second, or sometimes even into the third year. If a subsequent child is born before the normal nursing age is over, the elder child is often allowed to continue to suckle. If the

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mother's milk fails, cow's milk or powdered milk is used as a substitute.

There is no stated time during which the child is expected to eat only "children's food". Rice, tea, stew and bland unspiced food are introduced while the child is still being breastfed. Strong chillies are usually resisted for a while by the child and are introduced gradually into the diet.

Over the last fifteen years, additional food, provided by the World Food Programme (WFP), has been given to rural families and schools. The World Food Programme supplies are also distributed to 24 hospitals, 24 MCH clinics and to the 73 basic health units and to most of the 350 outreach clinics set up by health workers attached to the basic health units or hospitals.

During these sessions, known to the public as "powder clinic", pregnant and lactating mothers and malnourished children are provided with monthly supplies of three kg of wheat soya blend and 0.6 kg of vegetable oil with the aim of improving their nutritional status.

There is no substantial group in the population of Bhutan where the lack of foodstuffs in the household is the major factor causing malnourishment in children and mothers.

It has been found that handing out WFP food rations, both in basic health units and schools, is seldom accompanied by any health education about proper nutrition and food habits.

Knowledge about proper storage of the WFP food is also lacking, so there is some loss of foodstuffs in the process. The opinions about the efficacy of the hand-outs of food differ. In general, it can be stated that there is no substantial group in the population of Bhutan where the lack of foodstuffs in the household is the major factor causing malnourishment in children and mothers. Some mothers asked about the donated food respond by indicating their priorities; the food lasts only a few days, but the vaccination is life-long. On the other hand, some health workers are of the opinion that they would not have been able to achieve UCI level of vaccination coverage in their area without the support of the WFP food.

NUTRITION

Nutritional Habits and Customs

Food is produced in Bhutan mainly for home consumption, and very little food is purchased from the market. Rice is the main food item in the west and central parts of the country, while maize is the main staple in the east. Rice and maize together account for 75 per cent of all cereals produced. The remaining 25 per cent are made up of wheat, barley, buck wheat and millet, produced mainly in central Bhutan. Cereal production covers 66 per cent of the country's own needs.

Many households keep kitchen gardens with chillies, pumpkins and radishes.

In north-west and central Bhutan, butter and cheese is produced from yak and cow's milk and is commonly used in the daily diet. Storage and preservation of meat and vegetables is done by drying, which largely reduces vitamin content. Cash crops, such as potato, soyabean, apple and orange have been introduced recently through the Government's agriculture development programmes.

Most Bhutanese rural households eat two or three meals a day, all consisting of the staple cereal (rice or maize), together with a vegetable curry consisting mainly of chillies or pumpkins and some meat or cheese when available. Two local alcoholic brews "ara" and "chang" are produced widely in farm households. As rural households still largely depend on barter trade, the alcohol produced often serves as payment for services or goods received.

The local alcohol serves as an important ingredient during the many recurring religious occasions and festivals in both the household and village. This is especially so in the eastern districts.

In the north western and central districts, the local butter tea is the usual fare on these occasions together with a variety of snacks made of pounded and fried rice and maize. When households buy additional foodstuffs, this is done either through barter or bought from the local market place in the district centre. In 1974, the Government created a central agency, the Food Corporation of Bhutan. It imports and distributes around the country the additional requirements of rice and cereals, food oil and the Government produced iodised salt. It also handles the sale of surplus production of cash crops from the farmers.

Food Availability and Malnutrition

Kitchen gardens are common throughout the country according to a small scale study on local food production in all rural areas of Bhutan. The main type of vegetables grown are green leafy vegetables, aubergines, tomatoes, chillies, cucumber, pumpkins, squash, beans, tapioca, cabbage etc. grown according to the climatic conditions of each region. However, this small scale study, made in conjunction with the National Nutrition Survey (1988 - 1989), does not give any figures as to the actual consumption pattern of the above-mentioned vegetables.

A district survey on Food Habits and Consumption, carried out in Punakha District, shows that even in such a relatively rich agricultural district, most families depend on rice as their main source of total daily intake of proteins and carbohydrates. The average daily intake was 2,500 calories, mainly covered by eating large quantities of rice. In general, Bhutanese diets in the north tend to be lacking in a wide range of important green and yellow vegetables.

Malnutrition

The actual food intake, as recorded above, should be adequate to meet the nutritional needs in calories and protein of a majority of the people. However, coupled with the presence of widespread gastro-intestinal infections and parasitic infestation which have been recorded earlier, the efficient assimilation of nutrients is significantly reduced, with resulting nutritional deficiencies.

In the Punakha survey for instance, calorie and protein deficiencies were observed among nine per cent and thirteen per cent respectively of these households. Chapter 2 elaborates further on the nutritional status of the different age groups of children and women.

Vitamin A Deficiency

The National Nutrition Survey, carried out in 1987-1988 included a clinical assessment of the magnitude of Vitamin A deficiency in children. Using WHO criteria, it was shown that neither the prevalence of night blindness nor of Bitot's spot was sufficiently high enough to prove that xerophthalmia and Vitamin A deficiencies are major public health problems.

Using multiple regression analysis, the vitamin A status was shown to be a significant explanatory factor for malnourishment as expressed in the weight-for-height, but not the height-for-age indicators. The findings support

claims that Vitamin A deficiency can be related to changes, not only in the eyes, but in the intestinal and respiratory tracts and the immune system and lead to increased child morbidity, mortality and growth retardation.

A haematological study carried out in 1985 showed that 14 per cent of 143 pre-school children were found to have serum retinol values less than 100ug/l. This percentage is considerably higher than the limits for well nourished populations. Comparable retinol values were found in pregnant women, in spite of a diet high in green and yellow leafy vegetable, yellow vegetables and fruit and dairy products. The data then indicates that Vitamin A deficiency is significant.

The current government policy is to provide regular prophylactic Vitamin A capsules to children and to post natal and lactating mothers. This policy will not only prevent further damaging eye diseases, but will also have a positive effect on the morbidity and mortality rates, particularly of measles, in children.

Iodisation and the Reduction of Severe Mental Retardation

During an earlier study on iodine deficiency disorders in Bhutan, the prevalence of cretinism, a severe form of mental retardation, was registered in several surveyed areas of the country.

Cretinism is the severe form of mental retardation, and the irreversible result of iodine deficiency disorders. The recent nutrition survey carried out in all districts in Bhutan (1987-1989), however, found only one cretin among the 3,500 children under six years surveyed. This should be an indicator of the fact that the national salt iodisation programme has had a positive effect and radically reduced the number of cretinous children. Other figures on mentally handicapped children do not exist in any official records.

Iodine Deficiency

The numerous anecdotal reports on cases of cretinism found in Bhutan can however, be considered as only the tip of the iceberg of extensive brain-damage occurring among newborns, caused directly by maternal nutritional iodine deficiency during pregnancy.

While iodine deficiency, with possible thyroid failure, may manifest itself as goitre in adults, children can suffer from iodine deficiency undetected for a long time. The consequences of this chemical hypo-thyroidism, even if transient or in the foetal stage, includes permanent growth and development disorders. These manifest themselves in hearing and speech defects, poor motor skills and impaired cognitive functions.

Studies done in 1985 and in 1989 revealed that between 13 and 21 percent of the women have goitre of varying stages. This indicates that there was a serious iodine deficiency situation in women of child bearing age in Bhutan. Sample studies testing umbilical blood, performed in 1985 and 1986 showed that resp. 13 per cent and six per cent of newborns were suffering from hypothyroidism. No statistical information is available on the prevalence of cretinism.

The numerous anecdotal reports on cases of cretinism found in Bhutan can, however, be considered as only the tip of the iceberg of extensive brain-damage occurring among newborns, caused directly by maternal nutritional iodine deficiency during pregnancy. Further, as iodine deficiency during pregnancy is associated with still births, the high still birth rate in Bhutan is probably linked to high levels of iodine deficiency in the population.

Also, the 1985 study showed that, while no cases of clinical goitre amongst pre-school children were identified, 14.7 per cent of primary

school children surveyed, showed a form of goitre. One can imagine the disastrous effect of the apparent wide-spread hypothyroidism on the intellectual abilities of the population in the iodine deficient areas.

Based on these observations, the Royal Government of Bhutan, in the mid 1980s, upon a Iodine Deficiency Disorder (IDD) control programme. The main component of this is the universal iodisation of salt, the education of Government personnel and the community at large, and the use of iodised oil injections for certain at risk population groups. Each year 4,000 to 5,000 metric tons of salt is imported from India. The salt plant in the border town of Phuntsholing iodates it with an iodine concentration of 60 ppm. It is packed in laminated jute bags containing 37.5 kg of salt each. This is of convenient weight for farmers with cattle, who may have a turn over of several of these bags per year, depending on the number of livestock.

The Food Corporation of Bhutan has the monopoly on the sale of the iodised salt and makes it available at subsidised prices to the public to prevent the illegal import of plain salt or inadequately iodated salt from India. By taking samples from shops and households, the iodine content of the salt is regularly monitored in the laboratory of the Department of Health Services.

Bhutanese salt can be found in every rural household and incidental testing of iodine content rarely produces poor results. A recent development is that people without livestock, in urban areas are now able to purchase convenient one kg packs of strongly iodated salt.

Unfortunately, the civil unrest in the southern part of the country has hampered the implementation of the salt distribution in the southern areas, where ironically, the places affected most by iodine deficiency are most exposed to cheaper but inferior Indian salt.

In late 1991 and early 1992, a nationwide study was carried out to assess the impact of the IDD Control Programme (IDDCP).

The study found that levels of goitre are still high, ranging from 18 per cent to 32 per cent in 6-11 year old children, and 28 per cent to 46 per cent in women aged 15-45 years. The cretinism prevalences in the same groups were 0.4 per cent, and 0.8 per cent to 0.9 per cent, respectively.

84 per cent to 87 per cent of the children and 82 per cent to 85 per cent of the women had acceptable urinary iodine concentrations.

Overall, this represents a great improvement in the iodine status of the population since the major 1983 nationwide study.

The study also revealed that salt of acceptable iodine content is reaching the entire country. However, salt purchasing, storage and cooking practices are still rather poor in some respects.

If public awareness and salt practices can be improved, and other components of the IDD continue effectively, IDD can be virtually eliminated by the year 2000.

Anaemia

The 1985 survey of Anaemia, in the age group zero to six, has been shown to be a major problem, with 58 per cent of the surveyed pre-school children being anaemic. The findings of the nutritional survey state anaemia as a significant factor for low weight-for-height. Anaemia coincides with a low nutritional status.

It was not made clear whether the suppression in growth is caused by the anaemia itself or by the same factors that cause the anaemia such as malaria or hookworm infestation.

Starting Life

These deficiencies have long term consequences for the physical and mental growth, learning capacity and productivity of children.

Intestinal Parasites

There is data available on the parasite load of Bhutanese school children from surveys carried out before school deworming campaigns were implemented in recent years. The data indicate that around 60 per cent of the children are infested with hookworm and nine per cent with trichuris. There is no reason to believe that the mothers of these schoolchildren have lower infestation rates in areas where there are no mass or school deworming campaigns organised by the Department of Health Services.

Nutrition and Growth Patterns

A child suffering from a spell of diarrhoea, or any other disease, does not grow normally in height and is likely to lose weight. When the child is in a healthy environment and is properly fed, its growth will catch up to the expected growth path. However, the more frequently a child is ill, the more the growth in height and weight of the child will lag behind the genetically predisposed growth pattern. Everyone knows intuitively that when children are growing well, they are healthy. Equally, when children grow thin or stunted, something must be done. The way a child is growing indicate a problem but not its cause.

Malnutrition in pre-school years leads to stunting, among other things. It is also widely observed to be associated with reduced school performance. Although malnutrition itself is not necessarily the problem, there is a general consensus that pre-school malnutrition and infection are critical determinants of performance in school in later years.

Growth is the increase in height and in weight. The nutritional status of an individual

reflects the result of the accumulative growth up to the present moment in time. In order to get an insight into the nutritional status of the Bhutanese child and woman, a survey was conducted by the Government in all the four zones of Bhutan in 1987-89.

An analysis of the height-for-age of children under 60 months was carried out to evaluate the degree of malnourishment, caused either by a deficiency of protein, calories and micro-nutrients or repeated infections (most often both combined).

The analysis revealed that for the whole nation, 56 per cent of the children under six were classified as being stunted. The eastern zone was worst affected, followed by the southern zone with respectively 64 and 55 per cent of the children under six being stunted. Their weight for age was two standard deviations or more below the internationally accepted reference median values of the NCHS.

That these figures are a little better or equal to those reported by several other countries in the region is hardly a consolation. These high percentages of malnourishment among children are not reflected in the records of MCH clinics, or the Annual Health Bulletin of the Department of Health Services and is a reason for concern. Apparently, many cases of malnourishment are not noticed or not reported by health personnel.

As far as nutrition is concerned, infants and young children are regarded, treated and nurtured without gender bias in Bhutan.

According to the survey report, the highest percentages of underweight children were to be found in the older age categories (18-60 months old). Although this finding suggests that the almost universal breastfeeding practices protect the child from malnourishment for its first year. It has been found that infants become

severely malnourished from as young as three months of age. Studies also show that an increasing number of children are becoming moderately malnourished (see figure 2.1). The number of children in the population which is malnourished stabilizes at about 15 months where 40 per cent of the children are found to be two standard deviations or more below the reference median weight-for-age. This information leads to the conclusion that timely intervention aimed at improving the nutritional status of young children should start in the child's second trimester.

No significant difference could be detected between the prevalence of stunting in boys and girls, a finding which would not occur in some of the other countries in the region, where boys enjoy a significantly better nutritional status than girls. This is a clear indication that at least as far as nutrition is concerned, infants and young children are regarded, treated and nurtured without gender bias in Bhutan.

The children surveyed were born and raised in a time that the vaccination coverage of Tuberculosis, Diphtheria, Pertussis, Tetanus, Polio and Measles were at a low level. Measles was then relatively widespread in Bhutan. Data available prove that this is a debilitating disease in children, resulting in a prolonged suppression of growth. The findings showed that the immunization status for measles was a significant factor in height-for-age, weight-for-age and weight-for-height of the surveyed children. Tuberculosis immunization had a similar effect. The relationship of malnourishment leading to a greater chance of acquiring Tuberculosis is part of a vicious circle also seen in other contagious diseases.

The analysis also identified parental occupation as a significant contributor to nutritional status. Parents, who are exposed to developments in health, are more likely to be able to read health educational material and take an informed interest in their children. When

educational and occupational status was linked to improved nutrition, it was seen that the children of farmers fared worse, a finding that is confirmed by the higher mortality rates of children in the lower socio-economic levels as found in the 1991 mortality survey of 1991 by the Central Statistical Office.

Planning the Family

Less than 15,000 people, (15 per cent of fertile couples) are estimated to be engaged in the control of their fertility. In absolute and relative terms, this figure is still very low and leaves the vast majority of couples unprotected.

According to the (yet) unpublished report on the Demographic Survey 1991 (CSO), only nine per cent of teenage women in Bhutan have delivered a child, reflecting the relatively high age at marriage, 20 years old (see figure 2.2 and 2.3). However, the Total Fertility Rate is conservatively estimated to be as high as 6.2.

The Government has since 1971, been engaged in the planning and control of population growth. Though its arable land and natural resources are limited, Bhutan still has a manageable population size and is, fortunately, still able to learn from the experience of other countries.

With no reliable data available, only rough estimates can be made of the magnitude of fertility control through oral and injectable hormones and condoms (see figure 2.4). In 1990, a total of 7,724 people were noted as acceptors of condoms or of oral hormonal family planning methods. However, there is no information available about the continuity of the methods adopted. A possible conclusion could be that less than five per cent of the eligible couples are using, on a more or less continuous basis, these methods of temporary contraception.

Starting Life

Looking at all methods, both permanent and temporary, less than 15,000 people, (15 per cent of fertile couples) are estimated to be engaged in the control of their fertility. In absolute and relative terms, this figure is still very low and leaves the vast majority of couples unprotected. An enormous sector of the population is still to be convinced of the beneficial results of planning a healthy family. No statistics are available of the regional and age variations of people accepting family planning methods.

There was reason for concern because between 1986 and 1989, the number of family planning acceptors dropped continuously. This trend was reversed in 1989. The number of persons accepting all methods increased substantially, with men undergoing vasectomies more than doubling from 897 men in 1988 to 1961 men in 1989.

The family planning services provided in 1989 have increased considerably as a result of the intensification of population planning activities in the country. However, this increase has not continued in 1990, in which a 15 per cent decrease could be recorded compared with 1989. The ultimate aim of the Government is to incorporate a population policy into the national policy by the end of 1991.

The 1991 Under Five Mortality Survey, held in 13 of the 18 districts of the country, provided information about the median birth interval between the last two live births and the two previous of earlier live births. It was found that the median number of months, irrespective of the age of the mother, for both the intervals between ultimate, pen-ultimate and anti pen-ultimate birth was 28 months or two years and four months.

However, for women in the age group 20 to 24 years, the average interval between last and previous live birth amounted to 27 months only. No secular trend could be detected in the median

birth interval, being around 30 months for children born in the years 1987-1991.

Table 2.6 indicates the percentages of the length of interval of the last or most recent live births. The table shows that in 1990, 26 per cent of the birth intervals were shorter than two years. This group of women, and those having their next child within a 30 month interval or less, should have received extra attention by Family Planning promoters. No clear trend can be detected from the figures in the table, although the data does seem to suggest that the percentage of pregnancies within a 24 month time gap has decreased in recent years. However, it is still too early to be able to detect the impact of family planning activities in the country.



Children and Women: A Demographic Summary

This report emanates from the Demographic Mortality Survey of 1991, which took place from March through June 1991 in the rural areas of thirteen northern Dzongkhags of the Kingdom of Bhutan. Although data were collected from 1,868 households containing 12,735 people, of which 3,163 were women aged 15 to 49. The population studied in this report is all women aged 15 to 49. Information is presented about the demographic and socioeconomic characteristics of these women, including estimates of their infant and child mortality and their fertility. Other information about the members of these women's households, diarrhoea treatment practices and women's status was also collected and is available at the Central Statistics Office.

Demographic Characteristics of Women aged 15 - 49

1. 63 per cent live in a household with 5-9 people.
 2. Average household size is eight people.
 3. 59 per cent are the only women aged 15-49 in the household.
 4. Age structure pattern is somewhat distorted by age heaping and selective omissions: there are too many women 45-49 and too few 15-24.
 5. Nearly half of women are married by age 19.
 6. The average age at marriage is 20.
 7. 74 per cent are currently married.
-

Socio-economic Characteristics of Women 15 - 49

8. 96 per cent are illiterate.
 9. 95 per cent are primary farmers
 10. 63 per cent live in a household with "medium" socio-economic status.
 11. 23 per cent live in a household with "low" socio-economic status
 12. In general, the larger the household size, the more likely to be "medium" or "high" socio-economic status.
-

Infant and Child Mortality

13. There is substantial under-reporting of children ever born, children surviving and children dead, especially by older women. For this reason, direct calculations of infant and child mortality severely underestimate the true rates.
 14. Data on age distribution of women, children ever born and children surviving can be combined in indirect estimate techniques which use model life tables. Bhutanese data were found to fit a "Coale-Demeny South" or possibly "West" model.
-

A Demographic Summary: Fertility

15. Few teenage women have given birth to a child, reflecting the average age at marriage of 20.
 16. By age 40 half of all women will have had five or more children.
 17. 27 per cent of all women will end the childbearing years with one, two or no children, due either to never marrying or to sterility.
 18. Women seem to have given better answers to the simple questions on numbers of children ever born than to questions about the precise dates of their last three births, so again indirect estimation techniques are appropriate to estimate fertility.
 19. The best estimate of the total fertility rate (TFR) is 6.2.
 20. The best estimate of crude birth rate (CBR) is 45.
-

Summary

The information record may, at first reading, suggest a situation which is quite negative. This, however, must be assessed in the context of a society emerging from isolation, with great difficulties of domestic communication and access to rural communities. In fact, as the expansion of village health worker services and outreach clinics clearly indicate, the actual achievements have been very positive indeed.

The success of the immunisation programme are outstanding, especially when viewed in the enormous difficulties imposed by terrain. There have been important successes, and on the basis of these the movement towards wider access to basic health services will accelerate. The Government's commitment is clearly articulated in the Seventh Five Year Plan documentation, and increasing emphasis is being placed on the need for community education to provide fundamental support for expanding services.

Figure 2.1

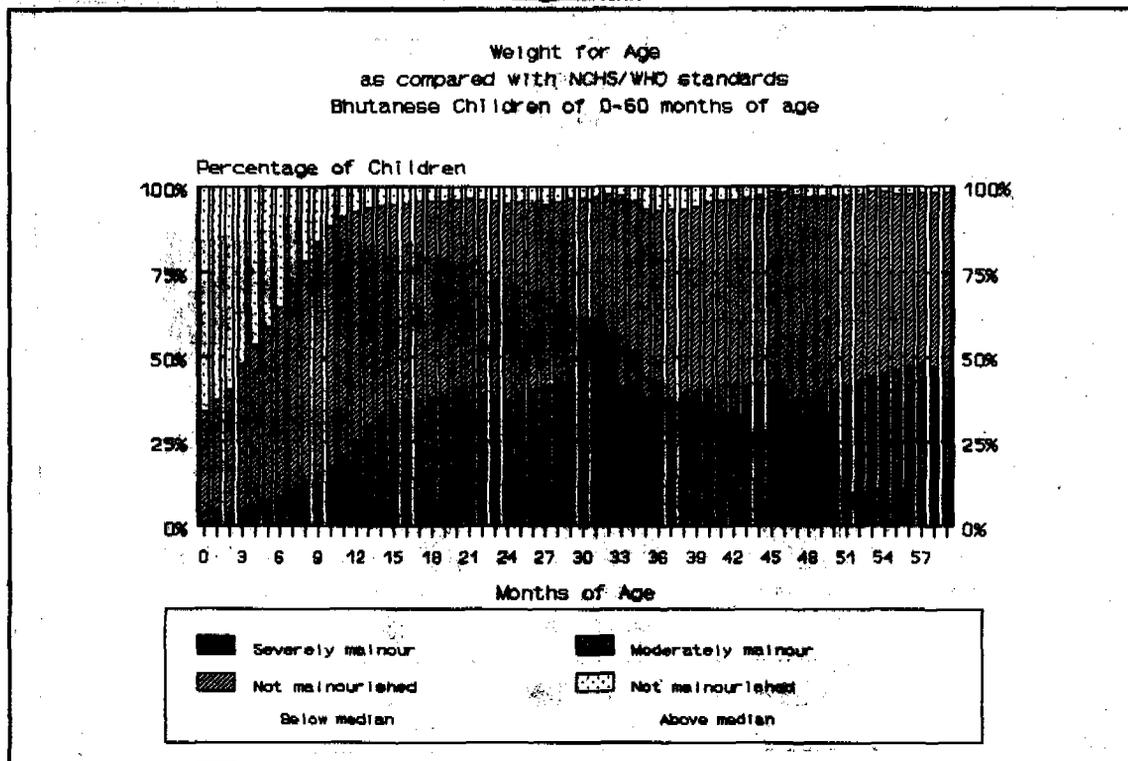


Figure 2.2

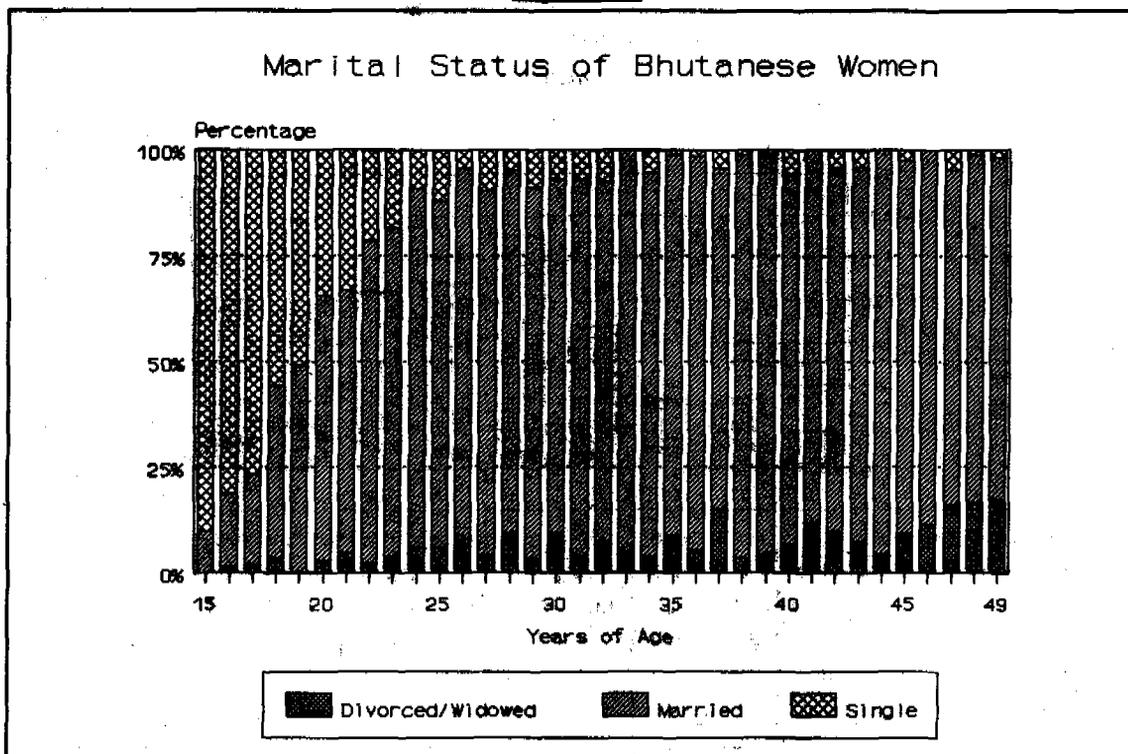


Figure 2.3

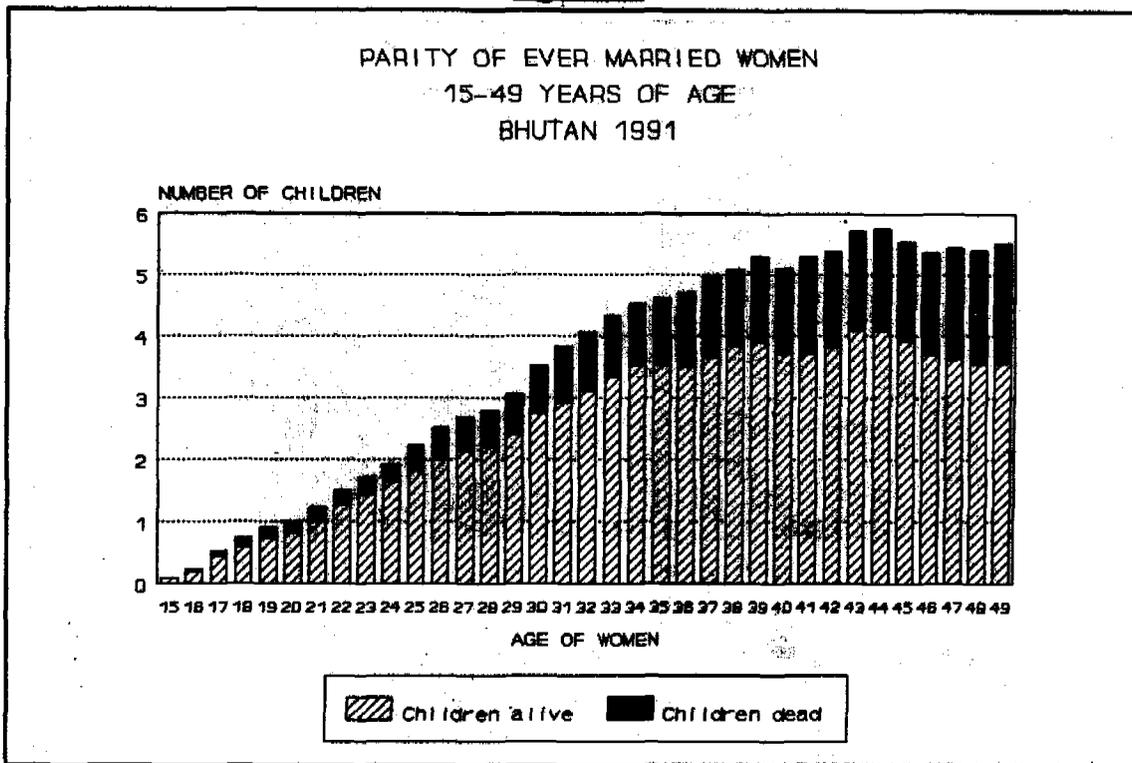


Figure 2.4

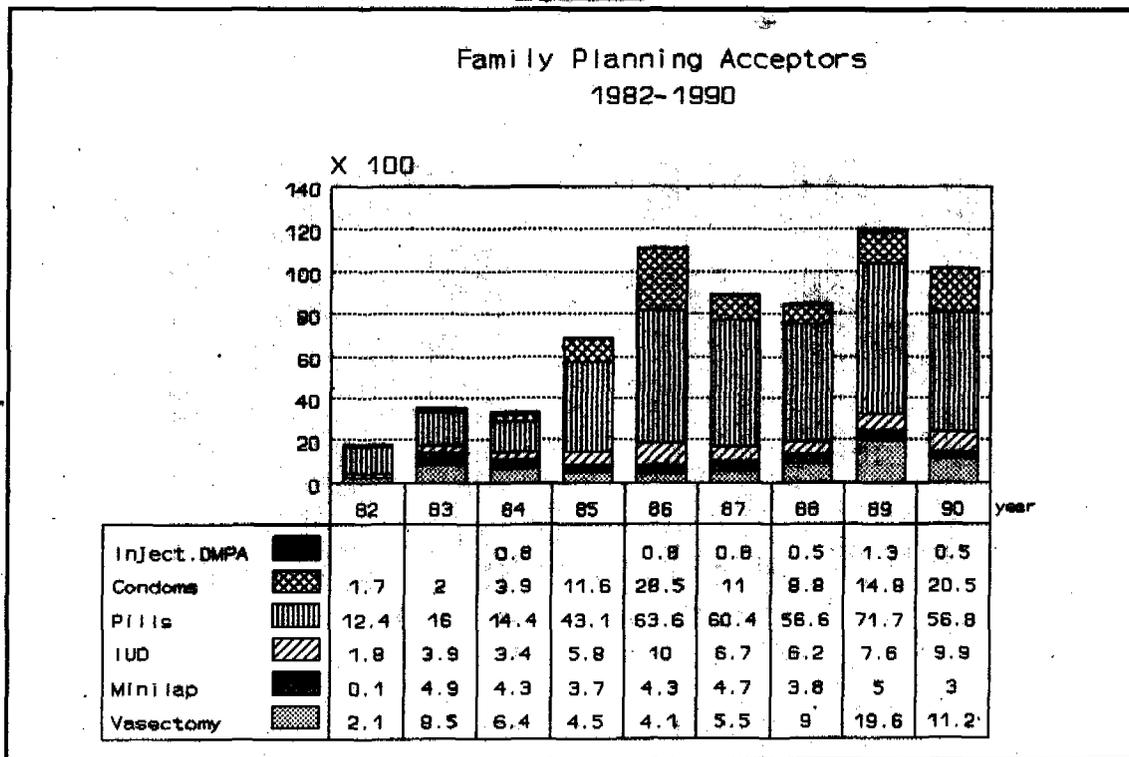


Figure 2.5

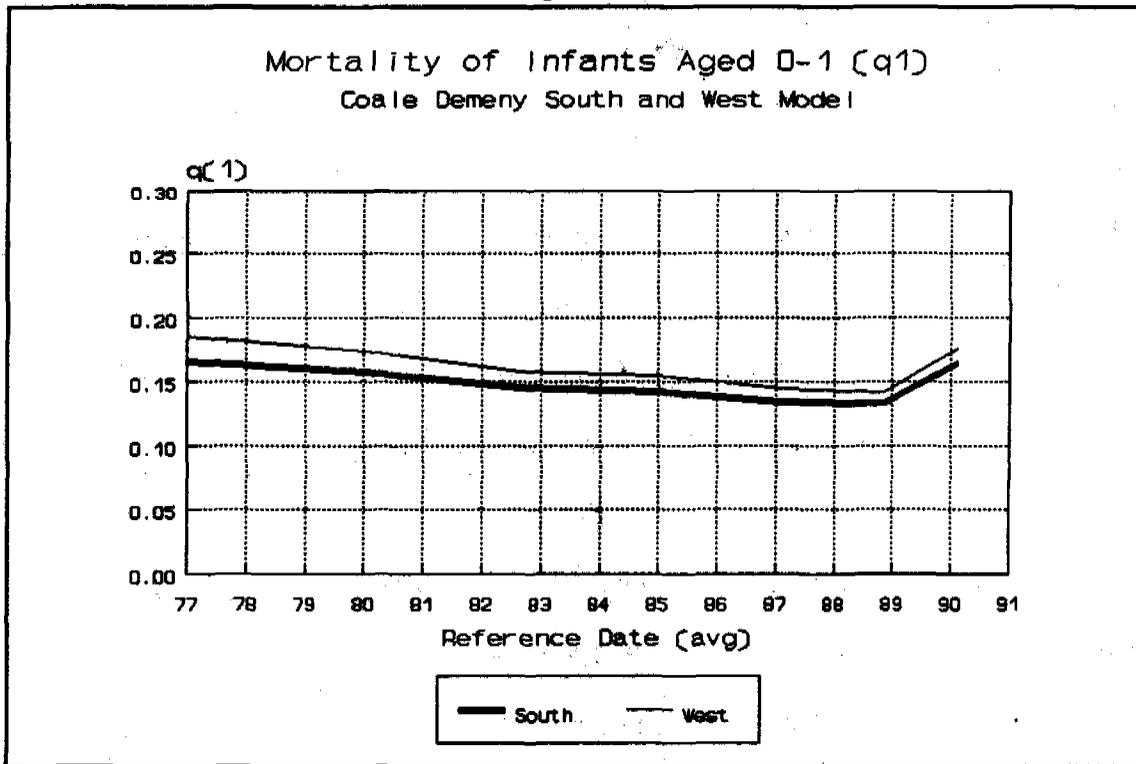
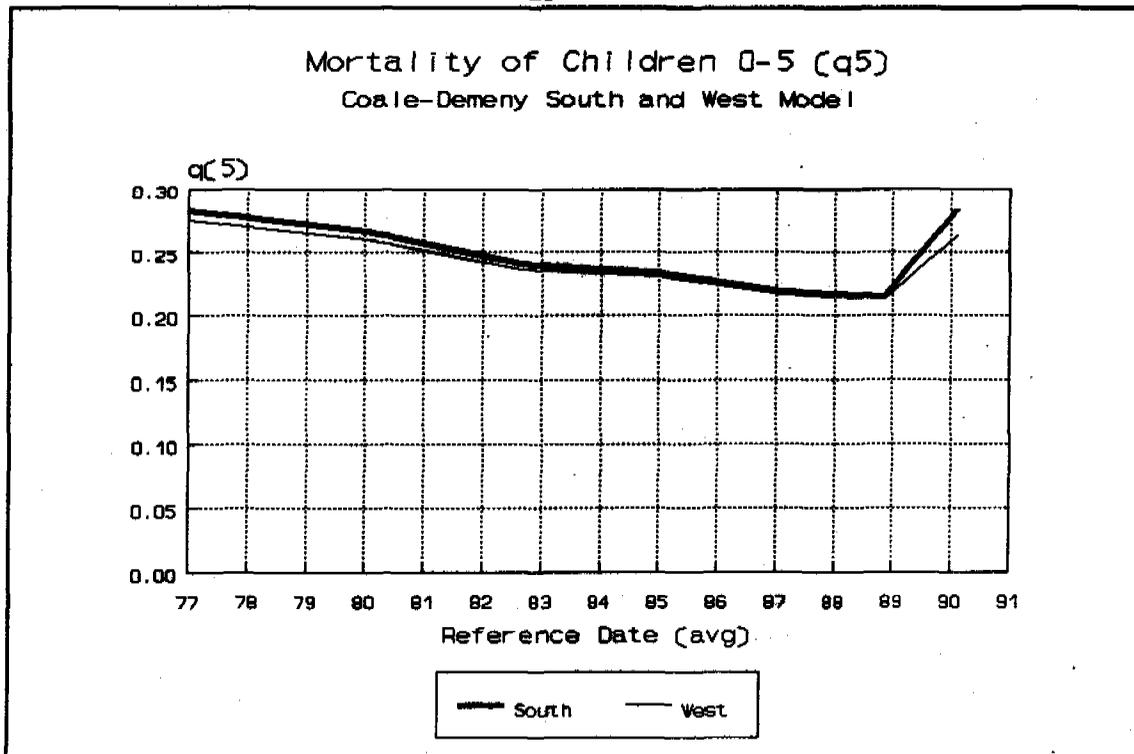


Figure 2.6



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HEALTH

Chapter 3



INTRODUCTION

Patients should be encouraged to seek treatment provided by the health department concurrently with any traditional method they may have sought. Many people are pragmatic about diagnoses and cures and are quite prepared to try one after the other until a cure is effected.

The lives of the northern Bhutanese are full of widely held beliefs which affect and motivate their actions and attitudes. This is certainly true for health matters and for the general well-being of the family and community at large.

One's condition in life is determined by the ever-changing and fluctuating balance between forces which are either good or bad. On a

sophisticated level, this is reflected as the struggle of enlightenment against ignorance.

At the folk level, it is protective forces opposed to dangerous forces. The spirit forces inhabiting the earth, ground, rocks, trees, the mountains and water have to be appeased, subdued and kept at bay. *Chortens*, prayer wheels, prayer flags on saplings and traps for ghosts are erected in these places where protection is deemed necessary. Every household needs the protection obtained through rites performed before the house altar.

Seen in this context, there may be a belief in the incompatibility of modern medicine and spirits. Whereas traditional healers intervene and establish a better relationship with the harm-causing agent, modern medicine, and particularly injections, anger the spirits.

In any sequence of successive approaches to different healers, the facilities offered by the basic health unit will therefore, tend to be the last resort when all other measures have failed. In cases where only modern medicine is capable of curing a disease, unwanted and possibly fatal delay in the provision of life-saving western health care may be caused by this attitude.

From this attitude, it can be seen that the western-trained health worker should put all efforts into establishing a beneficial relationship with patients with these beliefs. Patients should be encouraged to seek treatment provided by the health department concurrently with any traditional method they may have sought. Many people are pragmatic about diagnoses and cures and are quite prepared to try one after the other until a cure is effected.

In order to quantify the sequence of events mentioned, a yet unpublished study undertaken by the Central Statistical Office early in 1991 investigated the practices of treating diarrhoea in

children under five years old in the 13 northern Districts. In the surveyed group of 1,874 households, 609 cases of diarrhoea were reported among children under five years of age during the month preceding the interview. Of these, 609 cases or 15 per cent did not receive any treatment at all. Of the remaining 517 children, around 70 per cent were initially treated by a basic health worker or doctor with ORS, a sugar salt solution, or antibiotics. Only in 10 per cent of the cases did the first treatment consist of a "*Puja*" (religious ceremony).

It is remarkable that in half the cases treated by a "*Puja*", the ceremony was effective and the child was cured according to the parents. This compared with only one third of the children who recovered quickly without any treatment. 80 per cent were cured with ORT. For 93 per cent of the children who did not recover after the initial therapy, a second therapy was sought by the parents.

When a "*Puja*" was chosen in the second therapy, 68 per cent of the cases were cured against 72 per cent cure for ORT as second treatment. This was again according to the perception of the parents. Considering these figures, it is understandable that, according to the observations made by the parents themselves, the caretakers of the children do consider the religious ceremonies effective.

The data of the survey shows that in 90 per cent of the cases, the decisions of which treatment to choose were taken by the mother. Contrary to conventional thinking that women in Bhutan have a more traditional attitude towards modern health care than men, the data of the survey shows that fathers form a substantial number (25 per cent) of the decision makers in cases where caretakers opted for a religious ceremony. When western care was chosen, only two per cent of the decisions were taken by fathers.

Government Services and Facilities

The Primary Health Care network

Supported by Government		Indirectly Supported	Not Supported
The Modern (Cosmopolitan) System Village Health Worker Compounders (CHWs) Auxiliary Nurse Midwives Health Assistants Registered Nurses General Duty Medical Officers District Health Supervisory Officer District Medical Officer distributed in: villages, dispensaries, basic health units, District Hospitals, Regional Hospitals and Central Referral Hospital	The Buddhist Himalayan System <i>Smen-pa</i> (Compounder) <i>Dungtsho</i> (Doctor) distributed in: Dispensaries and National Institute of Traditional Medicine	The Spiritual Healing System <i>Lamas</i> (priests) <i>Gelongs</i> (monks) distributed in: Monasteries and <i>Dzongs</i>	The Village Healers <i>Gomchens</i> (private monks) <i>Tshikpa</i> (Astrologer) <i>Pow</i> (male witch doctor) <i>Pam</i> (female witch doctor) <i>Jakri</i> (healers in southern Bhutan) Bone setters

The number of hospitals, basic health units and dispensaries has increased only very modestly during the last years, as shown below. The total number of patients treated at basic health units and dispensaries has increased, on the other hand, by 80 per cent over the same time, indicating increased demand for health

services provided by the Department of Health.

Taking a population figure of around 700,000 people living on Bhutanese territory, the following table indicates the number of population per health facility unit in the year 1991.

Table 3.1: Number of people for every health facility

	1985	1986	1987	1988	1989	1990	Unit/Population
Hospitals	27	27	27	27	26	26	27,000
Hospital beds	857	915	922	932	944	944	742
Basic Health Units	65	67	68	71	71	71	9,860
Dispensaries	44	46	46	46	46	44	15,909
Patients ('000) treated at BHU/Dispensaries/Outreach Clinics	290	354	421	429	429	520	

In the middle of 1991, there were 72 basic health units and 44 dispensaries in the country, presently covering 60 per cent of the 190 blocks. 350 outreach clinics are operated from the hospitals, dispensaries and basic health units. A number of the existing dispensaries will be upgraded to basic health units in the future, thus consolidating and improving the quality of existing health facilities.

With some basic health units under construction or planned for completion before 1992, it is expected that the coverage will reach 75 per cent by the end of 1992.

On average, there is one basic health unit or Dispensary per 6,000 population and one outreach clinic per 2,300 population, covering the 190 blocks in the country. There are 948 Village Health Workers representing the Government health network in the villages although these are voluntary and not Government employees. This service is only available to less than 20 per cent of villages in the country.

Referral Health Services

The provision of comprehensive Primary Health Care is well advanced but it is beset by problems of an inefficient communication system and unreliable transport between patients and hospital/basic health units. This means that the referral and transfer from the village level to hospital is not always smooth-going.

It often takes several hours to walk from one end of a block or district to a health facility. This fact suggests that much more must be done to increase the coverage of the static health service network. One major difficulty is moving the seriously ill from the village to the nearest road-head, often hours or days walk away. The second major problem is the lack of an efficient tele-communications network between basic health units to the district or regional referral hospitals.

There is an urgent need for improved tele-communications between the basic health units and hospitals. A district level telephone network is gradually being developed, and there are plans to link the basic health units into the new communication system.

The referral of severe cases is made from village to basic health units, from basic health units to district hospital, and if necessary from the district hospital to a regional or the national referral hospital.

Government health services are free of charge to Bhutanese nationals. There are, however, other costs that inhabitants of remote villages have to bear while benefitting from the Government health care network. These are transportation costs and loss of wages during often time consuming travel to and from health units or hospitals. There are also costs for the board and lodging of family members accompanying patients to the city or the hospital which places a burden on the patients.

Outreach Clinics

The programme of Outreach clinics, was started in 1986 and to date there are 350 outreach clinics. Attendance at the basic health unit, and dispensaries with their outreach clinics appears to be growing more popular, as is emphasised by the continuously rising attendance figures of these health facilities.

The new strategy adopted by the Department of Health Services in the late eighties aimed at bringing the Extended Programme of Immunization and Mother and Child Health Care services closer to women and children, who had previously had to walk long distances to a basic health unit. Monthly mobile outreach clinics are operated by one or two of the health workers (health assistant, auxiliary nurse midwife, basic health worker) posted in the nearest dispensary, basic health worker or hospital, in co-operation

with the village health worker if there is one of the nearby village.

One of the positive developments of the outreach clinics is that they now offer a variety of Primary Health Care Services to the population. These include immunization of children and pregnant mothers, ante-natal care, the provision of iron tablets and deworming tablets, growth monitoring of children, nutrition promotion and nutrition supplements through WFP food provisions, treatment of diarrhoea with ORS packets, provision of deworming tablets and health education on improved hygiene and sanitation.

The outreach clinic is presently functioning as the most decentralised activity of the primary

health care delivery system. The Government's review of the present health delivery network, agreed that the clinics should be developed and strengthened further, increasing consolidation of a full team of health workers in the nearby basic health units.

To date, almost everyone in Bhutan has universal access to health facilities, (hospitals, basic health units, dispensaries and outreach clinics). The UCI survey in February 1991 revealed a hundred per cent of surveyed children had been in contact with the immunisation teams at least once and 95 per cent at least three times. Taking the vaccination services as a means to investigate the contribution of the other health facilities to the primary health care delivery system, the following table can be produced:

Table 3.2

Source of Immunization	1991	1988
Hospital	30 %	33 %
Basic Health Unit	35 %	37 %
Outreach Clinic	45 %	30 %

It is clear that the share of the outreach clinic is considerable with an increase from 30 per cent to 45 per cent in 1991, underlining the tremendous success and importance of the policy to bring health services to the people.

In the future, the intention is that communities will construct a simple clinic of their own. The purpose of these will be to ensure privacy during ante-natal care clinics and provide a store room for drugs and equipment. The villages are expected to contribute the labour and locally available materials. Additional external support will be provided as required for roofing and other materials.

An alarming development has set in, however, in the last two years caused by the civil unrest in the southern part of the country. The closure and suspension of health facilities in these southern areas, where more than one third of the population of Bhutan lives, is interfering with the implementation of a desired quantity and quality of the health care delivery. It is feared that the extraordinary success of the past few years in the area of public health care, culminating in the achievement of UCI in 1990, will not be sustained nationwide unless the situation in the south changes for the better in the very near future.

Village Health Workers

The position of a village health worker is prestigious, indicating a role in village leadership. There are certain other privileges attached to the post, such as dispensation of community labour. They are issued with supplies of medicines (aspirin, vitamins, deworming pills, ORS), and may be responsible for as many as a thousand or more people over a large area of scattered settlements.

The Government of Bhutan has instituted a nation-wide programme of village health workers. This presently covers 16 of the 18 Districts. Less than 20 per cent of the 5000 villages have a trained village health worker. Village health workers are unpaid, but receive one to two weeks initial training and annual or biannual refresher courses. The training of village health workers has fallen behind target as a result of restructuring, which has transferred training to district level.

The position of a village health worker is prestigious, indicating a role in village leadership. There are certain other privileges attached to the post, such as dispensation of community labour. They are issued with supplies of medicines (aspirin, vitamins, deworming pills, ORS), and may be responsible for as many as a thousand or more people over a large area of scattered settlements.

There are positive signs that the promotion of disease prevention, of sanitation and hygiene and information on diarrhoea and oral rehydration are proving effective. The most common service provided by the village health worker is basic medical assistance. According to a survey in two blocks in Shemgang in 1990, one third of the population is using the service. The extremely low involvement of village health workers in ante-, peri- and post-natal care is probably due to the fact that most village health

workers (91 per cent) are still male. However, other reasons are still to be identified as to why at this moment, the village health worker does not seem to be the first person, villagers consult when simple primary health care is required.

As is shown in the Diarrhoea Practices Study, less than five per cent of the diarrhoea cases were treated by the Village Health Worker. This could be much higher and in this way the village health worker could relieve the basic health unit and hospital staff of a substantial part of their workload. At the same time, universal treatment of simple diarrhoea cases by the village health worker with oral rehydration therapy would save the caretakers of the children a time consuming trip to the basic health unit or Hospital.

At present, recruitment has favoured middle-aged men; the ratio in 1989 was 729 men to 69 women. Some districts (Mongar, Shemgang) have village health workers who are also traditional village healers (*Gomchen*). This bias could be a result of the difficulties women face attending training and refresher courses. They may have responsibilities for small children, have difficulty travelling long distances over the area and being away from home. They also have difficulty confronting and instructing strangers and men older than themselves. None of these difficulties are insurmountable, because, in cases where young girls of 16 and 18, have been selected as village health workers, they have proved equal to the task.

There are strong indications that encouragement to recruit women, and a policy to make village health worker areas smaller and more local, would represent a very effective health development strategy.

Only one district (Mongar) has so far efficiently trained more than 100 voluntary village women as health educators in maternal health. The main emphasis of their training is on risk detection and health care during pregnancy

and delivery. However, this training programme has not yet been sufficiently evaluated, although several officials have advocated increasing the number of women village voluntary health workers in other districts. So far, this programme of women village health worker's has not been actively promoted in other districts.

There are strong indications that encouragement to recruit women, and a policy to make village health worker areas smaller and more local, would represent a very effective health development strategy.

Health Training

The pre-service training for health workers is centralised in the Royal Institute for Health Sciences (RIHS) in Thimphu. After health care workers are posted in the field, they receive in-service training by the National Institute of Family Health (NIFH) in Geylephug near the border with India. The target of the RIHS is to train 255 Health assistants, Auxiliary Nurse-Midwives and Basic Health workers by 1992 so as to fully staff all the basic health units and

expand the village health worker network. 160 basic health unit staff have been trained so far, which is over 60 per cent of the planned output during 1987-1992.

Despite this number, the annual output of the RIHS will not be sufficient to staff all the basic health units and community health teams with a full team of a health assistant, a basic health worker and an auxiliary nurse midwife by 1992. At present, only 68 per cent of the basic health unit posts are filled and there is a 32 per cent shortfall. It seems especially difficult to recruit enough female Auxiliary Nurse Midwives in rural postings. Once posted, they tend to leave, when they marry. Ante - and Post natal care would benefit by a substantial increase in female MCH workers, who have had a very thorough midwifery training.

In 1991, the output of the RIHS was 46 health workers of different categories. Comparable numbers graduated in previous years - 56 in 1989 and 42 in 1990.

A breakdown in the different categories of peripheral health workers graduating from the RIHS is given below:

Table 3.3

Category:	Training Length	1989	1990	1991
Health Assistant	24 months	19	14	7
Basic Health Worker	18 months	11	16	-
Auxiliary Nurse Midwife	24 months	8	9	16

Immunization

Immunization services are offered weekly in hospital, Mother and Child Health Clinics and basic health units and monthly in dispensaries and outreach clinics.

The Immunization programme in rural areas is carried out by the rural health workers posted in the basic health units. Immunization coverage of children under one and pregnant women has been gradually increasing. This is especially so over the last three year period, when the

immunization programme was accelerated through the significant increase in the number of outreach clinics (from 100 to 350 clinics). Through these additional outreach clinics, immunisation services now reach a majority of the population, including people living in the remotest areas. These activities culminated in 1990 in the achievement of "Universal Child Immunisation" in Bhutan. Based on the most strict criteria, it was assessed that 84.7 per cent of the under one year old children had been vaccinated against Tuberculosis, Diphtheria, Whooping Cough, Tetanus and Measles. The figures are even higher when the age limit was stretched to one year and fifteen months. Below is an overview (1985-1990) of immunisation coverage of children under a year.

The National Assembly passed a resolution in February 1988 stating that all school children should have a valid immunisation card when starting school. This information has been disseminated from district headquarters to block and village leaders to the villagers.

The Government has received external support to procure vaccines, vaccination and cold chain equipment and transport. Newly purchased steam sterilisers are used by health workers at all health facilities, and sterilisation methods have greatly improved. Training is provided on proper storage and distribution of the vaccines from central to regional and district stores to ensure a successful implementation of the programme. All basic health units are now supplied with kerosene fridges to keep adequate stocks of vaccines, and the temperature is usually monitored twice a day by health workers.

The horizontal organisation of the EPI programme has also proved instrumental in opening up a variety of primary health care services through the creation of the 350 outreach clinics. These services include, among others, ante- and post- natal care, growth monitoring, distribution of vitamin A and deworming tablets and health education.

Health Promotion Activities

The results of the EPI survey of 1991 demonstrated that there is still a wide gap in the health knowledge of the general population. During their pre-service training in the Royal Institute of Health Sciences, all categories of health workers are trained in health education activities. These activities are intended to be included in the daily preventive and curative health services offered by the health workers posted to the basic health units, dispensaries and outreach clinics. However, there is still limited scope in the curriculum for practical training with a special focus on health education methods and appropriate communication techniques.

Not all villages have a trained village health worker to actively support the health workers in the mobilisation activities. Basic health units and dispensaries lack a health education kit of flip charts, posters etc, covering the major diseases and preventive measures. Health workers posted to districts where they are unable to speak the local language, have an additional difficulty in promoting effective health education. There is also room for improvement in the utilisation of alternative sources of health education such as radio, videos, newspapers and posters.

The workload of the rural health worker can be extremely heavy, requiring reporting in a variety of different health programmes (EPI, MCH, Tuberculosis, Malaria, vital statistics, essential drugs, etc.) on a regular basis. They are also obliged to carry out regular monthly outreach clinics. In addition to this, home visits are required in order to report vital statistics of birth, death and household members etc.

Measures are now being taken to streamline training in health education at district and basic health unit level as an attempt to improve the situation through a nationwide Information, Education and Communication for Health (IECH) programme. Health workers do educate

people on important health issues, both individually and in groups. The growth of the service and attendance is evidence that messages are being widely accepted.

Efforts are being made to establish links between the modern health services and the traditional systems by trying to involve Buddhist monks, lay monks and healers as health educators, working with special focus on immunisation, diarrhoea management, hygiene and sanitation and nutrition/growth monitoring promotion. In the last two years, one national and three district workshops have been held between health staff and the religious community in an effort to promote greater collaboration in the field of health education. Experience from these workshops show that because of the wide variety of traditional and religious healers in the villages, health promotion activities must be individually tailored for each target group.

Supply of Essential Drugs

Every year, Bhutan purchases drugs worth more than US\$ 730,000. The object is to correct the major causes of morbidity, such as diarrhoeal diseases, acute respiratory infections, worm infestations, nutritional deficiencies, skin diseases, malaria and tuberculosis in women and children.

In 1986, Bhutan set up a national essential drug supply unit, supported by WHO and bilateral donors, with the aim to rationalise and strengthen all components of Bhutan's drug supply system. Over the last four years it has developed and streamlined a list of 253 essential drugs. This full standard list of drugs is supplied to the national referral hospital and to the additional two regional hospitals. Each of the 18 District hospitals is supplied with 198 different drugs, while the 71 basic health units are each supplied with 91 different drugs. There are

approximately 950 village health worker's and each is provided with a kit of 10 essential drugs.

The Bhutanese Essential Drugs Programme was evaluated by a joint WHO and DANIDA mission in 1990 and the major findings were that an average of 80 per cent or more of all essential drugs and an average of 90 per cent of the core essential drugs allocated to district hospitals, basic health units and dispensaries were found available at health facilities. The report concluded that the objective "to make available an adequate supply of drugs" had been achieved, although some problems with procurement and monitoring were to be tackled.

Every year, Bhutan purchases drugs worth more than US\$ 730,000. The object is to correct the major causes of morbidity, such as diarrhoeal diseases, acute respiratory infections, worm infestations, nutritional deficiencies, skin diseases, malaria and tuberculosis in women and children. The Government of Bhutan procures 45 per cent of the drugs from India, while an additional 25 per cent is supplied through reimbursable procurement from UNICEF. The remaining 30 per cent of essential drugs are supplied through external aid, 20 per cent from UNICEF and 10 per cent from the Leprosy Mission.

Distribution of Essential Drugs

All health units are required to fill in six monthly indent forms on drug supplies and stock balances, which are regularly sent back to the national essential drug co-ordinator. All 27 hospitals are provided with their annual requirements, directly based on their updated stock balance. The 71 basic health units however, get annual supplies of pre-packed drug kits according to their annual patient attendance figures. Individually packed drug kits for the basic health units has at this stage proved too complicated with the present manpower constraints at the central warehouse and at the two regional stores. Each district is provided

Health

with a surplus stock of the most important drugs, and the basic health units make use of these additional supplies as required.

The annual requirements for essential drugs are distributed from the central warehouse to the health facilities in each district once a year. This is usually during the three-four month dry period in the winter season, when movement throughout the country's difficult terrain is easier. As more than 60 per cent of the basic health units and dispensaries are situated several hours or days walk from the nearest road, the essential drugs have to be transported by numerous porters from neighbouring villages before reaching their final destination.

The health assistant of each basic health unit and dispensary is responsible for maintaining a proper drug store within the basic health unit/dispensary. They have to fill in and dispatch the six monthly indent forms, and to dispose of expired drugs in accordance with the rules set up by the essential drugs co-ordinator. In-service training workshops are presently being organised by the staff of the Essential Drugs (Unit).

Especially in basic health units and dispensaries, problems of under and over-

stocking still occur. The district level buffer stocks are still not being used actively by health workers posted in remote areas. This is mainly due to a lack of communications. The people who utilise the rural health service network do not always comply with the drug regimes, either due to lack of adequate information by the health workers, or as a result of ignorance about the use of drugs in general. Efforts are under way to improve packaging and labelling of drugs for patients attending rural health posts.

Use of Drugs

The above mentioned report summarised the study on the rational use of drugs and concluded that most paramedics scored a reasonable high mark, averaging 63 per cent, in the area of knowledge assessment. It was noted that those who received training fared better (66 per cent) than those without training (40 per cent) and also prescribed fewer drugs (0.33 per prescription versus 2.00 per prescription). It was found that 26 per cent of the drugs prescribed were antibiotics and only in nine per cent were injections given to patients. This is a relatively low figure compared with other developing countries, but tallying with the observations regarding this issue as mentioned in the beginning of this chapter.

PROGRAMMES FOR MALARIA, TUBERCULOSIS AND LEPROSY

Malaria

Malaria is endemic in all southern districts of Bhutan, where more than one third of the population lives. A vertically organised malaria control programme aims at controlling the disease through the southern hospitals, basic health units and outreach clinics, coupled with an intensive insecticide spraying of the endemic areas. Unfortunately, due to the disturbances in the southern belt of Bhutan, the peripheral health

facilities were closed in 1990 and services suspended in the main area where malaria is a problem. Consequently, the control of malaria has suffered a tremendous setback as is demonstrated by the more than halving of the number of blood films examined for malaria in 1990 (see table 3.6). The rise in malaria cases admitted to the hospitals in 1990 and the recent resurgence of malaria in a few northern districts are the results of the ailing malaria control programme.

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The annual malaria morbidity recorded in hospitals shows that a large portion, 47 per cent in 1990, of those suffering from malaria are

children under 15 years. Children below five represent 12 per cent of the case load admitted to hospitals.

Table 3.5: Hospital Reported Mortality due to Malaria in 1989

Year	Age Groups				Total
	< 1 year	1-4 years	5-14 years	15+	
1989	201	900	2028	5434	8563
1990	237	1040	2656	5630	10753

Of the total population living in the malaria endemic areas in 1990, 20 per cent were checked for blood film examination, a drop from the 40 per cent checked in the year 1989. These blood films were taken from patients who came to the health facilities with health complaints. Around 27 per cent of the blood films in these two years were found positive.

Out of the positive films more than 43 per cent were registered as Plasmodium Falciparum, the parasite that can cause cerebral malaria, the most serious form of malaria. Bhutan is presently not supplied with adequate drugs to conquer present drug resistance, which is one of the most serious consequences of the disease.

Table 3.6: Percentage of population tested for Malaria

Year	Population in the malaria zone:	Blood Films Examined	Percentage of population tested	Percentage of tests positive	P. Falcip. Relative prevalence
1988	173,404	51,164	30 %	22 %	54 %
1989	176,653	71,653	41 %	27 %	43 %
1990	176,270	33,973	19 %	28 %	43 %

Tuberculosis

Tuberculosis remains fairly widespread in both adults and children in Bhutan. Current figures show a slight increase from 1988 to 1989 in the number of old TB cases registered, from 2,135 to 2,566 cases, covering all age groups. In 1988, 1,081 or 18 per cent of these were children

under 15 years of age, while in 1989, the percentage of children under 15 years was 20 per cent. Of the new cases registered as having TB, however, there is a significant decline in the number of children under 15 years, from 34 per cent in 1988 to 18 per cent in 1989, which is an indication that the tuberculosis control programme is becoming more effective.

Health

Leprosy

The National Leprosy Control Programme has been in operation since 1970, covering the whole country from six centres. The programme is supported by two NGOs, the Leprosy Mission and the Norwegian Santal Mission, and some assistance is also received from WHO.

Since 1982, a strategy of domiciliary Multi-Drug Therapy (MDT), using the WHO regime, has reduced the caseload of patients on treatment from 2989 to 252 (at the end of 1990). An additional 1,987 patients are under continuing annual post-MDT surveillance to detect cases of late relapse or progressive nerve damage and their household contacts are regularly examined to exclude early disease.

Other major priorities include refresher training courses for all levels of health staff in preparation for the integration of the programme into PHC; and increasing efforts to prevent deformity and the rehabilitation of the disabled.

Infrastructure in the Nutrition Sector

The Government's policies and programmes on nutrition have been outlined in a National Assembly Resolution passed in November 1988. The basic principle is to increase local food production to improve the means of providing the rural population with a better diet. Awareness of the importance of better food production is to be created through an alliance of all concerned sectors from national to district levels. These sectors include the Departments of Agriculture, Animal Husbandry, Health Services, Education, Information, National Women's Association as well as among the general public.

The Department of Health Services has a special role to play through the promotion of regular monitoring of growth in children under five years in basic health units and outreach clinics, and educating mothers on the need for improved dietary and weaning food practices.

However, in spite of these stated policies and practices at national level, there is still much to be done in creating active interlinks between the above-mentioned sectors, as well as between national and district officials in each sector, and in strengthening the capabilities of the health workers as communicators of health and nutrition messages.

The predominantly rural population still lacks the necessary knowledge about the importance of eating more food, and more varied food. They are also not well informed about the improvement of hygiene and sanitary habits.

The Government's nutrition programme is at present situated within the Public Health Division, in the hands of two nutrition professionals, including a local Nutrition Programme Officer who followed a one-year community nutrition course abroad. UNICEF is the major agency supporting the Government's nutrition programme, whose main elements are to improve awareness and nutrition habits especially among pregnant women and children but also among population.

Deworming tablets are supplied and distributed to the rural households from health workers in the basic health units, dispensaries and outreach clinics and by village health workers. School children are dewormed twice a year throughout Bhutan. Pregnant and lactating women and anaemic and malnourished children are given iron folic acid tablets by the rural health workers. Vitamin A capsules are supplied bi-annually to all children under five years of age and to all post-natal women attending health facilities.

At present, the predominantly rural population still lacks the necessary knowledge about the importance of eating more food, and more varied food. They are also not well informed about the improvement of hygiene and

sanitary habits. Information about the importance of eating leafy vegetables, proper weaning food and growth monitoring of children is still scarce. This indicates that health education messages, from health and agriculture workers to women, is still far from adequate.

Summary and Conclusions

The Government is committed to the global goal of health for all by the year 2000 and has incorporated the health sector goals for the 1990's in their Seventh Five Year Plan and in the National Programme of Action for children and women. The Government's health budget has seen a large decline in input during the 20 year period from 1970-1990, from 8 per cent of the national budget in 1970 to 3.8 per cent of the 1987-1991 Development Plan. The Seventh Plan has, however, increased the allocation to health to eight per cent of the national budget. The Government inputs are mainly recurrent, such as staff, upkeep and maintenance of vehicles and provision of daily and travel allowances to health staff. Multilateral and bilateral agencies support the Government in the health sector with inputs for health infrastructure development, supply of essential drugs and vaccines, support to health education, community development activities, short term training of health workers, fellowships abroad etc.

The Government has recently begun bilateral collaboration with a new partner, DANIDA, who will provide more than US\$ 10 million towards health during 1991-1997. UNICEF's support of the Government's health sector is in the field of EPI, Control of Diarrhoeal Diseases (CDD), Ante Respiratory Infections (ARI), Mother and Child Health (MCH), training of health workers, advocacy and social mobilisation, provision of essential drugs, improved nutrition and IDD control. The annual support from UNICEF to the health sector is close to one million dollars.

The two traditional health care delivery systems (Indigenous and Religious) in Bhutan

are clearly fulfilling a need and are partly complementary to the still expanding and developing "western" system. There are, however, many patients who prefer traditional forms of treatment.

The health sector infrastructure needs further expansion, not so much in building infrastructure, as in reach-out capacity, increased staffing and in training. These problems will not be solved in the near future considering the present movement of health personnel in and out of the job.

The village health workers are not involved enough in the health care delivery system. They could relieve the often overburdened basic health unit and hospital staff from a large number of patients suffering from simple diseases and needing Family Planning material. This would mean that village health workers were available in adequate numbers, were properly trained and working in an adequate community setting.

Although the Public Health Centre is designed as horizontal, the success of some of the programmes (Leprosy, Malaria, EPI and essential drugs) seems largely due to the clear targets and the vertical structure or to the well staffed central unit of these particular sectors. Integration of all specific programmes may have a negative impact if not implemented very carefully.

The success of the future programmes will rely heavily on the involvement of the communities. An informed demand for available services and motivated behavioural change will be achieved only through the concerted use of all means of communication to build community awareness and understanding of basic health information. The Government's commitment is clearly articulated in the Seventh Five Year Plan documentation, and increasing emphasis is being placed on the need for community education to provide fundamental support for expanding services.

Figure 3.1

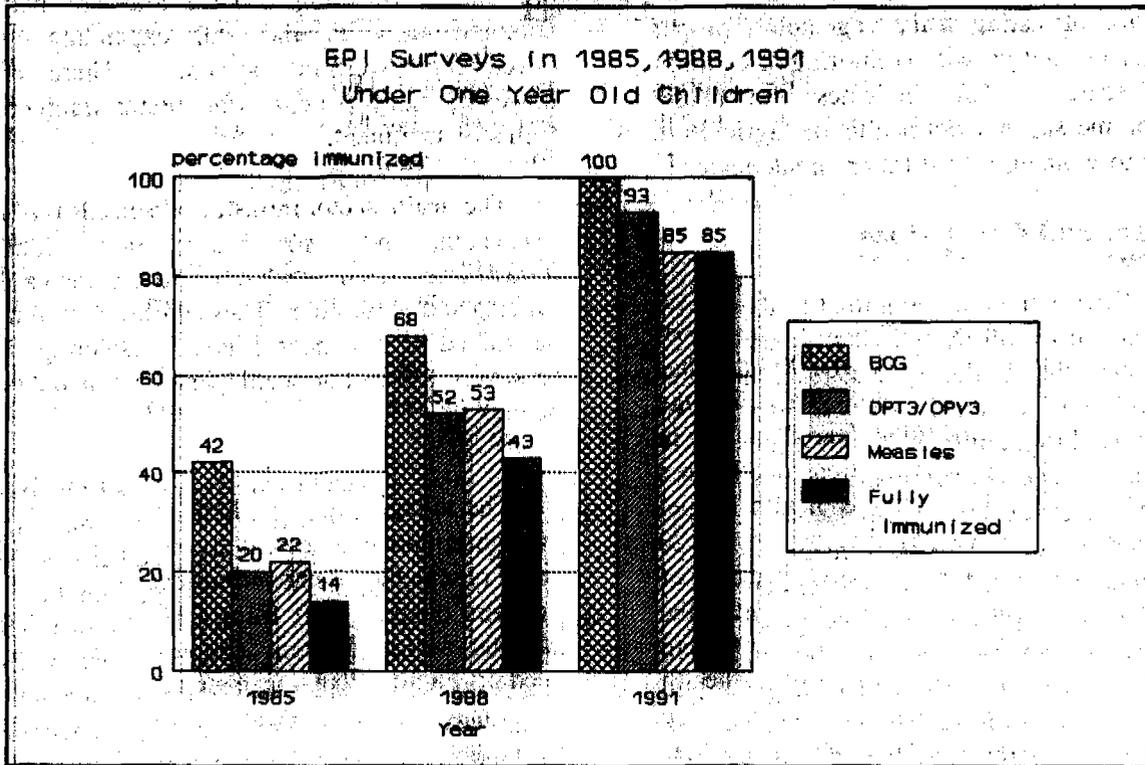
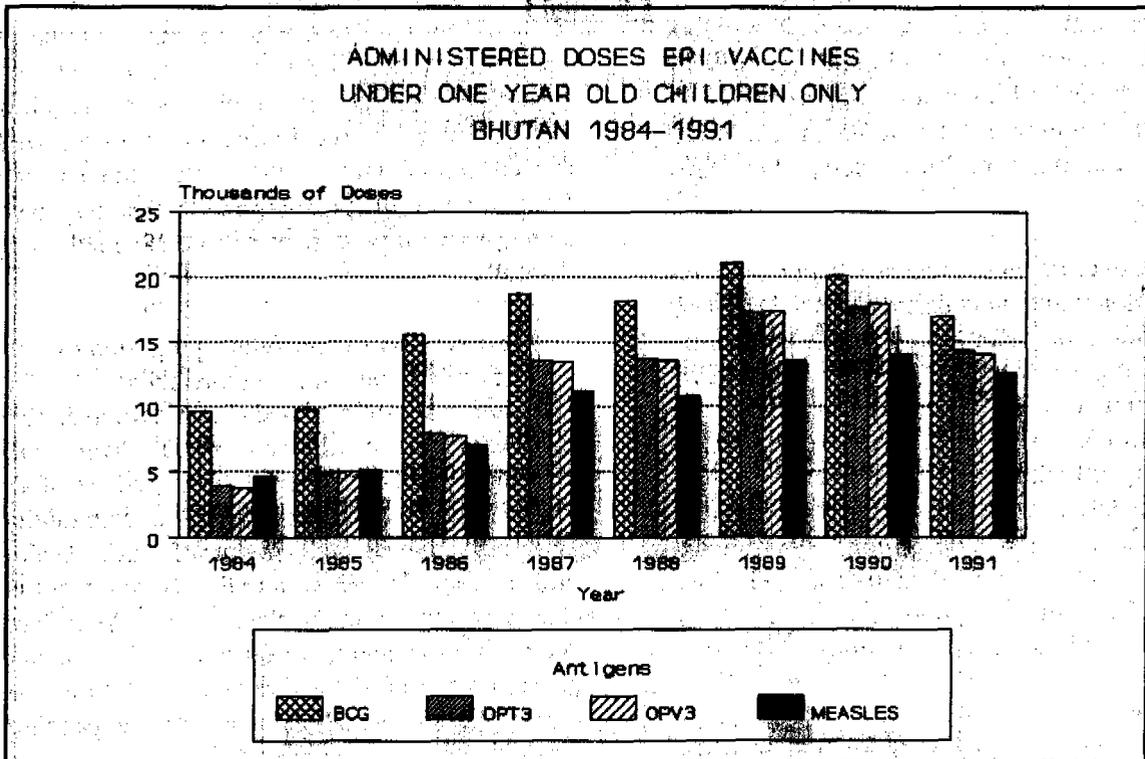
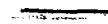
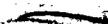
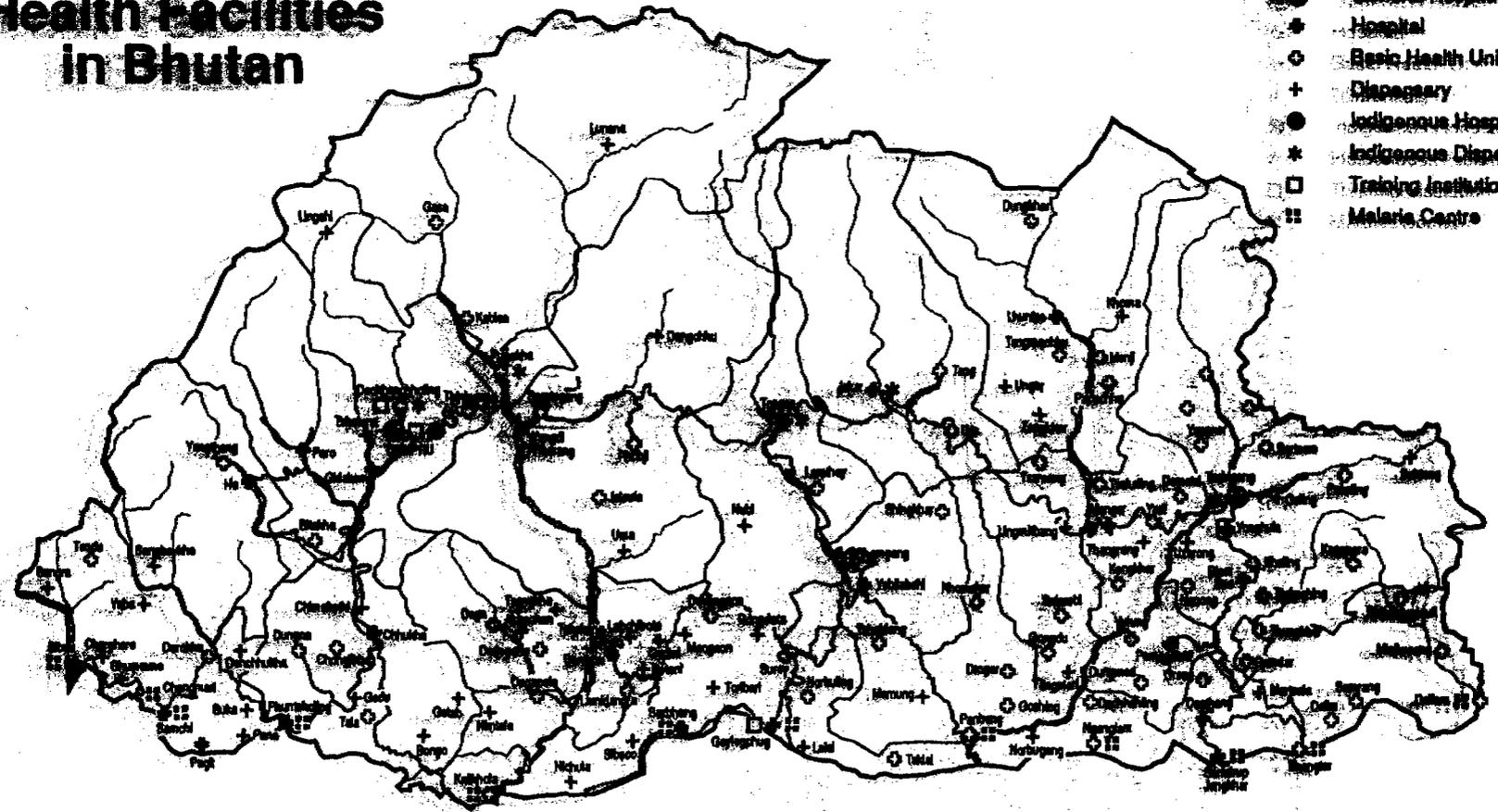


Figure 3.2



Health Facilities in Bhutan

-  Dzongkhag Boundary
-  Road
-  Unimproved Road
-  River
-  General Hospital
-  Hospital
-  Basic Health Unit
-  Dispensary
-  Indigenous Hospital
-  Indigenous Dispensary
-  Training Institution
-  Malaria Centre



0 25 50 km

* This map is used solely for the purpose of showing the existing facilities/services. The boundaries have not been officially endorsed.

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UGYEN, THE YAK HERDER'S DAUGHTER

It must be time to get up. Peeping through a hole in our yak skin tent I can see the snow capped peaks tinted orange by the early morning sun. Our yaks are grunting in the shadows, scattered nearby. I would like to stay a bit longer snuggled close to Ama, Apa and Pema where it's warm and safe. But they will be angry if I don't do my work.

It has been two months since we left our village near Gasa at the beginning of winter; here it is not so bad, but still very cold. My parents sleep in their many layers of clothing. Little Pema my brother looks weak, I hope he won't have diarrhoea again today. He has become so thin!

The yaks nibble morsels of grass through a fresh blanket of snow. Their breath is warm. I gather frozen wood to make the fire. Numb hands struggle to strike a match. The water in the pot is frozen solid.

Pema has stopped crying. Ama must be feeding him just as the yaks suckle their babies outside. It was late when Ama and Apa returned last night. Sometimes they have to walk so far in search of good pasture.

The rice is cooked. We eat quickly and silently, warmed by the food and fire. When I was at school we preferred to talk even while eating, but all that is in the past. Apa looks anxious to leave. They take *bangchus* of rice and yak meat curry with them, and a flask of *suja*. The sound of clanking yak bells become fainter as they move over the ridge for another day.

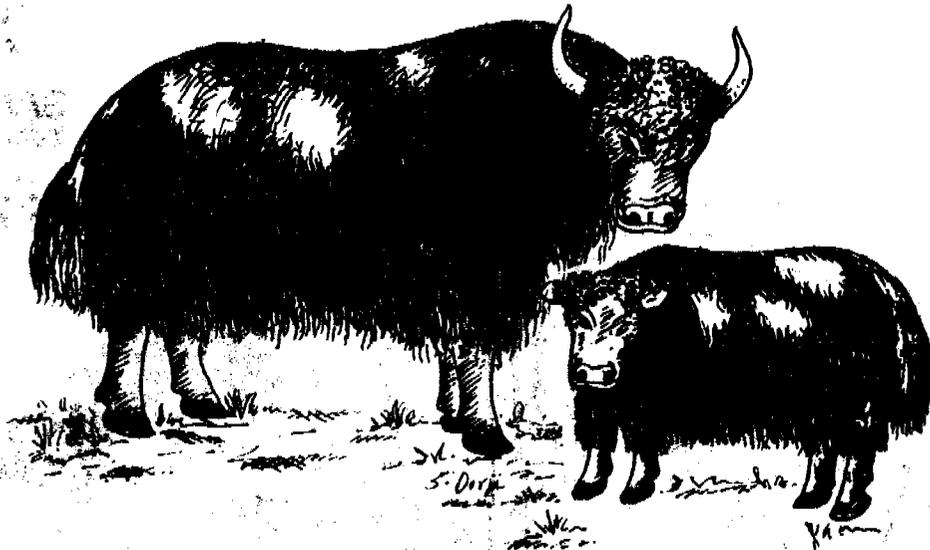
It's just me and Pema now. No parents, no yaks for company. Folding all our heavy blankets and rugs I can imagine how I was ever so cold. The strings of yak meat brush against my face. I should, put them outside. *Doma* spit stains the ground. It smells strong and makes Apa's teeth red. Pema is pulling at my hair. Strapped to my back, he can see everything and I can do my work. We go outside; the tent is so hot and stuffy when the sun shines.

The *bangchus* glisten with oil in the sun. I wipe them quickly with a rag and place them back inside the tent. Wild animals might come and take them.

Pema must be sleeping. He is falling down to one side. I will leave him here while I fetch wood.

It's so hard to find good branches here and this axe leaves blisters on my hands. If Dorji was here he could help. Dorji is my brother. He is in class six now. Dorji is so clever. Boys are lucky they go to school. I only went for two years but after class one Ama and Apa needed me to help in the house. Someone has to cook, fetch wood and water while they move with the yaks. Ama says I will have a husband too some day, I do not need to read or write and spend time at school.

Pau! this wood is so heavy on my back, not like Pema. It does not pull my hair and gurgle in my ears. The sun is so hot now! I will have to put down the load and take a rest. The water from the stream cools me down and quenches my thirst.



Pema and I finish this morning's rice for lunch. We eat it with some chilli too. I wonder what Dorji is eating at school today, maybe *ema datsi*. It takes five days' walk to get to Gasa from here. Pema, I could take you to the *Neejum* and then you wouldn't be sick. Our other two babies died, you know. They had diarrhoea but the *neejum* could not save them. It happens in most families. What to do? Anyway, we can not move from here until the yaks are ready to go.

Ama is teaching me to weave from yak hair. Here I would like to write to Dorji and my friends but I do not know how to read or write. Well I am only nine. Apa says reading and writing doesn't put food in your stomach. I bet he is right.

Pema and I are down at the stream. We will collect two buckets of water to take back. The end of my *kira* always gets wet. Water splashing on my feet washes some dirt away. Water is so heavy! If you were big and strong you could carry one bucket. Pema, you are a boy, you will go to school like Dorji. Maybe you will work in Punakha and become a Dasho.

Once at *Tshechu* time we went to Punakha. We walked down to Damji and slept with my cousins. We arrived in Punakha the next day Apa took three ponies as he had many things to sell).

There are so many shops in Punakha. There are no yaks at all but some places where you can go to eat food but you must pay money. I had money, Dorji showed me what to buy. We got chewing gum. I felt shy, there were so many people - it was frightening ■

WATER & SANITATION

Chapter 4



THE FRAMEWORK FOR ANALYSIS

"Only 25 per cent of the rural population are using water from piped supplies, which can be described as safe... About 60 per cent of the households have a latrine, but of these, only 15 per cent qualify as improved latrines. Most are not hygienic."

This analysis is based mostly on information contained in the sector evaluation and study reports which are listed in the References. The contents of these reports was complemented by first-hand experience on visits to a good number of project villages and through discussions with sector personnel at all levels.

SITUATION STATEMENT

Communities lack the required skills, as well as tools and spare parts, and they were not sufficiently involved in the initial planning or the design of schemes and, therefore, do not feel much responsibility towards maintaining the water supply schemes. At schools latrines are often used by more people than designed for.

By 1990, the supply of piped water reached 40 per cent of the population but only 60 per cent of the schemes supplied safe water. Many of the completed schemes are no longer fully functioning: 16 per cent are completely out of order and 31 per cent require major repair. This is largely due to the inability of communities to take responsibility for the operation and maintenance of completed schemes.

Communities lack the required skills, as well as tools and spare parts, and they were not sufficiently involved in the initial planning or the design of schemes and therefore do not feel much responsibility towards maintaining the water supply schemes.

About 60 per cent of the households have a latrine, but of these only 15 per cent qualify as improved latrines. Most are not hygienic. About 60 to 70 per cent of the schools, basic health units and dispensaries had latrines in 1990. Many of these latrines are neither hygienic nor well maintained. Designs and construction quality were often inferior. At schools, latrines used by more people than designed for.

About 15 per cent of the households have cooking stoves with a chimney fitted to reduce the indoor smoke, but of these only one-third are used properly.

There continues to be a shortage of national skilled manpower, both within the Government and in the private sector.

Since 1988, standards of construction in water supply have improved substantially largely as a result of in-country training, standardization of building techniques and a slower rate of construction. In 1990, the Government adopted a policy for community-based operation and maintenance of water supply schemes. Then in 1991, the Government decided to integrate the construction of water supplies with the provision of improved latrines and smokeless stoves. Attempts were also initiated to coordinate and cooperate with the health sector to promote hygiene in villages reached with improved physical facilities.

Many of the major towns have an existing piped water system. Supplies are usually intermittent, providing water for four to ten hours a day. An assessment of the situation in May 1989 estimated that less than half of the urban households have access to sufficient safe water. In an urban situation, 40 litres of water per person from public stand-posts or 145 litres per person for houses with indoor plumbing are widely accepted minimum needs.

Household water metering is not done. Water charges range from Nu. 9/- to Nu. 15/- per household per month, depending on the quality of housing but irrespective of the volume of water consumed. Cost recovery in urban water supply is only partial and the accountability of the users is minimal. Because of these factors, the water supplied in seven towns studied in 1989 ranged from 200 to 300 litres per person per day as a result of widespread loss and wastage of water. Metering and a steep progressive tariff structure would drastically reduce wastage.

Water & Sanitation

During 1988-1991 the Government has executed an urban water supply project with assistance from DANIDA and ADB. This project aimed to improve the water supplies for Thimphu, Paro, Phuntsholing, Tashigang, Samdrup Jongkhar and Geylegphug towns. The Government has prepared a proposal for a

second urban water supply and sanitation project. This project will improve the water supply and sanitation situation in Samchi, Wangdi, Jakar, Damphu, Kanglung, Sarbhang and Deothang towns. The project will serve an expected population of 28,000 by the year 2000. This project is now awaiting external funding.

WATER QUALITY

Rural Water Supply

Studies show that the increased quantities of water used may be even more important to improvements in public health than a high biological quality of the water... There is considerable scope for improving water quality by technical means. However, the contamination of water during and after collection requires changes in the way water is collected and stored.

In the hills and mountains of Bhutan, the construction of a piped water supply scheme reduces the time spent by women and children on the drudgery of fetching the family water requirements from distant sources. A survey in two blocks in Shemgang District revealed that, on average, it takes a household ten minutes to fetch one container of water. No studies have been done to compare the quality of the water from traditional sources with the quality of piped supplies.

Studies elsewhere show that the increased quantities of water used may be even more important to improvements in public health than a high biological quality of the water. The ready supply of water from piped schemes should lead to increased use but no studies have been done in Bhutan to confirm this assumption.

Since 1988, the in-country training of technical staff has noticeably improved the quality of construction in water supply systems. The standardization of all elements of gravity-flow schemes also resulted in marked improvements in quality. The construction of intake works to prevent pollution is often of considerable complexity. Where a scheme takes water from a stream, complete protection from possible contamination may not be easy. As for springs, proper design and construction offer full protection. This implies that with sound construction and measures to protect sources and intakes, about 60 per cent of all water supply schemes can supply safe water at the tapstands.

There is considerable scope for improving water quality by technical means. However, the contamination of water during and after collection from the public tapstands is a concern which requires changes in the way water is collected and stored. Nearly all rural households store water for use in the home. Containers used to collect water and to transport it to the home are often open and sometimes dirty. Most households do not regularly empty and clean the large vessels used to store water in the home. Ladles are commonly used to scoop water from storage vessels. Most people do not consider washing hands with soap important. Efforts to contain the spread of water-based diseases must focus on these factors. Otherwise all the toil and expenses incurred in supplying safe water at the tapstands will have been largely in vain.

In 1990, the Government renovated the Public Health Laboratory which is based in Thimphu General Hospital. UNICEF provided equipment to test water quality. Nine of the 18 District hospitals have so far received equipment to test water for biological and chemical quality. Laboratory staff have tested water from the intakes of 219 schemes. Results show that more than 60 per cent of the samples have less than 10 faecal coliform bacteria contamination, which is generally considered acceptable for rural, untreated water supplies. These results are likely to be representative of the situation in the country as a whole. This means only 25 per cent of the population are using water from piped supplies, which can be described as safe.

From July 1991, the Department of Works and Housing has required the testing of the water

from sources for proposed schemes. The Department will only sanction a scheme after the District laboratory certifies the water to be safe for domestic use.

Urban Water Supply

Except for the capital Thimphu, there is little information on the quality of water supplied in the urban areas. There is no routine testing of water quality. In the capital, the water quality has improved since 1989, when a major outbreak of typhoid led to drastic remedial action. The water schemes for most towns take surface water from streams. The biological quality of the water at the source is nearly always unacceptable, unfit for domestic use without treatment. As of 1990, the water for Thimphu, Phuntsholing, Samchi, Geylegphug and Samdrup Jongkhar towns is regularly treated.

INSTITUTIONAL ARRANGEMENTS

With support from UNICEF, the villagers and the Government work as partners in implementing the rural water supply and sanitation programme.

At the centre, the Public Health Engineering (PHE) Division of the Department of Works and Housing under the Ministry for Communications, is responsible for overall programme administration and coordination. This includes determining policies, procedures and approaches for the rural water supply and sanitation programme. This programme has recently started to develop significant complementary activities in sanitation.

The Department of Health Services promotes sanitation and hygiene, including the construction of simple household pit latrines. The Department of Education has included health and hygiene in the school curriculum. Many of the

schools have improved piped water and latrines, even though the upkeep is often poor.

The District Administration offices are responsible for implementation in the villages. Each of the 18 Districts has a District Engineer and a complement of technical staff and skilled tradesmen. With the introduction of the policy for operation and maintenance of completed schemes in 1990, the District-based staff also train villagers chosen to be responsible for operation and maintenance of the completed schemes.

The decentralization move to make the Districts responsible for implementing programmes is a positive feature in Bhutan, where communications are often difficult and time-consuming. The absence in the Districts of a core of staff assigned solely for water supply and sanitation, combined with an overall lack of technical personnel and often haphazard work

planning, continue to be major impediments to programme expansion or acceleration. The experiment from 1988 till 1992 with a zonal

infrastructure between the centre and the Districts did little to improve programme efficiency.

COMMUNITY PARTICIPATION AND RESPONSIBILITIES

During construction, the users contribute by transporting sand, gravel, stones and external construction materials to the site. They also excavate and backfill all pipeline trenches. On average, the users contribute seven to ten per cent of the total cost of building a water supply scheme.

Traditionally, all Bhutanese citizens donate many hours in labour for the construction and upkeep of communal facilities. In the construction of water supply schemes, the villagers contribute their labour, with a good measure of success. In the past, getting community contributions for construction was easy and made it unnecessary to organize, train and motivate communities to complete construction work. There was, however, a lack of community organization and preparation for their responsibilities in the functioning of the scheme after it was completed. This meant that operation and maintenance suffered.

The Government policy adopted for the rural water supply and sanitation programme aims to involve the beneficiaries at all stages of the programme. Nevertheless, in many instances in the past, the interaction of the technical staff with the users has not been adequate. For ease of construction, there is a limited range of design options available to communities.

Village representatives discuss requests for improved water supplies in the District Development Committees. At the time of the survey, the villagers decide the location of

tapstands and work with the surveyors to determine the alignment of the pipelines.

From 1990, the village also elects the village maintenance committee (VMC). This committee includes two village caretakers, who are responsible for operating and maintaining the scheme after completion. During construction, the users contribute by transporting sand, gravel, stones and external construction materials to the site. They also excavate and backfill all pipeline trenches. On average, the users contribute seven to ten per cent of the total cost of building a water supply scheme.

Upon completion, the community assumes responsibility for operation and maintenance. It is in this area that major shortcomings continue to persist. The Department adopted a policy for community-based operation and maintenance of completed schemes as recently as 1990. The policy emphasizes the strengthening of the five-member VMC, including the village caretakers.

To support committees and caretakers, Government plans call for each District to assign one Section Officer to attend full-time to operation and maintenance issues and activities but at present none of the Districts have enough staff for this post to be deployed. In most District Offices, there are often not even enough technical staff to deal with the water supply construction works. In this situation, staff have little time to attend to community organization, motivation and training. The Government policy to limit the number of civil servants will in turn limit programme implementation according to staff numbers.

There is no doubt that the Government has come to realize the crucial importance of community involvement and participation in the provision of rural water supplies. As in other countries in the region, the programme must instill a sense of common ownership and responsibility for a communal water supply scheme. This prevents abuse and misuse and achieves self-reliance in the operation and maintenance of the scheme.

Studies in many parts of the world have shown the value of understanding the 'likes' and 'dislikes' of communities in water supply and

waste disposal. Without such information, it is difficult to provide facilities which people are likely to enjoy using.

The appreciation that users feel for their common facilities will no doubt be reflected in their commitment for better upkeep of the facilities.

There has, as yet, not been any in-depth study of knowledge, attitudes and practices relating to water supply and sanitation among the rural population in Bhutan. Such studies would help to devise approaches that communities would accept and willingly participate in.

INVESTMENT IN WATER SUPPLY AND SANITATION

For the period 1983-1992, the Government adopted a Decade Plan, which projected coverage and costs of providing water supply and sanitation facilities. An estimated investment of 600 to 700 million Ngultrum (1984 price levels) was projected for the plan period. The Sixth Five-Year Plan budget for the same purpose was 58.56 million Ngultrum (1987 prices). Until December 1989, programmes had absorbed 22.19 million Ngultrum. This is about half-way into the plan period.

In recent years, annual Government capital investments are about US\$ 300,000. The Government incurs an annual expenditure of US\$ 350,000 in overhead costs, which are not entirely attributable to rural water and sanitation only. UNICEF's annual investments in rural water supply and sanitation averaged US\$ 1,200,000 during the period 1989-1991, but not all of this is reflected in the Government budget.

In the construction of rural water supplies, the Government contributes 15 to 30 per cent, the beneficiaries donate seven to ten per cent and UNICEF covers 68 to 78 per cent of the costs. Per capita construction costs of gravity-flow water schemes have increased notably in recent years from US\$ 26 in 1988 - 1989, US\$ 38 in 1989-1990 to US\$ 58 in 1990-1991. These costs do not include programme overhead costs incurred by the Government and UNICEF.

The latter figure is high in comparison with the cost of similar water supply facilities in other countries in the region. More solid construction, better quality materials and the move to serve the remaining smaller, scattered communities are the main reasons for these increases. The big increase in costs in 1990-1991 has been because the Government was unable to start new schemes in the more populous southern districts, where there is ethnic strife.

FACTORS WHICH HAVE CONTRIBUTED MOST TO THE PRESENT SITUATION

The poor operational status of many of the older water supply schemes is the result of several factors:-

- Poor designs, poor quality materials, inadequate supervision and an acute shortage of skilled labour/manpower. Along with this, there has been an inaccurate estimate of the District implementation capacity combined with inadequate user involvement.
- The importance of extending and enlarging the involvement of user communities beyond their unskilled labour inputs has been realised only recently. As a result, the concepts of user committees and village caretakers, including their training and equipment, was only taken up from 1990 onwards.
- The link between water supply improvements and other sanitation interventions has been virtually non-existent. The Government has only very recently come to accept the crucial importance of integrating safe water supply with sanitation interventions including latrines, smokeless stoves and hygiene promotion.
- Supplying rural water (and now sanitation) in the Department of Works and Housing has been viewed as a purely technical activity for far too long. This has resulted in the neglect of community organization, motivation and training, exacerbated by the acute shortages of capable staff in the Districts.
- Even when sector planners and policy makers claim to know much about the attitudes, knowledge and practices of people in water use and sanitation, this has never been systematically studied in any region of the country.
- Standardization in water supply and sanitation and intensive in-country training of District-based staff, involving international volunteers, have contributed much to improve the quality of programme output.
- The relatively high percentage of households using some form of latrine is largely attributed to the promotion work done by the Health Services staff and village volunteers. The poor quality of many latrines can be explained by the lack of technical expertise in the Health Services sector and possibly by the absence of practical training for staff and volunteers.
- Latrines for schools, basic health units and dispensaries have been contributed by the Low Cost Sanitation Project funded by UNDP. Achievements in construction were not matched by progress in organizing and instituting arrangements for proper upkeep and repair. Inadequate designs, poor supervision and the shortage of skilled manpower often produced poorly built latrines.
- Changes in the institutional arrangements, in operational approaches and in staffing patterns have prevented a resumption of the construction of smokeless stoves. Poor supervision, inadequate supplies of construction materials insufficient user involvement and training inappropriate stove designs have contributed to a poor rate of utilization.
- The leadership provided by a member of the Royal Family gave the smokeless stove programme much impetus in the years when it was managed by the National Women's Association of Bhutan.

FACTORS AFFECTING THE CURRENT SITUATION

- The integration of water supply and sanitation is a sound approach: however, it is still to be made operational. Similarly, cooperation between the technical and the health services personnel is a solid proposition, but it is yet to be practised.
- The continuing unrest in the south put about a third of the population beyond the reach of the programme since September 1990.
- The importance of in-country training has been recognized and is now given appropriate emphasis.
- The village caretakers are given training and equipment, but spare parts are not yet easily available to them.
- Village Maintenance Committees are formed but their actual role and their training leave much to be desired.
- The Department of Works and Housing is active in promoting the construction of latrines. However, a proper balance between the subsidized construction of sanitary latrines and the construction of simple pit latrine types free of cost is yet to be found.
- The recent move of the Department of Works and Housing from the Ministry of Social Services to the Ministry of Communications is likely to make it more difficult to bring water supply and sanitation closer to other health promotional programmes also relying on community participation and involvement.
- Studies in many parts of the world prove that safe drinking water helps to prevent water based diseases, many of which result in diarrhoea. The reduction in the occurrence of diseases depends on the water and sanitation situation before intervention and on improvements achieved after intervention. Programme interventions can increase the benefits of a safe supply of water if other transmission routes of disease are also broken. Sector policy makers in Bhutan have recently adopted approaches aimed at the convergence of water supply and sanitation interventions.

IMPLICATIONS OF THE ANALYSIS

- The integration of water supply and sanitation needs to be vigorously pursued. At the same time, the Health Services sector must be involved more closely and much more actively in the implementation of the programme.
- The present sound standards of construction need to be maintained, if not further improved. Emphasis must be on small numbers of properly constructed water supply and sanitation facilities, with the users firmly in charge of operation and maintenance of the schemes.
- In training, in-country activities with a strong practical component deserve priority over training opportunities abroad, which tend to benefit few.
- Selected long-term inputs of expatriate expertise in certain fields where the programme is weak, are desirable over short-term consultancies. In particular, inputs for

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sanitation, hygiene promotion and women's involvement deserve consideration.

- Community organization, motivation and training of their representatives, with special emphasis on women, is one of the highest priorities. Advocacy, at all levels of Government, for the importance of user involvement is equally important.
- Ways must be found to achieve good standard of water supply and sanitation at institutions, in particular at schools and monastic institutions.
- The training capacity of the Public Health Engineering Cell (in Department of Works and Housing) and the Public Health Division (in the Department of Health Services) must be strengthened and mutual cooperation should be sought where the promotion of health and hygiene is concerned.
- Appropriate legislation to document the rights and obligations of all Bhutanese households in water supply and in sanitation is required.
- Whenever possible, Government subsidies must be reduced to a minimum and private investments for improved water supply and

sanitation must be encouraged. This is particularly true for improvements in household sanitation and for the upkeep of completed public water supplies.

- The involvement of women in the sector programme must be enhanced: equal participation in the village committees, women as caretakers, women to construct stoves and latrines, women as hygiene promoters, etc. must be pursued.
- Reliable systems for collecting statistically valid data on the main sector indicators must be established.
- Studies on Knowledge, Attitudes and Practices (KAP) need to be conducted so that the programme components can make the best use of traditional beliefs, practices and preferences in the design of approaches and policies.
- A review in 1988 found that the knowledge of health workers in controlling diarrhoeal diseases is often poor. Careful instructions to parents who bring children with diarrhoea to a health facility are very important. Instructions must include information on the preparation and use of the Oral Rehydration Therapy (ORT) and the need to use ORT even while parents also seek spiritual help.

TRADITIONAL ATTITUDES AND PRACTICES RELATED TO DEFECATION

Many rural people associate latrines with old excreta and bad smells. Personal preference is to avoid such places, particularly when it is dark. These negative considerations persist regardless of investment and the elaborateness of the superstructure.

The situation with regard to latrine use in 1990 can be summarized as follows:-

Latrine use:

Rural: 62 per cent of the households have a latrine; the usage pattern is not known.

Urban: 50 to 70 per cent use latrines.

Institutional: 70 per cent of schools and 60 per cent of health centres have latrines. Many of these latrines are not hygienic.

Many difficulties have been encountered in instituting a workable latrine promotion programme. The efforts made over the years to introduce latrines have had a variable but largely limited effect. For many, sensibilities focus on a simple avoidance of human excrement. The ideal place for defecation is thus a peaceful, unsullied place, with green grass and fresh air. Among communities in the west of Bhutan, many houses have a latrine room on the first floor of the house. The excreta usually falls down to the pigs below.

Sticks, stones and other suitable objects are the commonly used means for anal cleaning. In

the warmer southern Districts and in urban areas, the use of water for cleansing is prevalent. So some people are 'washers' and others are 'wipers'. The lack of water in many places suitable for defecation is one explanation for the prevalent practice of using sticks and stones for anal cleansing among the northern population.

Another possible reason for this practice is the cold weather in winter when washing can be a harrowing affair. The numbers of latrine types placed in schools till 1990 gives evidence of the ratio of 'washers' to 'wipers'. The range is about one 'washer' to ten 'wipers'.

Many rural people associate latrines with old excreta and bad smells. Personal preference is to avoid such places, particularly when it is dark. These negative considerations persist regardless of investment and the elaborateness of the superstructure.

LATRINE PROMOTION: PRESENT STATUS

Household Latrine Use

As part of the Sixth Five-Year Plan, the Government planned to introduce sanitary latrines in 30 per cent of the rural households. At the end of 1990, a survey in the 13 northern Districts reported that 62 per cent of the households had some kind of latrine. The survey did not report actual latrine use or latrine upkeep. Many of the latrines in use are undoubtedly far from hygienic.

The Government and UNICEF after an initial effort to promote subsidized, sanitary latrines, are now working towards a programme to promote simple pit latrines largely relying on people's own skills and resources.

Different agencies promote a wide range of technologies and latrine types. In rural areas, the Public Health Division has completed a pilot project in Mongar District. This project promoted the construction of household latrines entirely from local materials through the services of the Village Health Workers (VHW). The programme reported impressive results with 70 per cent latrine use achieved. The lack of technical competence among the VHW motivators caused many of these latrines to be of a poor standard.

There has been some disagreement between the Department of Works and Housing and the Public Health Division as to the correct approach to the promotion of household latrines.

The Public Health Division advocates the construction of simple pit latrines in large numbers, using only locally available materials,

and is less worried about the sanitary considerations. The focus of the Department of Works and Housing has, until recently, been on the construction of fewer but strictly sanitary latrines, which use subsidized external materials. The Department has only recently come to accept the need to promote simple pit latrines for household use.

The two approaches need not be contradictory. In some countries in the region, it is the utilization of the latrine rather than its construction which has brought problems for the first-time users. Where programmes promote more sophisticated latrines, the results are usually better when they are provided to families already using a simple pit latrine. After a period of use, the household comes to appreciate the convenience and the privacy of a latrine and their willingness to invest in a better latrine is likely to increase.

From 1986 to 1990, the Department of Works and Housing carried out the Low-Cost Sanitation Project. The Department constructed more than 1,700 latrines at basic health units, dispensaries, schools and for a small number of private households.

A rapid appraisal in 1990 revealed many shortcomings in this project. Partly based on the findings in this study, the Government and UNICEF after an initial effort to promote subsidized, sanitary latrines, are now working towards a programme to promote simple pit latrines largely relying on people's own skills and resources.

Some Non-Governmental Organizations are also promoting latrine use as part of their community development programmes. In Bumthang District and other areas, such programmes have provided concrete slabs as an incentive to house owners.

Often, the introduction and use of household latrines depends on a degree of coercion exerted

by the District authorities. The most acceptable pattern is one where every house has its own latrine, no matter how simple a structure this is.

In a few Districts, the authorities proceeded to make latrine use compulsory after many years of motivation and demonstration had brought about a certain degree of acceptance. The District authorities followed up with inspections to see that the latrines were indeed in use. According to the available information, the practice is truly taking hold in these areas. To what extent this approach could be fruitfully replicated in other Districts is, however, questionable.

Institutional Latrine Use

The rapid increase, in recent years, of the number of children in school has caused the present number of latrines in schools to be totally inadequate. As a result, many students are forced to relieve themselves elsewhere during the breaks between classes.

Bhutan has more than 250 educational institutions including around 100 community schools, 115 basic health units and dispensaries and about 2000 monasteries and other religious institutions.

In the period 1986 to 1990, the Department of Works and Housing constructed latrine facilities for 152 schools, 805 Ventilated Improved Double Pit (VIDP) and Pour-Flush (PF) and 80 health services centres (145 VIDP and 18 PF units). In 1992, the Department of Works and Housing started a rural sanitation project for institutions with funding from UNICEF. This project aims to provide all primary schools and basic health units with adequate latrine facilities.

The construction, use and maintenance of institutional latrines, constructed in the period

1986 to 1990, has often been poor. The rapid increase, in recent years, of the number of children in school has caused the present number of latrines in schools to be totally inadequate.

As a result, many students are forced to relieve themselves elsewhere during the breaks between classes. Many of the children coming

to school for the first time have never before used a latrine and instruction on proper latrine use is also often insufficient. Few schools manage to maintain a strict regimen in the cleaning of their latrines. The generally poor upkeep of latrines in schools, health units and other public places perpetuates the notion that latrines are dirty and smelly.

GARBAGE DISPOSAL AND TRADITIONAL ATTITUDES TO HOUSEHOLD WASTE

People believe that good luck, blessing and plenty could follow the refuse and disappear from the house. So they sweep the refuse in a corner and remove it only at an auspicious time.

Ninety per cent of households live in rural areas in widely scattered settlements. These households produce increasing quantities of solid waste. Most of this is organic, which the household can compost. Most households will dump refuse in any place considered convenient. Some communities, though, still consider household waste as blessed. To throw out such material at inauspicious times is reprehensible. People believe that good luck, blessing and

plenty could follow the refuse and disappear from the house. So they sweep the refuse in a corner and remove it only at an auspicious time. Most rural households have some cows and pigs. Tradition dictates that the households keep their cattle in or near the house. The resulting flies are a nuisance and a potential route for the transmission of pathogens.

As people become more affluent, they are able to buy more modern consumables, and the amount of household refuse increases accordingly. This also results in an increasing quantity of inorganic waste. The collection and disposal of solid waste is already posing considerable problems in the half dozen rapidly growing major population centres.

PROMOTION OF HYGIENE: LINKAGES TO HEALTH AND EDUCATION PROGRAMMES

To achieve and sustain significant improvements in health the use of safe water and good sanitary practices are essential. The use of hygienic latrines is only one aspect of improved sanitary behaviour. Ideally, the construction of household latrines should evolve from a hygiene education programme.

The effective promotion of hygiene requires prolonged and intense periods of interaction with

the population. This necessitates, ideally, skilled female educators, who are able to focus on women. Bhutan, like many other countries, faces many difficulties in finding the right sort of illiterate female workers able to work in difficult and remote areas.

Government resources at the present time limit the possibility of hiring the additional manpower needed for a prolonged country-wide

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programme. Moreover, the appropriate strategies for the promotion of hygiene among different ethnic groups are not readily available. For these reasons, past and current 'sanitation' schemes are, in fact, largely latrine construction programmes. Even in this limited area, there are many shortcomings. Weaknesses in this programme range from a lack of proper designs and skilled labour to poor quality construction. The interaction and follow-up with users are inadequate and the subsidies have often been excessive.

Based on the lessons learned in earlier programmes, the Government and UNICEF have adopted new approaches to rural sanitation. This includes the promotion of hygiene through cooperation with the Department of Health Services. The strategy for this programme is based on coordination between the Departments of Works and Housing, of Health Services and of Education. These three Departments are crucial to the design and implementation of the programmes aimed at improving public health.

It is too early to predict what the results of the New Approach to Primary Education (NAPE) hygiene training will be. Most of the schools are now using several innovative teaching aids on the subject of hygiene. This very significant programme of educational reform will be reviewed, analyzed and evaluated in September-November 1992.

The review team will place emphasis on the role of the school, teachers, curriculum and teaching methods in raising national standards of hygiene and sanitation. Preliminary information on the design of NAPE indicates an appreciation of the need to draw upon the experience of the various sectors involved in water and sanitation development.

There are some positive developments in matters of personal hygiene. Most people with higher education practice a much higher level of hygiene. School teachers and health workers articulate stricter standards, though these many not always be followed in practice.

In some villages, Village Health Workers have helped to introduce the practice of keeping school children cleaner. Most children attend school properly washed. The positive development is probably a result of parents pride, peer pressure and control by the teachers.

Many people associate modernity with cleanliness. There is every reason to believe that with increasing prosperity and more exposure to 'modern' concepts of cleanliness, hygiene practices will continue to improve. Increasing levels of literacy, especially among women, will also result in improved standards of sanitation.



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INSTITUTIONAL SUPPORT

EDUCATION

Chapter 5



THE FRAMEWORK FOR ANALYSIS

Bhutan, has made the formal policy decision that for Bhutanese children, basic education will constitute completion of all primary grades.

The development of an effective system of education has greatly accelerated during the past

five years, characterized by major changes at all levels. The system is experiencing rapid expansion in terms of wider geographic coverage, and at the same time, the issue of quality in education has become a major area of concern. The changes resulting from the pattern of development are particularly significant in the primary schools, establishing a new baseline for

the whole system. Key elements of this baseline are more schools, more appropriate types of schools for rural areas, vastly improved curriculum and teaching methods, reinforced by systematic training for teachers and administrators.

Analysis of the present situation calls for a basic framework which takes into account:

- The relationship between the present system and the social and educational history of Bhutan.
- The relatively short period in which modern education has existed in Bhutan.
- The fully imported nature of the educational model, and its capacity to adapt to the needs of children and the national development aspirations of Bhutan.
- The political commitment of the Royal Government of Bhutan to basic education for all children in the context of the worldwide trends and priorities established by the World Conference on Education for All.

Bhutan's involvement in the 1990 World Conference on Education for All reinforced the Department of Education's decision to expand changes already tentatively initiated in the primary system.

As a result, nine decisions of far-reaching significance have been taken and implemented:

- The pilot project "New Approach to Primary Education", was expanded to become a national system-wide policy.
- The introduction of class teaching (to replace subject teaching), in the lower grades of primary school.

- The policy of appointing only trained Bhutanese teachers to the lower grades.
- The general upgrading of the status and salaries of teachers in the civil service structure.
- The successful introduction of large-scale in-service training programs for primary teachers and principals.
- Upgrading of pre-service training of primary teachers.
- A reform of the system of examinations and pupil assessment, with consequent implications for minimizing repetition of grades.
- A policy initiative to create a new type of school specifically designed to take basic education to remote and isolated areas. These are known as community schools. The Government's review of the 1991 education sector notes that 84 community schools had already been established.
- The appointment of only Bhutanese as school principals, replacing the foreign principals who had previously dominated the system. This policy decision has been implemented throughout the entire system.

The World Conference emphasized the critical importance of ensuring that all children receive basic education. The interpretation of what constitutes "basic" education varies widely from country to country.

Bhutan, however, has made the formal policy decision that for Bhutanese children, basic education will constitute completion of all primary grades. Thus the analysis of the present situation, must have as a major focus an assessment of the systems capacity to make this goal a reality.

THE BACKGROUND

Formal western education began only in the 1950s... The success of the three decades since can be measured by the fact that the enrolment of 1,500 pupils in 59 schools in 1959 has grown to over 70,000 pupils in 195 institutions in 1990.

Education was institutionalized in Bhutan as early as the eight century, when monastic education was established by Buddhist monks from Tibet. Education has been an important part of religious life in Bhutan for centuries and continues to be so today, with approximately 4,000 monks, nuns and lay people receiving education in religious institutions throughout the country. These institutions are supported by the state, and the figure given does not include those studying in private monasteries. Monastic education goes beyond the study of religious rituals and includes literacy, numeracy, philosophy, astrology, literature, arts and in some cases, traditional medicine.

Formal western education began only in the 1950s, and the introduction of the First Five-Year Plan in 1960 is generally accepted as the beginning of the modern era in education. The success of the three decades since can be measured by the fact that the enrolment of 1,500 pupils in 59 schools in 1959 has grown to over 70,000 pupils in 195 institutions in 1990. The official gross primary enrolment figure is at present 67 per cent. There is no data available on net enrolment. Most children are overaged for their classes.

The model established during the 1950's was imported from India. With it came teachers, textbooks, curriculum and teaching methods. It was formal, subject centred from the first year at school, and characterised by teacher domination and rote learning. It was rigid, inflexible, and as

the system expanded, became increasingly staffed by teachers from various parts of India.

Critics contend that this fully imported model of education, both primary and secondary, was essentially incompatible with the needs of Bhutanese children, and that its rigidity greatly restricted its capacity to adapt to changes. Fundamental changes would be necessary for it to become a culturally compatible indigenous system of education.

There are two systems of education operating in Bhutan. The monastic system continues to serve the religious needs of a Buddhist society. The western model, grossly out of date and inflexible in its original form, is rapidly adapting to the needs of a more outward looking society.

Recognition of this led to the pilot project known as "New Approach to Primary Education", commonly referred to by the abbreviation NAPE. This project, now expanded from pilot to national policy is the focal point of a range of activities currently making fundamental changes in primary education.

Thus, there are two systems of education operating in Bhutan. The monastic system continues to serve the religious needs of a Buddhist society. The western model, grossly out of date and inflexible in its original form, is rapidly adapting to the needs of a more outward looking society. The two run parallel to each other, without formal lines of association. There are no conflicts or competition between them.

The formal education system consists of one year pre-primary followed by six years primary. Progression into secondary is to four years at the

first level, leading to the Indian Council for Secondary Education (ICSE) examination in class 10. This is followed by an additional two years leading to the Indian School Certificate (ISC) examination in class 12. While the primary level is now implementing its own curriculum with a Bhutanese identity, secondary education remains firmly linked to the Indian curriculum and examinations, a necessary situation to ensure negotiability of secondary awards.

There are no school fees in Bhutan and textbooks and basic work books are provided free of cost. The Department of Education is responsible for the provision of educational services, including the construction of schools and other educational institutions, training and employment of teachers, curriculum development and all other professional and administrative aspects of the system. The first initiative in sharing responsibility was formulated in 1990 with the introduction of the concept of community schools.

A community school is one that is built and maintained by the community where a minimum of 30 students (within a walking distance of one hour), can be enrolled. The Department of Education will provide the one or two teachers necessary, and intensive training courses, initiated in January 1992, have been designed to equip teachers with the organizational skills necessary to cope with the multigrade situation typical of these schools.

The establishment of community schools has, in the official opinion stated in the Seventh Plan, contributed to an increase in the number of children attending school, particularly girls. The community built schools initiative is a clear indication that the Government is serious in its commitment to achieve education for all Bhutanese children.

The key statistics and other relevant reference information may be referred to in the annex which follows this chapter.

THE SITUATION AT 1991

There is a tendency in many parts of the world for a situation analysis to emphasize those statistics which are negative: dropout rates, grade repetition, untrained teachers, low levels of survival to the end of primary, irrelevant curriculum, poor teaching methods.

This analysis must draw attention to these problems, which still exist in Bhutan to a serious degree, but the overall assessment will emphasize the positive steps being taken to resolve these problems. The transition from the Sixth to the Seventh Plan period should introduce a period of sustained educational development which builds

on the remarkable achievements of the past three decades.

The following information is noted to crystallize those elements of the system which must be dealt with professionally and effectively if the rate of progress is to be maintained and accelerated.

The immediate focus of this section is on the primary school system, the baseline of the whole system if education for all is to become a reality. A later section deals with the post-primary levels.

PROGRESSION THROUGH PRIMARY SCHOOL

More than 85 per cent of children in primary schools were overaged for the classes they were in. This could be expected, given the long distances they have to walk to school, especially in rural areas. Fortunately, in Bhutanese society, age is not a barrier to school and education.

Schooling begins for a child at the age of six years with entry to the pre-primary (PP) grade. After PP the child goes from class 1 through to class 6. As the PP year is not a pre-school year, but is in fact, the first year of primary education, the full progression through the primary system is seven years. Each level is called a class, e.g. class 3, which is the equivalent term to a grade level. Six years of age is the official age for entry. In reality, the demands for education and other factors are such that in any class, including PP, there will be a wide range of ages.

The 1990 "National Survey on Dropouts, Non-Enrolment and Repetition in Primary Schools in Bhutan", revealed that more than 85 per cent of children in primary schools were overaged for the classes they were in. This could be expected, given the long distances they have to walk to school, especially in rural areas. Fortunately, in Bhutanese society age is not a barrier to school and education.

At the end of each academic year, an internal class assessment is conducted and only those who pass are promoted to the higher class. Those who fail are permitted to repeat the class once only. The regulations governing progression through the levels, and the application of them in schools, has become the focus of investigation of the whole problem of repetition of classes and children withdrawing from school. The reliability and validity of class testing, the methods of assessing children, and

the competence of the class teachers to carry out this responsibility are being questioned.

The Bhutan Board of Examinations embarked on reforming the Class 6 common examinations in 1990, and had introduced the new system for the first time in the 1990 examinations. It had also started training primary teachers on testing in the classroom. However, there is no standardized testing nor a listing of minimum level of competency for each primary class. There is a high level of student dropouts and repetition through all the primary classes.

The number of children who are withdrawn from school is alarmingly high. Every year, there is a high percentage of children from every class who do not return to continue their education the following year. The pattern for 1991 is shown graphically at the end of the chapter, (Figure 1). While the actual percentage appears to increase dramatically in class 5, it should be noted that this is a percentage of those who have survived through PP, classes 1, 2 and 3. The actual numbers enrolled in those grade levels are relatively small because of the very large cumulative loss from PP through to the end of class 3. Also, in the higher levels of the primary school there are many children who are well over the normal age for those classes, after 15 or 16 years old. It is the loss of children from the first four levels which calls for the most intensive examination.

The primary school remains, for most children, the only education they can hope to receive.

It should be noted that the Department of Education is very well aware of this situation and the reforms recorded in the first section of this

chapter are aimed at reducing of this loss of children from the system.

The highest rate of withdrawal is at the point of transition to secondary school. The common examination conducted at the end of class 6 acts as a screening process to determine those who may progress to secondary. This is reasonable and to be expected at this stage of the development of a Government system in Bhutan. The places available in secondary schools have expanded at an impressive rate over the past ten years, but the economies of the situation and other factors still cannot cope with the expansion necessary to allow all children to progress through school. Thus the primary school remains, for most children, the only education they can hope to receive.

Contrary to popular assumptions, the rate of loss of girl students through the primary classes is not greater than for boys. In fact, the 1991 pattern shows that the overall loss of boys was 7.8 percent compared to 5.7 percent of girls. Reference to figure 1 shows graphically the pattern through the grades, and emphasises the critical importance of PP and class 1 for later retention of children at school. The very high rate of loss of girls in PP no doubt ensures that those who remain are less likely to be withdrawn later. They are survivors. However, a detailed study of what is happening in PP and why there are such high losses from that level is now critical. It is important to note that this focus will be a major concern of the review and evaluation of the NAPE to be carried out in 1992.

THE PROBLEM OF REPETITION

The system of annual class exams, often conducted by untrained teachers, has resulted in a high number of repeaters throughout all the grades. Many teachers have been unable to provide consistent and continuous assessment and evaluation of their students' performance. This is one of the reasons for the high rate of repetition. The Department of Education's statistics show that of the total of 51,411 students studying in the primary grades of class PP to 6 in 1992, 20.1 per cent or 10,339 students were repeaters.

The gender difference for repeaters in 1992 shows that 20.9 per cent were girls and 21.4 per cent were boys. Again, this contradicts a common assumption that girls are more likely to repeat than boys. However, one interpretation of this is that girls are more likely to be withdrawn from school rather than repeat the class.

A student is not promoted to the next class if s/he does not pass any one of the three major subjects: Dzongkha, English or Mathematics.

The 1990 National Survey showed that the highest number of repeaters had failed English. This was followed by Mathematics and Dzongkha. Some students were not successful in passing more than one major subject.

The highest number of repeaters are in the lower grades. This factor can be attributed to the fact that children begin their education in a language totally alien to them and it takes them at least three years to understand English well enough to follow the teacher in class. This is evidenced in the high rate of failures in English and Mathematics in the lower levels.

It is clear that the regulations of the Department of Education and the teachers' annual assessment of children must be examined in detail to resolve the anti-educational practices associated with the problem of class repetition. This process has begun and it is reasonable to assume that the review and evaluation of NAPE, scheduled for 1992, will make a major breakthrough in this area.

GENDER DIFFERENCE IN PRIMARY ENROLMENT

Two factors effect the enrolment of girls. The first is the lack of a school within reasonable walking distance. The second is that the alternative of primary boarding schools is not acceptable to most parents of young girls.

In 1990, 60.7 per cent of all children enrolled in primary classes were boys, and 39.3 per cent were girls. In 1991, when civil disturbance in the south of Bhutan disrupted the schools and therefore created considerable problems in interpreting available statistics, 58.9 per cent were boys and 41.1 per cent were girls. The ratio is close enough for differences to be negligible, especially as the disturbances closed whole schools and therefore, in general, affected boys and girls equally.

The gender differences for 1992, class by class, are shown graphically in figure 2. This reflects the typical pattern of the past five years,

although a detailed cohort analysis is not available. The pattern through the seven primary classes appears consistent: Fewer girls enrol in school, but they are retained through the primary classes. After the class 6 common examination, the rate of retention declines sharply. There is a high withdrawal rate of girls in secondary schools. This area would benefit from more detailed examination.

In the more remote rural areas, two major related factors affect the enrolment of girls. The first is the lack of a school within reasonable walking distance. The second is that the alternative of primary boarding schools is not acceptable to most parents of young girls. The Government's decision to encourage the expansion of small community built schools, each close to and belonging to the community, is an important indication of the Government's commitment to bringing basic education to all children and especially to encourage girls to attend school.

NON-ENTRY TO SCHOOL

There are 51,411 students in primary classes PP to class 6 in 1992... Despite this, all children of school-going age do not go to school. Many have the opportunity but their parents do not send them. Many cannot because of isolation, distance to school, social attitudes, lack of parental value and understanding of education.

The point was made in the first section of this chapter that the achievements since 1960 have been immense. It is important to repeat this in order to keep the problems of non-entry to school in perspective.

Since the introduction of a modern education system, actual enrolment in schools has increased by more than 40 times. The population has also increased but the lack of reliable estimates of the population prevents the calculation of enrolment growth in relation to population base. Even so, the achievement of having 51,411 students in primary classes PP to class 6, in 1992 is impressive.

Despite this, all children of school-going age do not go to school. Many have the opportunity but their parents do not send them. Many cannot because of isolation, distance to school, social attitudes, lack of parental value and understanding of education.

The 1990 National Survey made an important but tentative, attempt to discover why parents did not send their children to school.

The responses from 534 households are summarised in the following table 1 and indicate the variety of reasons.

Table 1: Parents' reasons for Non-enrolment of children in Schools

Reasons for Non-enrolment	Percent	Reasons for Non-enrolment	Percent
Needed at home	64.4	No vacancy in the school	3.6
Could not afford expenses, too poor	67.2	Child not interested in schooling	5.2
Child too old	35.0	The School was of poor quality	4.9
School too far away	32.6	Child was too young	3.0
Child was in ill health	30.7	Modern education generate disrespect for culture, religion and tradition	2.4
Family broke up	23.2	My child was mentally dull	1.1
Migration to another place	8.1	My child failed in too many exams	0.9
Modern education does not prepare child for practical life	6.4	There was no hostel facilities	0.7

THE TEACHERS

The Government has given teacher training a high priority and the principle of good quality training for both secondary and primary training is established... The combined output of trained primary teachers from the two institutions for 1991 was 83. The required output of trained Bhutanese primary teachers should be 300 a year if the country is to have all its schools staffed by national teachers by the year 2000.

The rapid expansion of the whole system, primary and secondary, has created considerable

strain on the capacity of the Department of Education to provide teachers. The situation has been further complicated by the implementation of the Government's policy to minimise the reliance on teachers hired from India, referred to as "non-nationals". This has most impact on the primary schools. In 1992, more than 31 per cent of primary teachers were non-nationals, mostly subject teachers appointed to classes 4-6.

The policy of appointing only Bhutanese to the lower grades is a practical aspect of the decision to phase out non-national teachers as soon as possible.

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The student-teacher ratio figures are not useful, as there are so many differences in the different areas, from rural and isolated areas to urban centres. There are also quite spectacular differences within typical primary schools, where PP to class 3 are taught by one class teacher while higher grades have a number of subject teachers. Thus, in a school of all class levels, the PP and classes 1, 2 and 3 will typically be very large classes, (50 per class is common), each taught by one class teacher. The classes 4, 5 and 6 will usually be small, often about 15-20 children taught by up to 6 subject teachers.

This situation is a side effect of the changes being brought in by the NAPE. As NAPE becomes more organized, the use of class teachers will be introduced to the higher grades and subject teachers will eventually disappear.

The current re-assessment of methods of appointing teachers and the criteria for staffing schools according to a more national formula will vastly improve the situation. While there is a shortage in the meantime, it appears manageable and in-service training is helping teachers cope with large classes.

The Government has given teacher training a high priority and the principle of good quality training for both secondary and primary training is established.

The National Institute of Education (NIE) at Samchi was established in 1968 while the Teachers' Training College (TTC) located in Paro admitted its first trainees in 1975. NIE offers three courses; a Primary Teacher Training Certificate (PTTC), a Bachelor of Education (B.Ed), and a Post Graduate Certificate in Education (PGCE). The Paro TTC offers only training for primary teaching. Entry level is from class 10 and the course is of two years' duration for the Primary Teaching Certificate.

The combined output of trained primary teachers from the two institutions for 1991 was 83. The required output of trained Bhutanese primary teachers should be 300 a year if the country is to have all its schools staffed by national teachers by the year 2000.

Despite these constraints, the basic principles have been established and. The Government's commitment has also been firmly established with an impressive expansion of in-service training during 1990, 1991 and 1992.

The World Bank and the Swiss Government are jointly funding the expansion of the training college facilities at Paro. Expansion on Phase II will be completed by 1992. TTC will then have a capacity for 150 students and by 1997, the institution will be capable of training 300 teachers. There are plans to move the B.Ed and PGCE teacher-training courses from NIE at Samchi to Sherubtse College by 1993 so that more places will be available to teach the PTTC course at the NIE.

The training of teachers, consistent with the development of NAPE, has also been undergoing a transformation. Innovations such as the Associate Teacher Trainer concept was introduced during the academic year 1990/1991 whereby established and experienced teachers in schools supervise the teacher trainees during their teaching practice. The two teacher training institutions have also begun to take a more active part in the in-service training for the new curriculum. This will narrow the gap between the theoretical work in teacher training and what happens in the classroom.

With the introduction of the multigrade organization and teaching in the one/two teacher community schools, the principles of this methodology has been incorporated a feature of the in-service teacher training programme.

NON-FORMAL EDUCATION

The Government has concentrated its very limited resources into building the formal system. Non-formal means of bringing basic education to Bhutanese women and children are still in the beginning stages.

Several experiments were carried out on a limited scale. For example, the National Women's Association of Bhutan (NWAB) has been training a group of young rural girls who have never gone to school or dropped out from school, at its training centre in Pemagatshel District. The course lasts for one year, and the girls are trained in the skills of weaving.

NWAB expanded the scope of this training course to incorporate such elements as health, nutrition and sanitation education side by side with weaving. NWAB has also held several District training workshops for women on health, nutrition and sanitation education with financial support from UNICEF. The workshops aimed at training female leaders to function as health

communicators in their rural localities.

In 1992, a non-formal education centre was started in Phobjikha valley in Wangdiphodrang District on a trial basis. A curriculum is also being developed of education and this will be used in the non-formal education centres to be set up all over the country.

The Dzongkha Development Commission, the Government agency charged with the development of the national and official language, carries out a training programme in Dzongkha language to non-Dzongkha speakers living in the eastern and southern parts of the country. During the 1987-1991 five-year development plan period, the emphasis was on oral training for Government officials and for city dwellers. During the next five-year plan period, the focus will be on rural areas country-wide, and on the incorporation of literacy education in Dzongkha.

SPECIAL EDUCATION

The Government has recently taken over the only school for the blind in the country from a missionary organization. Around 20-25 blind children are given primary and secondary education or skills training to prepare them to

take their place in society alongside sighted people. There is, as yet, no data available on the number of children who are either mentally or physically handicapped. Also, there is no provision for their education or training.

POST-PRIMARY EDUCATION

Children who are successful in the common examination held at the end of class 6 may be selected for entry to the junior high school. Progression is not automatic but according to the number of places available. Another qualifying examination at the end of class 8 eliminates

those considered not suitable for the two years of senior high school yet. At the end of class 10, there is another common exam to select those who may progress into the final two years of senior high school. There are thus, three major examination hurdles which students must clear

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before reaching the final secondary examination, the Indian School Certification Examination at the end of class 12.

The class 6 and class 8 common examinations are administered by the Bhutan Board of Examinations. The class 10 and 12 examinations are conducted by the Indian Council for Secondary Examinations, and therefore all curriculum for secondary schooling follows the requirements set by the Indian Council.

The degree-awarding college in the country, Sherubtse College, is affiliated to the University of Delhi in India. It conducts undergraduate courses in the Humanities, Science and Commerce leading to the Bachelor's Degree. Till 1990, only "Pass" courses were offered but from the 1991 academic year, "Honours" courses have been introduced. Students register for these

courses after passing the class 12 public examination.

Technical education is conducted on a three tier system. The first is a one year trade course at the National Technical Trade Institute, (NTTI). Entry is from class 6 and a pass in the common examination is required. There is a special pass classification, "pass for training" which does not allow progression to junior high school but does qualify the student for entry to NTTI.

The second tier is conducted at the Royal Technical Institute. This is a three year course which requires successful completion of class 8 examination for entry.

The third tier, after success at the class 10 examination, is a Diploma level engineering course conducted at the Royal Bhutan Polytechnic.

SUMMARY

There is every reason to suggest that education is the most dynamic sector in national development. The demand for primary education is becoming increasingly evident in community reaction to the community schools movement. This provides strong argument for greater emphasis to be placed on informing the people to help ensure that parents are ready and aware of the importance of education especially in the early stages. This is so that children can make a successful transition to school and succeed in the first few grades. This success will, in turn, ensure higher rates of progression through all levels of primary, thus building the Education For All commitment into reality.

The official language policy in education remains a concern. Decisions reflect political and other concerns and are in conflict with internationally researched and accepted

educational principles. While it is acceptable for English to be the language of instruction, the educational issues of transition from the language of the home to the language of instruction call for a closer examination of the first three grades.

The review and evaluation of the NAPE programme scheduled for September-October, 1992, should focus on this problem area. This evaluation will be carried out by an international team who will work in concert with a local team.

The preparation, already being carried out by the Department of Education, is a further indication of national commitment to primary education. This evaluation will carry out a very detailed analysis of the primary system and its findings will provide a valuable supplement to this situation analysis.

Figure 4.1

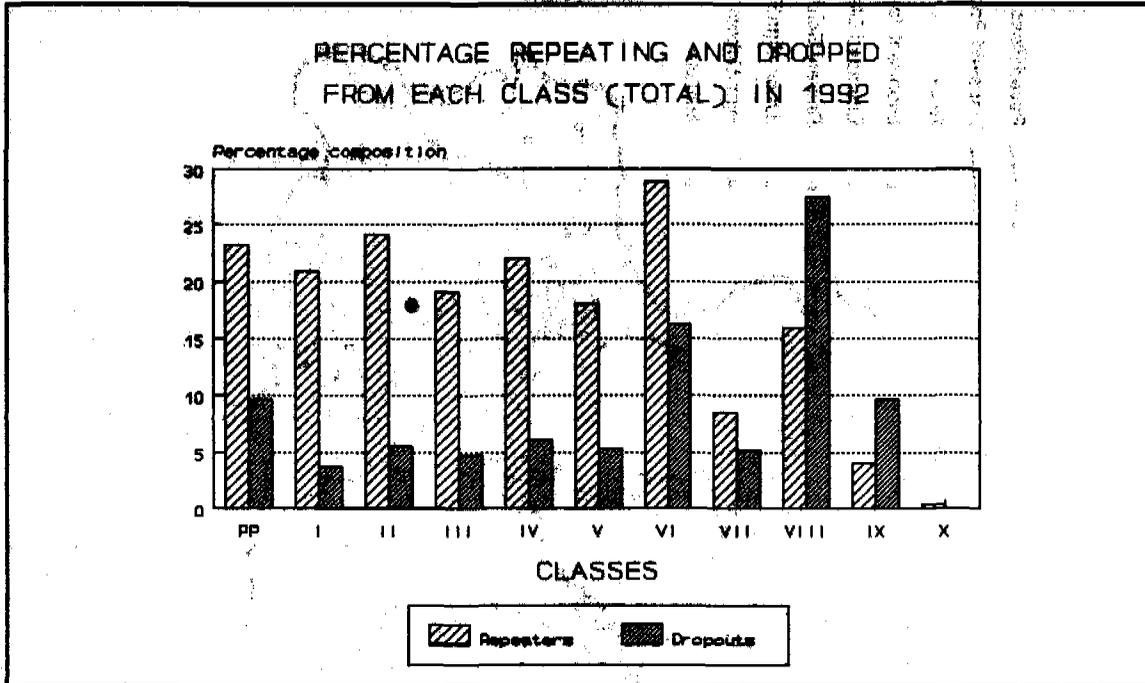
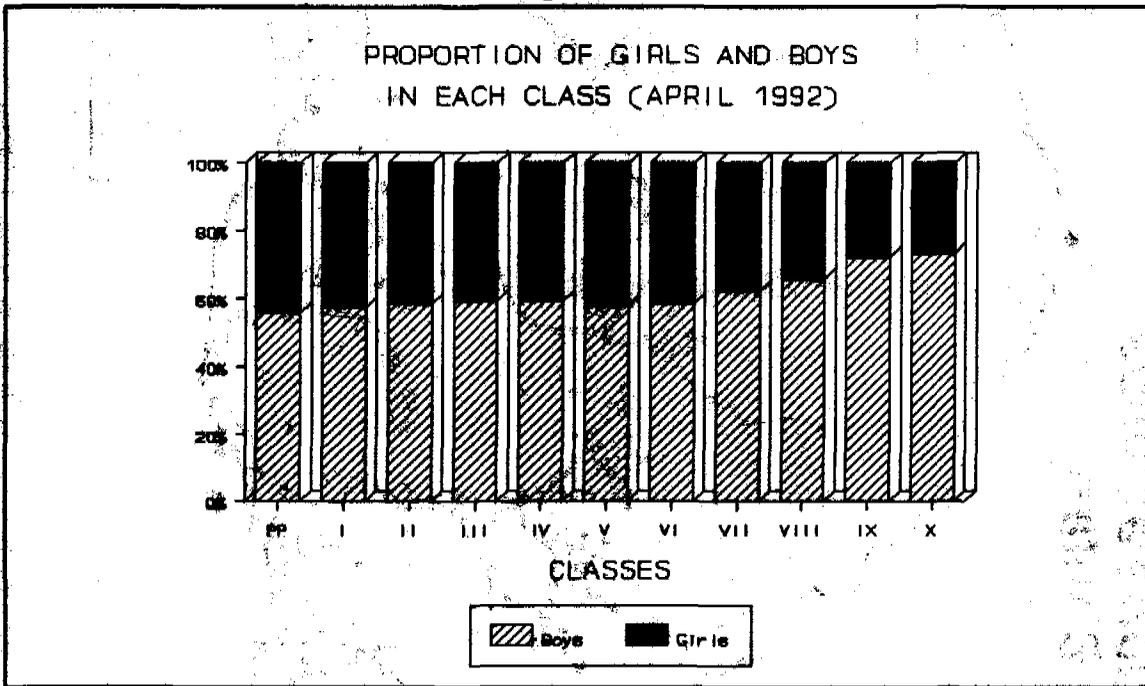
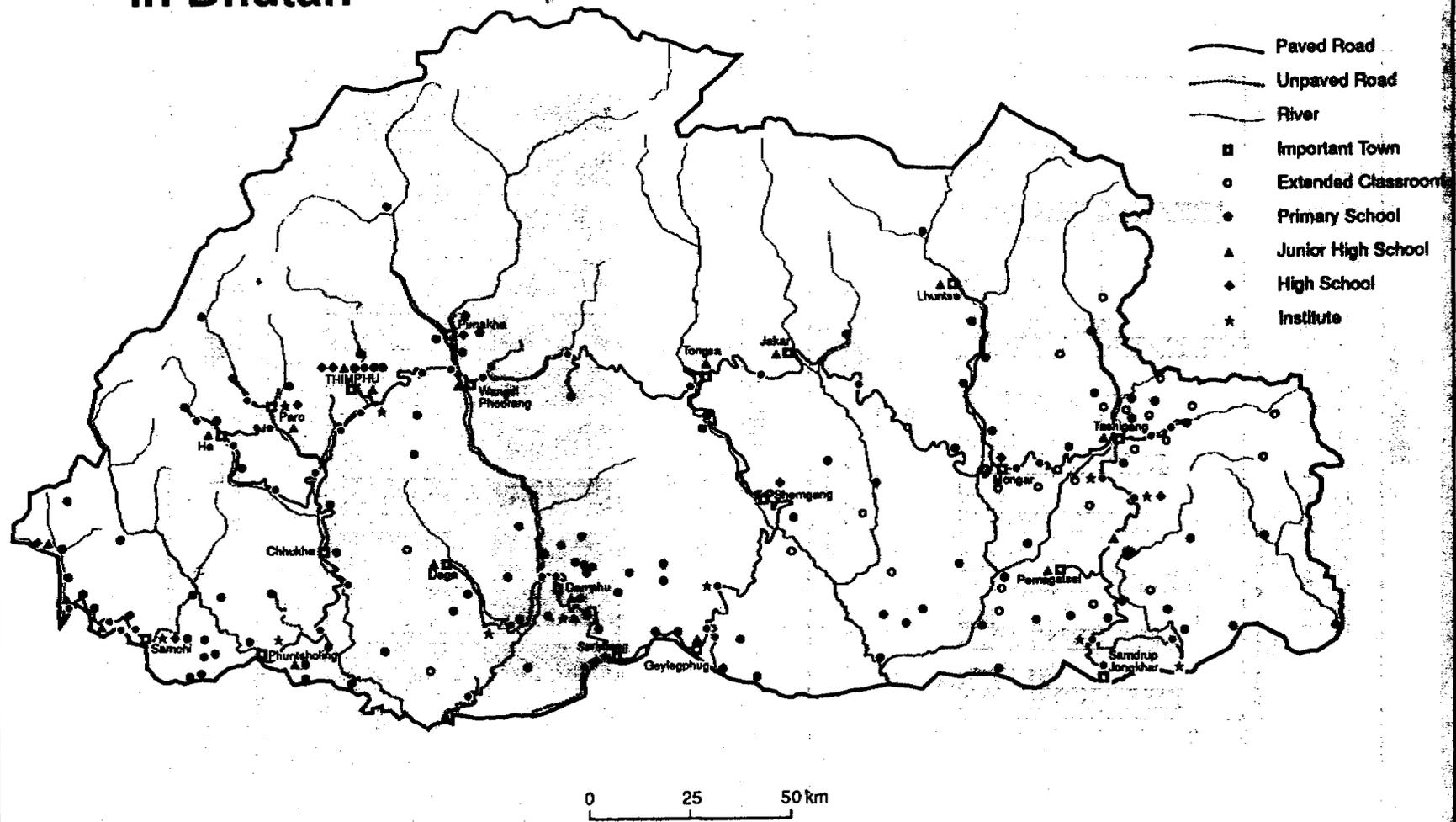


Figure 4.2



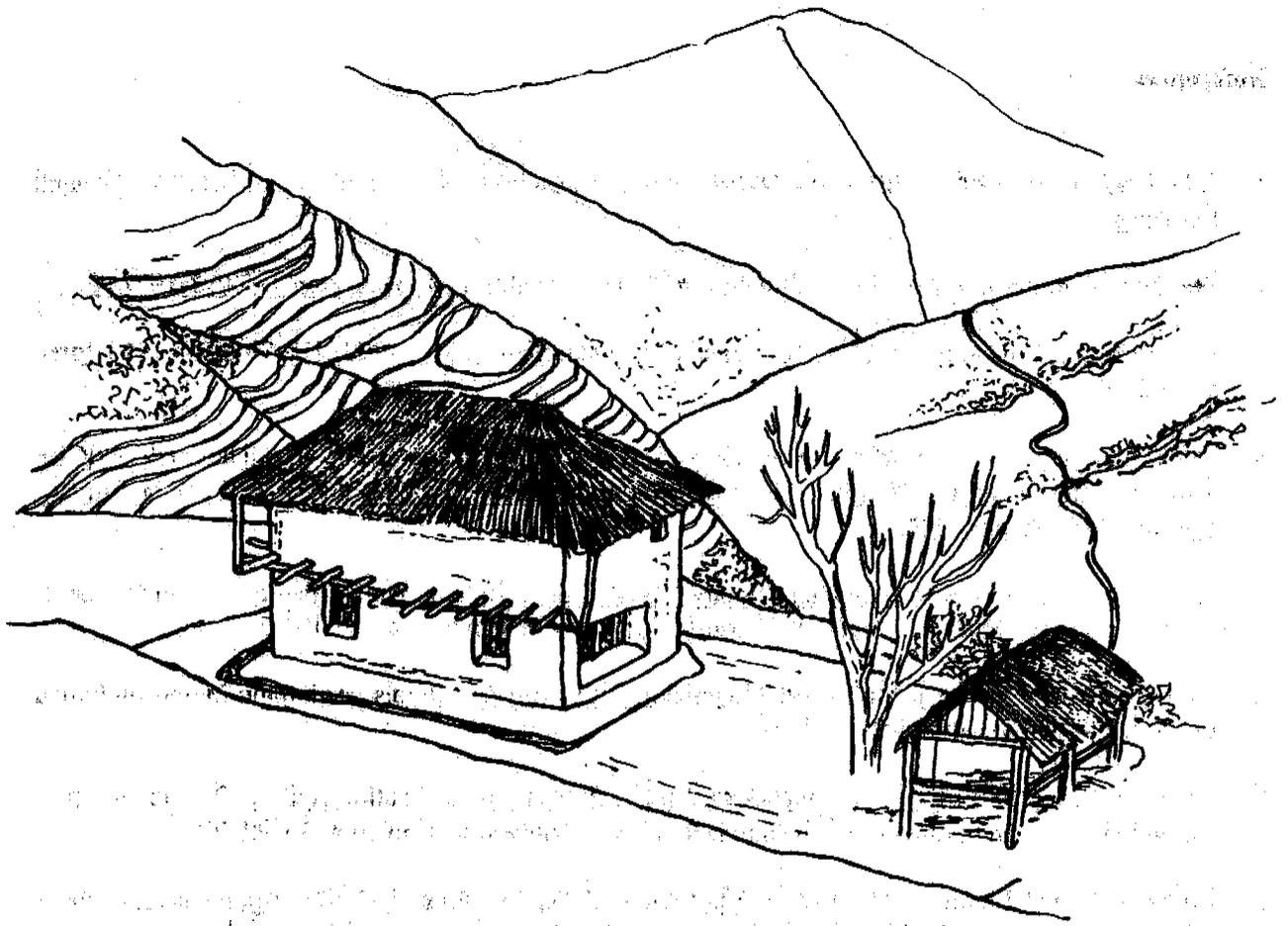
Education Facilities in Bhutan



** This map is used solely for the purpose of showing the existing facilities/services.
The boundaries have not been officially endorsed.*

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DHAN MAYA GOES TO SCHOOL

Dhan Maya woke reluctantly as her mother shook her and told her it was time to be up. How difficult it was to waken when it was still dark! She and her brothers had so many tasks to complete before leaving for school at seven o'clock.

She wearily dragged herself out of bed and went off to the stream, some 15 minutes walk away, water pot under her arm. How she envied some of her friends who lived in nearby villages with a newly built water supply which came through a tap, right beside their houses. She resented having to make this trip twice every morning and evening, yet it was a great help to her mother, who was so busy with other household and farm chores. And Dhan Maya did enjoy the chat and laughter as she waded to the deep part of the stream, while waiting her turn with the other girls. One can catch up on all the village news here. This morning she heard how one of the older girls had run away with a neighbour's son. Another family was rejoicing the birth of a son after two daughters. And so the stories go on...

Having left the water with her mother, Dhan Maya raced off with her *hassiya* to the trees at the bottom of their field of maize, and quickly chopped off some leafy branches. These she carried back up to the waiting goats, who warmly welcomed their morning feed supply. Dhan Maya was grateful to hear her mother calling her father and the boys in for rice. She was very hungry by now, and thoroughly enjoyed the meal of lentils, rice and green leafy vegetables which her mother had prepared. They each washed their own plate and hastily returned them to their mother before grabbing their bags of books and racing up the path to join the others heading off to school.

Dhan Maya is ten years old. She was fortunate that her parents allowed her to attend school with her two older brothers. They had to walk for an hour to get to school but some of her classmates had to walk for two or three hours to reach the primary school. She often found the classes boring, and sometimes wondered what use some of the things she had learned would come to. However, it was certainly a welcome break from working in the fields with her parents.

She reached home as usual around 4:30 in the afternoon and was very glad of the tea and roasted maize which awaited her. Then it was time again to fetch water and some fodder for the goats. Almost everyone in her village kept some goats; they were a very useful source of income. They would be fetched up ready for sale for the important *Dusserah* festival, or for a wedding in the village.

The maize had just ripened, as Dhan Maya and her brother took their *dhokos* and joined their parents in the field at the bottom of the hill. She enjoyed the job of picking the cobs, partly because it meant a delicious change in their diet for the next few weeks. It was so tasty roasted over the open fire and later, when it was drier, she would be given the task of grinding it for her mother to cook into a type of porridge.

It was becoming dark when the family finally trudged back up the hill to their home. They were glad to have it all harvested before the monkeys ate it. Some neighbours' fields had been totally stripped overnight by monkeys. Others were living in the cornfields for the past few weeks to scare such intruders away.

Dhan Maya remembered the arithmetic homework she had to do for the next day, and asked her mother for a kerosene wick in a bottle, as it was already dark. She had heard rumours that a mini-hydel had been promised for her village, but had little idea what difference it would make. She struggled through some of the exercises, encouraged by the assurance her father had given her that it would be very useful when she was older and would be dealing with prices of animals, paying for shared labour, or working in Government service. Perhaps it was worthwhile in the end!

By now, she was quite hungry and asked whether food was ready yet. She was told to wait another 10 minutes, so she looked through another book - geography this time. Then she thankfully put all the books into the bag ready for the next day. At about 8:30 p.m. the whole family sat on the floor while her mother served them plates of rice. Her mother would wait till everyone was satisfied before she too would eat.

How wonderful it felt, after eating, to stretch out on a *gundri* on the floor, and sink into a deep sleep, too exhausted to ponder on life and what it was all about. She would need plenty of rest to face another day tomorrow which would be very much like today ■



WOMEN & THE GIRL CHILD

Chapter 6

THE FRAMEWORK FOR ANALYSIS

Bhutanese women enjoy considerable freedom and are treated equal to men under the law. There is no overt discrimination on the basis of gender. There is also no evidence of discrimination against women and girls in terms of access to nutrition and health care, which exists in other countries of the region.

The underlying theme throughout this situation analysis emphasises the recent and cautious emergence of Bhutan from its long history of isolation. This emergence, since the mid-fifties, has until recently had the greatest impact on a small minority, mostly the traders, the Government's civil servants, the educated.

The isolation imposed by the mountains, combined with the lack of reasons for people to

move away from their communities, encouraged isolation in rural areas while major centres such as Thimphu and Phuntsholing experienced substantial changes.

Chapter 8 on Communication notes the dramatic increase in social mobility. The isolation of rural communities is being reduced quite rapidly, and therefore any examination of the role of women in society, and specifically in development, must take account of important communication factors.

It is a worldwide characteristic that women have a disadvantaged place in society. The disadvantage appears to be particularly evident when the society is predominantly rural. To a large extent, this generalization applies to Bhutan, but with some important and outstanding exceptions to be noted. Compared to other countries in the South Asia region, the women in Bhutan are much less disadvantaged.

Bhutanese women enjoy considerable freedom and are treated equal to men under the law. There is no overt discrimination on the basis of gender. There is also no evidence of

discrimination against women and girls in terms of access to nutrition and health care, which exists in other countries of the region. The trends in both primary and secondary education indicate a rapid narrowing of gender differences.

The immediate focus of the situation analysis, therefore, must be in the context of rapid changes resulting from communication and increased social mobility, and the long term impact of an education system which is beginning to reach out to all people in the country. Some understanding of the social history specific to girls and women in Bhutan is however essential, not only to understand the situation now, but to appreciate the difficulties of accelerating the role women might be expected to play in development.

The analysis will, therefore, attempt to find some balance between the static factors embedded in social history and the dynamism being generated by social change.

The situation of girls and women with regard to health and education were analyzed in Chapter 4 and 6 and is not repeated in detail here.

THE TRADITIONAL ROLE OF WOMEN

There are three large ethnic groups in Bhutan, namely the Sharchops in the eastern part, the Ngaloops in the western and central parts, and the Lhotshampas in the south. This division has been simplified for clarity in this text but the Bhutanese see themselves and indeed classify themselves in a more complex way, e.g., those who come from a District Paro = Parops, Haa = Haaps and so on. Their religion and their social and kinship systems are different.

The traditional role of women varies from group to group. Women in all the ethnic groups are involved in agricultural work, animal husbandry tasks and domestic chores. Women

work in order to meet their families' basic needs, food, clothing, housing and health care. In spite of this vital role, the status of women has remained relatively low, particularly outside the household. The level of their participation in socially important decision-making is not commensurate with the importance of their role in the household and in the society. A sense of male superiority in family and social matters is found in all ethnic groups, though there may be some exceptions in a few urban centres.

However, the differences in religious beliefs and practices, the social structure, and kinship systems give rise to certain differences in the

Women & the Girl Child

role and the relative status of women among the ethnic groups. The Ngalops and the Sharchops are Buddhists. The Lhotshampas may be either Hindus or Buddhists. The inheritance system among the Ngalops is predominantly matrilineal. The Lhotshampas follow a patrilineal pattern. Among the Sharchops, all types of inheritance patterns are found, i.e. matrilineal pattern, equal inheritance by both daughters and sons, and patrilineal patterns.

There is a set of Buddhist notions among the Ngalops and the Sharchops which define the basic constitutions of each gender. Among them, the most revealing notion, sometimes expressed in daily life, is that it takes nine generations of reincarnations for a woman to have a chance of being reborn as a man. In other words, the male is the superior sex, and a woman's place in the world is based on that. In the course of daily life, it is expressed in the division of labour based on gender. The concept that the male is superior by virtue of his inborn characteristics finds its religious legitimization and sanction among the Lhotshampas as well. The reasoning for it in daily life, however, is expressed more in terms of customs and traditions than in terms of religion.

However, it must be said that it is difficult to term this religious notion of gender difference simply as "discrimination" against the woman or

girl, in the same sense as it is in neighbouring countries such as India or Bangladesh.

The existing evidence suggests that children in Bhutan are given equal treatment regardless of their sex, both physically and emotionally. The notion concerning gender is expressed more as a "difference" than "discrimination". Research on the situation of the girl child in northern Bhutan found people tend to perceive girls and boys being born with qualitative and innate differences. Girls are consistently described as soft-hearted, kind, nurturing, considerate, and therefore, more reliable caretakers than boys. At the same time, they are perceived as being very frail and weak, having before them a life of struggle as women. In contrast, boys are perceived as tougher, sturdier, more carefree and boyhood influences people's notions of what girl's life careers can or should be. It is sometimes expressed in the difference of people's attitudes towards education for girls and boys.

The Lhotshampas express a strong preference for a son, because he will stay and look after his parents in old age, whereas a daughter moves to her husband's house. However, as in the case of the Ngalops and Sharchops, this preference for sons does not determine the treatment daughters actually receive once they are born.

WOMEN IN THE FAMILY AND GENDER DIVISION OF LABOUR

The extended family is the predominant pattern of family structure in Bhutan. The place of residence for a couple after their marriage differs from region to region.

Among the Ngalops and the Sharchops, it is usually the husband who moves into his wife's home. In the case of the Lhotshampas, the norm is for the wife to go to live in her husband's home.

Division of labour by gender starts in childhood. In all groups, girls are socialized from an early age to help with female tasks and boys with those of the male. Among the Ngalops and the Sharchops, children are made to help with various chores, like fetching and carrying things. Their common duty is to look after the cows. When made to look after younger children, it is said that girls make more responsible caretakers than young boys.

In general, boys are left with more freedom to tumble and roam, more space and time for exploration and discovery, and with less responsibilities for the daily chores of the household. On the other hand, girls are expected to be more sedentary and composed. They have less freedom to roam about, and are generally expected to sit more quietly, act demurely, and attend to others in a more considerate way. Also among the Lhotshampas, it is predominantly girls who carry out domestic work such as baby-sitting, cooking, washing, pounding rice, winnowing, grinding, plastering walls and floors with mud and cow dung, making the fire, and so on. Outside the household, girls cut grass and carry firewood, whereas boys herd and milk the cows, cut fodder and firewood. One of the reasons for the lower enrolment rate of girls in school is the fact that they are needed to work at home.

The division of labour for adults remains much the same, though there are several additional tasks. Among the Ngalops and the Lhotshampas, a majority of the household chores are generally carried out by women only. Both sexes can, in principle, look after the children. In practice, this is nearly always done by women - not only because they are more likely to be on the scene, but also because women are conceived to be more nurturing and tender, and more responsive to children's needs. Among the Sharchops, the gender division of labour is reported to be less strict except for weaving,

which is almost exclusively women's work. Otherwise, both women and men do what needs to be done as the situation requires.

On the farm, some tasks are traditionally divided by sex by virtue of the physical capabilities of men and women, others may be performed by either. Among the Ngalops and Lhotshampas, both sexes weed, thresh, winnow, transplant and harvest, and either can look after the animals. Only males plough or sow and only women can garden, feed the pigs, collect, carry and distribute manure. It is that said, should a man come in contact with manure, his "brains" (*sems* - mind, spirit) would diminish, and so would the brains of any educated person. This notion is meant to justify why only uneducated women are fit to handle manure. Among the Sharchops, the division of labour by sex is less strict, though ploughing is generally done by men and transplanting by women.

There are only a few documented pieces of information available on gender division of labour at the farm level. One of them is a study on the division of labour in animal husbandry in areas of a livestock development project. According to this study, both Ngalop and Lhotshampa women are engaged in animal husbandry. However, the gender division of labour in cropping and livestock tasks was observed to be much less pronounced among the Ngalop households where members are more likely to take on equally many of the activities.

FEMALE LITERACY

The adult literacy rate has risen steadily during the last two decades, and is presently estimated to be 30 per cent. However, the level of female literacy is estimated to be as low as 10 per cent. This is mainly due to the fact that the modern educational system was established only 30 years ago. Also, until recently, preference

has been given to sons, and girls have fewer years in school, joining later and leaving earlier. Boys, very seldom girls, have been sent to monasteries for a religious Buddhist education and a life as a monk. This has further reinforced the differences between female and male literacy rates.

WOMEN'S RIGHTS; MARRIAGE AND DIVORCE

Under Bhutanese law, the status of women is equal to men. However, customary laws prevail over enacted laws in certain cases such as inheritances.

The system of arranged marriage is still practised in rural areas. However, it is a much more flexible system than other Asian societies because the consent of the couple is sought and respected by the parents who arrange the marriage. The Hindus who are mainly in the south also express a strong preference for arranged marriages.

The Marriage Act codified in 1980, provides the legal guidelines for matrimony. Marriage can be contracted according to one's own religious customs or in any other way. But all marriages are subject to the same rules and regulations under the law.

The basic system of marriage is monogamy, but polygamy is permissible under the law with the consent of the first wife. Polyandry is illegal by law, although it is practised by small groups of semi-nomads close to the border of Tibet or Bhutanese of more recent Tibetan origin. It is always a brother polyandry.

The payment of a dowry is not practised among any of the ethnic groups in Bhutan. On the contrary, the pattern is that the bridegroom's family gives gifts to the bride or bride's family.

According to the legislation of 1957, marriage, contracted according to customary rites and rituals or following an engagement, requires

a marriage certificate from a local court of law witnessed by a woman and a man. This legalizes the matrimonial alliance. However, in reality, in most parts of western, central and eastern Bhutan, especially the rural areas, there is no formal marriage ceremony or application for a marriage certificate. Cohabitation often develops out of nightly visits by a man to a woman. Marriage is entered into relatively easily, and easily broken.

Compared to neighbouring countries there is less stigma attached to a woman having children without a resident father or being a divorcee. There is, however, concern expressed about chastity and the reputation of females. As a result of the form of marriage practice, there are reported to be a large number of children without a resident father.

Despite recent national legislation regarding child support after divorce (Nu.30/US\$1.2 as of 1991 per month per child below the age of 10), the overwhelming pattern seems to be that the unmarried mother, often without a marriage certificate, is solely responsible for the practical and financial support of her children. It is expected that this situation will give economic hardship to divorced women, though it will also partly depend on the kinship and inheritance system of the ethnic group concerned.

In the south, a girls' chastity is guarded more than in other parts of the country. There is little chance of a girl marrying if she has a child out of marriage.

VIOLENCE AND SEXUAL EXPLOITATION

Part of the Marriage Act of 1980 and its amendments are dedicated to regulations relating

to rape. When a woman is a victim of rape, the man or men who committed it are liable to

punishment depending on the gravity of the consequences of the act. If the woman is not of a "loose and immoral character", she will be compensated and the man has to pay a sum as a fine to the Court.

If the woman is married, her husband is also recompensed. If the woman is of a "loose and immoral" character, the man or men have to pay a fine to the Court and compensate the husband, but the woman herself is not compensated. The punishment for rape is generally not heavy, such as a fine of Nu. 600/- and three months in prison.

There is no statistical data on the frequency of violence (including sexual violence) against women in Bhutan. However, violence directed towards the wife does take place, and it is reported to be one of the main reasons that lead women to seek divorce. Many girls and women express their fear and the feeling of exposure and vulnerability to the dangers of violence and abuse.

An organized system of prostitution is prohibited by law and there is little evidence of it taking place.

INHERITANCE AND PROPERTY RIGHTS

The Inheritance Act of 1980 states that all children have equal rights to the family property irrespective of age and sex. In reality, however, it is customary laws that prevail in the case of the wealth of the family. The customary laws differ from one ethnic group to another. In general, the Ngalops and a majority of the Sharchops give at least equal share, and in most cases, a larger share or all of their property to

their daughters. Among the Lhotshampas and the rest of the Sharchop population, it is, generally, the sons who inherit.

When divorce occurs, personal property acquired before the marriage reverts to the original owners, while property acquired after the marriage is divided equally between the husband, wife and children if any.

LABOUR LAWS

There is no comprehensive labour law in Bhutan, except for the rules of the Royal Civil Service Commission in the case of civil servants.

In Government service, everybody is paid a salary according to grades set by the Royal Civil Service Commission regardless of sex. But there is some disparity by gender in other areas, such as minimum daily wages for unskilled labourers. For example, adult female road workers get Nu. 500 a month (about US\$19 as of 1991), whereas men get Nu. 600 for equal hours and equal work.

The rules of the Royal Civil Service Commission say that every female Government worker will be entitled to three months paid maternity leave for up to three births. In the case of an illegitimate child, however, the father has to pay for this. For the fourth birth, no paid leave is given, though the woman is entitled to take unpaid leave. In the case of road workers, pregnancy leave for females varies from none to 15 days depending on the camps they work in. Pregnant women generally have to take their annual leave of 15 days for this purpose.

EMPLOYMENT AND INCOME GENERATION; ACCESS TO FINANCIAL RESOURCES

Most educated women work in the areas of education, health and nursing and in office work. The female percentage in higher-level positions is less than one per cent. This is mainly due to the difference in the level of education between women and men.

Ninety five per cent of the female population live in rural areas and are engaged in agricultural activities. Around 0.25 per cent of the women are engaged in the service sector, 0.27 per cent in business and 0.18 per cent in other areas of work. There are no data available on women's participation in the industrial sector. As of January 1987, out of 11,078 Government employees, only 1060 or 9.57 per cent were females. This figure does not include teaching and non-teaching staff of schools, where 28 per cent is female in 1992. Most educated women work in the areas of education, health and nursing and in office work. The female percentage in higher-level positions is less than one per cent. This is mainly due to the difference in the level of education between women and men.

Urban women are active in the private sector as managers of small scale enterprises and

shopkeepers. However, women whose husbands serve in the Government, are not allowed to run their own business. Though meant to minimize the possibility of corruption, it has the effect of excluding married educated women from starting their own business.

One of the few options of income generation for women is the weaving of traditional Bhutanese clothes (*Kira* for women, and *Gho* for men), which is widely practised in the Sharchop and Ngalop areas. It is not known what financial contribution weaving makes to the household economy. But skilled weavers in both urban and rural areas can occasionally earn substantial amounts to supplement the regular income of the family.

In central and eastern Districts such as Bumthang, Lhuntshi and Tashigang, weaving is a major activity for women during winter, when there is less agricultural work. There are several difficulties in income generation through weaving, especially related to marketing. In remote areas, weavers do not have regular access to the market, and the cost of marketing can be quite high. The influx of cheap Indian made cloths in recent years has decreased the market for the more expensive Bhutanese handwoven clothes for everyday wear.

CREDIT

Access to formal sources of credit is very limited in Bhutan, and it is especially so for women. For instance, in three sample Districts (one each from west, east and south), women taking loans accounted for only 15.3 per cent of all the loan cases and 19.2 per cent of the total value of the loans in 1989. This may be due to the fact that the land, required as a collateral, is registered under the name of the male member of

the household in this region. The same could, however, also apply to western and central parts of Bhutan where a majority of the land is registered in the woman's name.

Men have sometimes obtained loans by fronting the women's name and then using the money for their own use. Another factor limiting women's access to credit is the lack of

knowledge about how to apply for credit and a tedious application process. Women have to take time away from their household duties to travel to the District headquarters hours or days away, in order to apply for the loan. Female dominated

activities, such as weaving, are not included as viable for credit. As long as women do not have better access to credit, especially for agricultural improvements, they will be at a disadvantage compared with men.

CONTROL AND USE OF HOUSEHOLD INCOME

The control and use of household income differs from one ethnic group to another. According to household surveys conducted in southern areas, e.g. Samchi and Chukha Districts, the Lhotshampa women were generally found to be in charge of keeping cash. However, the senior male member of the household has the greatest control over income use. He makes the decisions to purchase important agriculture and animal husbandry inputs, and to sell such items as property and land. It is reported that men and women frequently discussed domestic purchases such as food and clothing but the men actually did the shopping.

Among Ngalop households, the control of the family income is frequently in the hands of females. Land ownership seems to be a very strong factor in determining who controls household income. In all the households where

women had land ownership in their names, it was reported that they exerted a stronger role on the control of household income.

Another factor which seems to influence the control of household income are the marketing patterns. Women seem to sell poultry, butter, cheese and vegetables, and income generated from this is generally kept and used by the women for themselves and household expenses. Income generated by the sale of livestock and cash crops is more frequently controlled by men. The control over the sale of milk was reported to be very much determined by marketing patterns. Men or women who sell milk to local markets generally control the income for their own use. Households selling milk to the co-operatives tend to use the income for the family rather than personal use.

SUMMARY

Bhutan does not have the religious and social factors of discrimination common in other areas of South Asia, and the Government's commitment to improving the situation of women is firm and positive. As more women reach positions of responsibility and influence in commerce and the civil service, it is reasonable to expect a rapid broadening of the impact of women in development.

The growing recognition of the role of women in development in the country led to a resolution, in the Fifty-third Session of the National Assembly, for the establishment of National Women's Association of Bhutan (NWAB).

The Fifth Five-Year Plan (1981-1986) incorporated for the first time a separate chapter on women in the national plan. It stressed the importance of improving the social, economic and health status of women, especially rural

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women. This broader awareness of problems faced by women was also reflected in the Sixth Plan, (1988-1991), and again in the Seventh Plan which comes into operation from July 1992.

The National Women's Association of Bhutan (NWAB) is the only organization for women in Bhutan. It was established in 1981 as a Non-governmental Organization (NGO) by Royal Command to promote the welfare of women in the country, especially in the rural areas.

In 1985, after functioning as a NGO for four years, NWAB became a non-ministerial Department of the Royal Government. In 1991, NWAB had 375 members and branch associations in thirteen out of eighteen Districts in the country.

In July 1992, NWAB reverted to the status of an NGO. Until it finds its funding from external sources, the NWAB continues to be supported by the Royal Government.

The National Women's Association has been engaged in such fields as health, income-generation and female education. Other ministries and departments have been trying to incorporate and tackle the issue in each of their fields and the results of these efforts have gradually materialized. For example, the enrolment rate of girls in primary school has been increasing more rapidly than that of boys.

Also women working in the modern sector provide positive role models to the younger generation.

At the same time, however, there is some concern that the difference between women and men has not been reduced sufficiently in some fields. For example, despite the Government's strenuous efforts, women's access to new technologies is still very limited. In areas such as agriculture, animal husbandry and rural credit,

it is still predominantly men who have been contacted and served by the extension services.

The fact that most women are illiterate - estimates run as high as 90 per cent - means that changes cannot be rapid. However, the movement of young educated women into Government offices, United Nation's offices and positions of responsibility in the private sector clearly indicates that the process is well under way.

The change will become more evident as an increasing number of girls enter the school system and succeed in reaching secondary levels. Bhutan does not have the religious and social factors of discrimination common in other areas of South Asia, and the Government's commitment to improving the situation of women is firm and positive. As more women reach positions of responsibility and influence in commerce and the civil service, it is reasonable to expect a rapid broadening of the impact of women in development.



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KOTA AND HIS LITTLE BROTHER

Phuntso Wangdi is a little sparrow of a boy from a village in Shingkar Lauri in Eastern Bhutan. He is about five but not much bigger than the little two-year-old girl he often sees with her mother who lives only a few houses away.

Phuntso Wangdi's mother, Thungse, was married off at the age of twenty by her maternal aunt since her own mother had died, to her second cousin, Tenzing. A year after the marriage, when Thungse was six months pregnant, Tenzing left the village to go to Thimphu to seek employment and did not return for two whole years. So, Phuntso Wangdi was born in the absence of his father and did not see his father till he was almost two years old.

When Phuntso Wangdi became two, the young couple decided to leave the village and move to Thimphu for better opportunities. This is their third year in the capital. Phuntso Wangdi now has a little baby brother who is a year and a half and his mother is already seven months pregnant again.

The family lives in a little one room hut in the middle of a corn field. They neither have a latrine nor running water. Thungse fetches her water from a near by garden tap. Tenzing works as a carpenter's assistant and has a drinking problem. Thungse spends most of her time at the loom weaving things on order from other people and this is her only source of some personal income.

Phuntso Wangdi or Kota (little brother) as all the neighbours call him, is up with the birds in the morning. Before the neighbours are even out of their beds, they can hear him wandering about in the yard playing with a stick or an old tin can or whistling away in a very grown up fashion. All day long he plays in the neighbour's compound while his mother works at the loom. But of late, he has a new responsibility; since his mother has recently stopped breast feeding the little brother, he now trails Kota everywhere he goes.

Almost all of Kota's clothes are 'hand me downs' and more often than not, the elastic waist bands of his pants have given way and so he plays or runs about the place with one little hand perpetually holding up his pants at the waist.

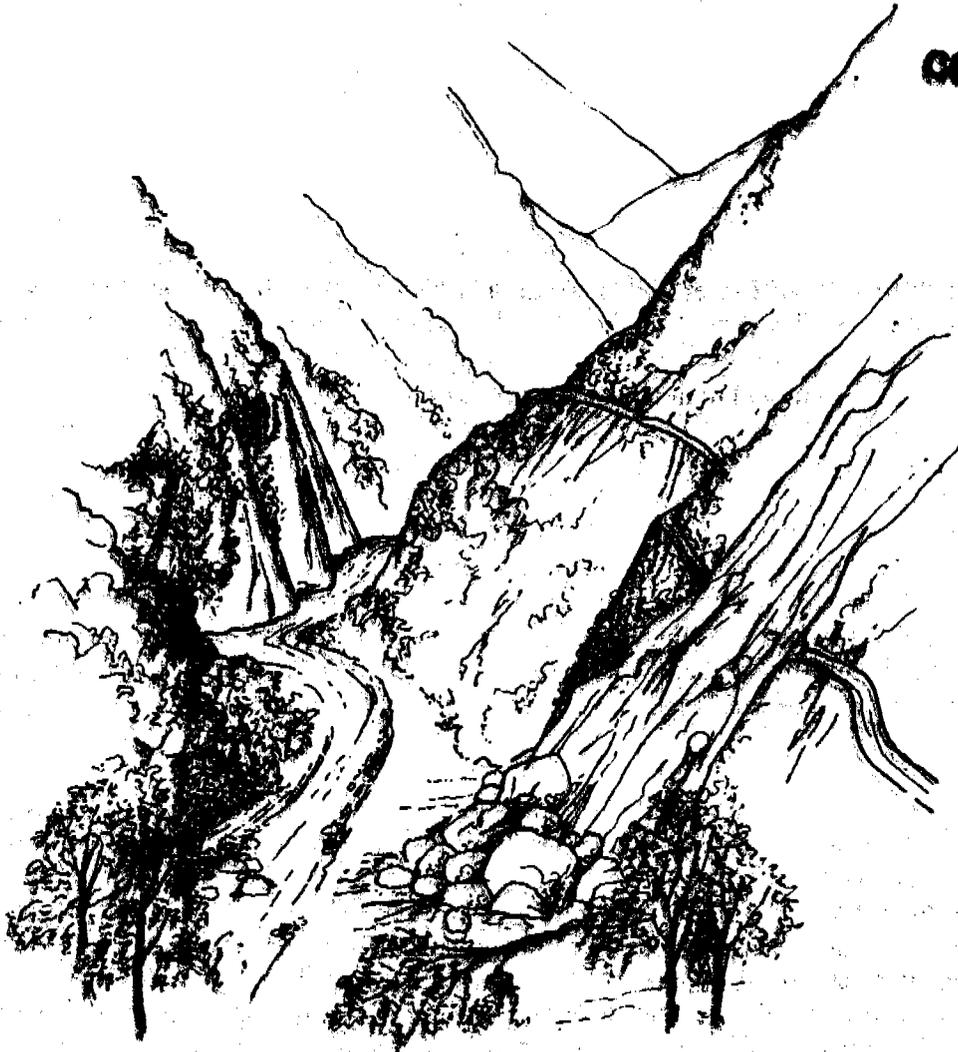
For such a little soul as Kota, life can sometimes be rather harsh. Both Tenzing and his wife do not think twice about giving Kota a sound thrashing at the slightest pretext. Tenzing is especially abusive when he has had one drink too many and Thungse beats him because she is often under domestic pressure and irritable as a result of the new pregnancy. Kota is often shooed off by the neighbours for unknowingly destroying the flowers in their garden.

Kota eats three times a day, meals which mainly consist of white Indian rice and a curry of potatoes or pumpkins with chillies. Once or twice a week he eats dry fish curry, but rarely any fresh meat or fruits. He does not like to eat eggs and milk is an unknown luxury.

Whatever the odds against him, armed with the protection of a full course of immunization, Kota is a little survivor, and even at this tender age he takes care of himself. He washes himself at the garden tap and has long been cut free from his mother's apron strings. Although underweight and malnourished, in a couple of months' time he will have completed his fifth year considered quite a feat of survival since two out of every ten children in Bhutan don't make it to their fifth birthday. In another year's time Kota will be of school going age. Will he be there? Or will he be still busy taking care of his little brother, or, perhaps the new sibling in the making? ■

COMMUNICATION

Chapter 7



INTRODUCTION

The physical barriers created by the Himalayan mountains dominate the list of constraints and compound the expenses involved in upgrading communication networks... Despite these difficulties, the Government is moving ahead rapidly, and all major networks of radio and telephone systems are being substantially upgraded.

There are clear indications that Bhutan is experiencing major changes in all areas of communication and with it, comes implications on every aspect of national development. The most obvious feature of this expansion has to do with technological advances in the mechanics of communication. Greatly increased social mobility is very important and is given prominence in this analysis.

The physical barriers created by the Himalayan mountains dominate the list of constraints and compound the expenses involved in upgrading communication networks. The technology necessary to overcome these barriers is highly sophisticated and expensive, and thus the expertise required to operate and maintain new equipment will create new demands on the limited human resources available. Despite these difficulties, the Government is moving ahead rapidly, and all major networks of radio and telephone systems are being substantially upgraded. Some major improvements have already been implemented.

The expansion of communication resulting from greater social mobility cannot be easily

documented, but must be considered as a significant factor affecting development. This will be examined from the point of view of communication of ideas, attitudes, knowledge, skills, and above all the reduction of what might be described as the isolation syndrome.

The increase in social mobility is both domestic and international. While statistics are not immediately available, the great increase in people moving about Bhutan is an easily observable fact. The acquisition of a jet aircraft with larger seating capacity than the two previous small 18-seater aircrafts and an expanded route system has encouraged far more movement at the more selective level of international travel.

PHYSICAL BARRIERS

Roads had to be constructed through some of the most difficult terrain in the world, and annual landslips and washaways isolate whole sections of the country. This creates enormous demands on the Government's capacity for road maintenance.

The building of roads in Bhutan is a story in its own right. In the three decades since Bhutan began to cautiously open up to the outside world, the building of road links has been a priority. The first essential link was to provide access to India from the centres of Paro and Thimphu. This enabled communication, especially in the form of commercial links, to develop more rapidly with India and the outside world. The next priority, more difficult from an engineering point of view, was to link the various centres across the country, from west to east.

From a geographer's point of view, the logical lines of communication would be north to south, following the great river valleys. But the

social, commercial and political requirements call also for east-west links, across the mountains which divide the rivers. Roads had to be constructed through some of the most difficult terrain in the world, and annual landslips and washaways isolate whole sections of the country. This creates enormous demands on the Government's capacity for road maintenance.

The problem of keeping the road system open and dealing with the annual roadblock emergencies is a constant drain on financial resources. Maintenance teams live in small roadside camps at intervals along all main roads, and the task of patching, rebuilding, and clearing roadblocks is a year-round fulltime activity. It is also very expensive and so the building of new roads is a slow process. However, the road network remains the essential baseline for the national system of communication.

The road system, is however, still skeletal. The traditional mule and horse tracks and foot bridges connect villages to each other and to the arterial roads. Distance is still quoted in hours

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required to walk, and road travel in the number of hours driving time rather than kilometres.

Despite the immense difficulties resulting from geography, remarkable progress has been made during the past 30 years. It is now

possible to travel by road to all main centres of Bhutan with reasonable speed and comfort. However, the nature of the road in Bhutan, characterized by contoured twisting and turning, is such that most vehicles travel at an average of 30 kilometres in one hour.

TELECOMMUNICATION

Telecommunication links within the country are between main centres only. There are 13 telephone exchanges in the whole country, and few of these are inter-connected. There is no countrywide network, and the links which do exist are unreliable. Since January 1990, however, satellite links have greatly improved the capital, Thimphu's access to the outside world. The satellite links allows for voice and facsimile transmissions to be made by direct dial to most parts of the world from Thimphu.

Domestic links are made via the 39 wireless telegraph stations located at key points throughout the country. Morse key transmission

is the standard method of communication, with a voice channel used for contact identification and checking words sent by morse when clarification is necessary. The radio transceivers used are an inexpensive type of radio very popular with "ham" amateur radio operators. Although the system is quite unsophisticated and uses very old technology, it is surprisingly effective.

An immediate priority of the Seventh Plan is to replace this network with state-of-the-art technology and introduce fully effective voice transmissions. Negotiations are well advanced to make this a reality in the first part of the Seventh Plan period.

MASS MEDIA

This term has very limited application in Bhutan. The print media has little impact on a population which is predominantly illiterate. The Government publishes a weekly newspaper called the "Kuensel", printed in Dzongkha, English and Nepali. It has a circulation of approximately 10,000 copies and is published by the Department of Information of the Royal Government. Book publishing facilities are extremely limited in the country, and most school textbooks are printed abroad.

Despite a low literacy rate in the country, the print medium still enjoys a high emphasis when it comes to delivering development messages. A

study indicates that a high percentage of the general population can identify static pictures in different forms ranging from colour-wash to line-drawings. Actions denoted or messages indicated, however, are hardly ever understood. This is, perhaps, because of a culture where religious paintings and traditional repetitive designs are common features. Clearly, there is a higher potential in the use of pictorial/illustrated printed materials than has been yet realised. But this will require a gradual build-up on the present visual perceptions.

In a society, which has a strong tradition of oral communication, the radio would be the key

means of mass communication. However, once more the constraints imposed by geography have to date prevented the development of the national radio as a major force for mass communication. The terrain is such that very powerful, and therefore expensive, transmitters are required. Although the capacity was substantially improved in 1991, national broadcasting is still restricted to only parts of each day.

The Bhutan Broadcasting Service (BBS) transmits on shortwave frequencies to the whole country, and AM/FM to the Thimphu valley area, between 700 and 200 hours, Monday to Saturdays. On Sundays the programme is extended to six hours from 000 to 600. Programmes are broadcast in four languages: Dzongkha, English, Sharchopka and Nepali.

The Seventh Five Year Plan intends to gradually increase broadcasting time to an average of twelve hours each day by 1997. There will also be further upgrading in terms of programme production capability, and BBS is expected to play an increasingly important role in the social development of the country.

There is no reliable data on the number of radio receivers in the country. However, a recent, unpublished survey carried out by the Central Statistical Office suggests that about 28 per cent of the people in 13 District have access to a radio set. People in the southern region of the country which is more heavily populated have more access to the national radio and to radio stations in India. Another survey indicated that about 58 per cent of the urban population in the south have access to radios. No license or registration formality is required for possession of a radio.

Bhutan does not have a television station, but there has been a noticeable rise in the number of video cassette libraries over the past three years. Video watching has arrived in Bhutan in quite a big way among those who can

afford the purchase of the hardware. The proliferation of video library shops, at least in the Thimphu area, indicates that this is an area of considerable communication growth. It also indicates that an increasing number of urban Bhutanese can afford what are generally regarded as luxury items.

The Development Support Communications Division (DSCD) of the Government has been producing development communication materials such as posters and video films. It is quite adequately equipped with in-house production facilities for small print runs and AV materials in VHS format and slide-sound synch.

Over the years, its production skills have developed at the cost of communication skills in the areas of strategy formulation, selection of themes, planning, pre-testing of prototypes and relevant research capabilities. DSCD also conducts training in communication skills, though they have rather limited manpower (one at the moment) and skills for this.

There is a proposal to convert the DSCD into a Development Communication Centre and to give it autonomy. This would encourage it to develop its potential in providing concerted communication support to social development projects and expand its operations during the period of the Seventh Plan.

There is an Information, Education, Communication for Health (IECH) Bureau within the Department of Health Services setup with the exclusive responsibility of providing communication support to all preventive health projects. Though originally designed to include some production capabilities, the Bureau is currently responsible for assessing communication needs, identifying methods/channels and materials and deciding on the content. DSCD is then requested to develop the materials and help with the production process. The print media has dominated so far.

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The IECH Bureau uses the health extension cadres at the District level who are given both pre-service and in-service training at the Royal Institute of Health Services (RIHS), which is also directly under the Department of Health Services. The courses offered are, however, mainly of a technical nature with more and more health communication components gradually being built in. Courses are conducted almost entirely by doctors with relatively small inputs on communication skills from DSCD.

Though sanitation and hygiene promotion is part of the job responsibilities of the extension cadres, there seems to be little collaboration between them and the Department of Works and Housing responsible for the UNICEF assisted Rural Water Supply and Sanitation project.

No comment on the communication situation in Bhutan is complete without some reference to

the difference between the northern areas and the narrow lowlands plain which borders India. Communication access in the southern region is effectively an extension of the bordering Indian state. People living in this area are predominantly Nepali speaking, and have excellent radio reception from India, along with access to video shops and newspapers.

The flow of communication from the north to the south tends to be through the various Government and administrative agencies. There is, of course, a strong flow of communication through the commerce sector, but very little flow in terms of social and cultural communication.

The school system no longer uses the dominant language of the area, Nepali, but operates in English with Dzongkha taught as the second language.

SOCIAL MOBILITY

No statistical survey has documented the great increase in domestic travel. One can easily observe the increase in daily buses, always crowded, on all major roads. It is obvious that people are moving about the country, even in the remote areas. The main town square in the eastern centre of Thimphu, for example, is crowded from early morning as buses and trucks depart in various directions. Travel right across the country was a rare event a few years ago but is now a common event.

This internal travel is an important aspect of communication, especially in a country with a strong tradition of oral communication. Increased mobility encourages a wider exchange of ideas, sharing of information, experience, attitudes.

Within the professional, administrative and commercial ranks of society, a vastly upgraded airline service plus easier overland travel to India, enable many more people to move outside of Bhutan. Government officials and an increasing number of business people travel abroad regularly.

The whole area of social mobility affecting people in Bhutan would benefit from close study over the next few years.

There is no doubt that the isolation syndrome is being affected, that the increasing flow of communication is benefitting the community and that there are important implications for development.

TRADITION AND COMMUNICATION OPPORTUNITIES

The network of monasteries, monks and nuns and other lay orders of the religion have enormous potential in furthering the cause of child survival and development.

Religion plays an important role in the life of Bhutanese people, particularly in those areas which are predominantly Buddhist. Again the distinction must be made between those who live in the mountainous regions, and those Nepali who live in the south and are mostly Hindu and Nepali speaking.

Among the Buddhists, religious personalities are highly respected and have great influence. The influence of the monks pervades the whole community and, their help for example, will often be sought in health matters in preference to the regular health services. Monks and others associated with the religion are invited to perform many family and community ceremonies

and influence many aspects of daily life. The major religious festivals are central to life in Bhutan and some of them may have the potential of accepting and carrying more secular, social development messages as well. It is clear, therefore, that the network of monasteries, monks and nuns and other lay orders of the religion have enormous potential in furthering the cause of child survival and development. This is progressing cautiously and slowly overcoming the inherent conservatism, and at times suspicion, of a deeply traditional society.

Though there are no known formal study of the traditional folk performing arts there are opinions that some forms (e.g. an equivalent of debates through music and songs) have the potential of being a good channel for rural communication.

Emergency messages already reach remote areas quite effectively, sometimes through the road transport system while traditional "runners" are efficient messengers between villages.

COMMUNITY PARTICIPATION

Bhutan has a long tradition of popular participation in activities like tilling, harvesting, house building and repair, transporting food and other essentials. This apparently stems from the fact that individual families are not large enough to be able to cope with these survival activities by themselves. This is more so because of the extra hard work necessitated by the nature of the terrain which often takes the able bodied away from home for long periods/hours.

Besides generating community participation, this also encourages an extended family system with mutual benefits to the host family and the live-in relative.

The community gets together to discuss the work needed in the village, decide on when and how to do it and selects individuals and/or families to do the work, almost a perfect modus of democratic work planning. An obvious corollary to this was the rise of an effective rural leadership system. This tradition largely continues today with changes in the nature of activities, e.g. transporting food and other essentials is no more a community activity in areas where mechanised transportation has become possible.

The administrative policy of the Government has taken this tradition into account in

Communication

formulating its development plans and administrative structure. There are "Development Committees" at the District, Block and village-level, the first two being expansions built on the traditional concept and setup at the village. Membership will range from the District

Administrator to the traditional village leader. Apart from the routine advantages of a decentralised administrative structure, it is expected that this will offer potential for information exchange and persuasive communication at grassroot levels.

THE SEVENTH PLAN

More effective communication is the underlying theme of the Seventh Plan. While the emphasis will be on major improvements in telecommunications, the potential of the BBS national radio has been recognised and this area of communication should become far more significant.

The potential of school teachers and other Government employees as social communicators has not been exploited. Agricultural extension workers, forest rangers and health workers have tended to concentrate on the technical aspects of their work. Their knowledge of rural communities and their access to people in remote areas would enable them to become important sources of social communication, and it can be expected that this will be used more effectively during the Seventh Plan period.

The technological advances, together with greatly increased social mobility, have already reduced the problems of isolation. The acceleration of this trend during the period of the Seventh Plan is not only highly significant for national development programmes, but has critical implications for social attitudes and the political future of Bhutan.

It would be a valuable exercise to monitor the various aspects of communication development and attempt to analyze progressively its impact on the social structure.

The communication component of every programme should assume more importance during the period of the Seventh Plan.

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