

ROYAL GOVERNMENT OF BHUTAN

THIMPHU



**A NATIONAL REPORT TO
HABITAT II**

“THE CITY SUMMIT”

**THE SECOND UNITED NATIONS CONFERENCE ON HUMAN SETTLEMENTS
ISTANBUL 1996**

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ROYAL GOVERNMENT OF BHUTAN NATIONAL REPORT

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GLOSSARY OF TERMS

1. ADB
 2. BCCI
 3. BOD
 4. CIDP
 5. CTPC
 6. CSO
 7. DANIDA
 8. Dratshang
 9. Dzongs
 10. Dzongdag
 11. Dzongkhag
 12. Dungkhag
 13. DYT
 14. EIA
 15. EPC
 16. GDP
 17. Gewog
 18. GIS
 19. Gup
 20. GYT
 21. HFA
 22. HRD
 23. MHE
 24. MOC
 25. MTI
 26. MV
 27. MSW
 28. NAB
 29. NWAB
 30. NUDC
 31. PCC
 32. PHC
 33. PPD
 34. PWD
 35. Rabdeys
 36. RAC
 37. RCSC
 38. RGOB
 39. SAARC
 40. SAPTA
 41. Thrompon
 42. TCC
 43. UMP
 44. UN
 45. UNDP
 46. UNCHS
 47. UNCED
 48. UNICEF
 49. Zhung Dratshang
- Asian Development Bank
 - Bhutan Chamber of Commerce & Industries
 - Bio oxygen demand
 - Cottage Industries Development Project
 - Central Town Planning Committee
 - Central Statistical Organization
 - Danish International Development Agency
 - Clergy
 - Administrative and religious centres
 - District Administrator
 - District
 - Sub District
 - Dzongkhag Yarge Tshogchung (District Development Committee)
 - Environmental Impact Assessment
 - Entrepreneurship Promotion Centre
 - Gross Domestic Product
 - Block
 - Geographical Information System
 - Elected Gewog Headman
 - Gewog Yarge Tshogchung (Block Development Committee)
 - Health For All
 - Human Resource Development
 - Ministry of Health and Education
 - Ministry of Communications
 - Ministry of Trade and Industry
 - Model Village(s)
 - Municipal Solid Waste
 - National Assembly of Bhutan
 - National Womens Association of Bhutan
 - National Urban Development Corporation
 - Phuntsholing City Corporation
 - Primary Health Care
 - Policy and Planning Division
 - Public Works Division
 - District Monk Bodies
 - Royal Advisory Council
 - Royal Civil Service Commission
 - Royal Government of Bhutan
 - South Asian Association for Regional Coperation
 - SAARC Preferential Trading Arrangement
 - City Administrator
 - Thimphu City Corporation
 - Urban Management Programmes
 - United Nations
 - United Nations Development Programme
 - United Nations Centre for Human Settlement
 - United Nations Conference on Environment and Development
 - United Nations Children's Fund
 - Central Monk Body

Summary

Background

The Human Settlements in Bhutan are influenced by harsh terrain, deeply etched river valleys, steep slopes and small dispersed pockets of fertile agricultural land. The phenomena of urbanization commenced with the introduction of a planned development process since 1961. The location of settlements is influenced by the newly constructed vehicular roads and other services. The perceived health and education facilities together with employment opportunities in the urban areas have encouraged rural to urban migration. These urban centres are, therefore, expanding very rapidly. These centres demand a high level of infrastructure services, social amenities and housing.

Bhutan has always been agrarian based economy and the focus of development has been rural oriented with the objective of promoting rural settlements. It has, therefore, become essential to address the emerging urban needs by developing appropriate policies and strategies.

Last 20 years

During the last 20 years the urban population has reached 14.5% of the national total and it is estimated that the annual increase is as high as 10%, particularly in larger towns. The Royal Government has established Municipal/City Corporations and an Urban Development Planning Unit, to plan, design, implement and to administer development plans. A number of rules, regulations, development plans, codes and taxation policies have been developed to assist urban administration.

Agenda 21

The Royal Government has also made efforts to provide shelter to all Bhutanese through investment on housing at a modest scale. In many cases land was provided at a subsidized rate to enable the people to invest on housing. To improve urban management, steps are already taken to give autonomous status to city administration. A land use planning project is already making efforts to study the land use pattern by improving the maps which will eventually support the land use management in a sustainable manner in the rural areas. It is planned that these programmes will be extended to the urban areas as well. The Government has recently developed a conventional sewerage system in the largest towns. In the health sector there is a growing concern regarding drainage systems as malaria cases are being reported from 60% of its Dzongkhags. The new element of urban management has been an introduction of water supply and sanitation rules covering solid waste management.

This demonstrates the commitment of RGOB for the development of environment friendly urban centres and for the improvement of the general health of urban dwellers.

Promotion of sustainable energy is a major thrust of development in Bhutan. Bhutan has the potential to generate 20,000 MW of power. Currently 341.66 MW of power has been harnessed. Starting from the first five year plan electricity has been generated through mini hydel projects and captive power plants to serve the many relatively small settlement areas country wide. In addition small solar energy programmes have been initiated to meet the energy needs of remote villages and institutions. While use of firewood is major source of energy in villages, efforts are being made to reduce the use of good forest woods so that deforestation is controlled.

There are over 3,100 kms of vehicular roads and 8,801 vehicles country wide. Journeys are performed mostly in passenger buses plying between districts. Those settlements without roads depend on walking and mule / pony transport.

The RGOB has also initiated studies on its perennial rivers, lakes and glacial areas so that mitigation measures can be designed and implemented, in case of any emergencies occurring due to lake burst, flash floods etc. Guidelines have already been issued for the management of flash floods, relief works etc. In the urban areas there is some capability to mitigate natural and man made calamities.

Efforts have already been made to regulate the construction industry by framing rules, regulations, codes, manuals and guidelines. The Government is making efforts to promote use of local materials and labour for constructions both for climatic conditions and economic reasons.

Best practices

Bhutan is known for its best practices in the field of natural environment. The following activities qualify for best practices in the Bhutanese context.

1. Model Village

The concept of Model Village emerged in the 1970's and has been in practice for the last 20 years. The concept is indigenous and there is a high degree of social acceptance. It started in Bumthang Dzongkhag and it has now gradually been adopted in other Dzongkhags. There are 22 model villages today. The activities carried out under the Model Village concept are those that would improve public utilities like water supply, sanitation, smokeless stoves, community kitchen gardens and community health. It has also promoted segregation of animals from houses and improved the foot paths through community efforts. A revolving fund has been established through external funding agencies which is managed by the community. This fund is used for helping the handicapped, old aged and for maintenance of drinking water supply systems.

The Model Village concept has helped in promoting general health through control of diseases and improvement of nutrition. Since it is a community effort there is a sense of responsibility and flexibility for socio-economic development. **The MV serves as a vehicle for multi-sectoral concerted efforts for community development.** It has the potential for replicating this effort not only in the rural settings but also in small urban communities.

Cottage Industries

The thirteen crafts such as weaving, carving, painting are a part of the rich cultural heritage of Bhutan. However these skills and practices are being threatened by mass produced lower value goods. In order to preserve traditional culture and skills, enhance employment and income generating opportunities for rural communities, this project has been introduced by the RGOB. Such a scheme has the potential for cutting across **rural urban continuum** sustenance of local communities, **poverty alleviation**, revival of waning traditional art and skills development. This project is very popular and attracts entrepreneurs.

3. Solid Waste Management

Solid waste management has been introduced recently for the Thimphu town. The garbage used to be collected in open trucks and dumped on hill slopes, ravines and ditches without any treatment. With the commencement of the project, door to door collection has been introduced, systematic collection has also been adopted in sparsely populated areas and the waste is transported to a landfill site in closed containers. **The bio degradable waste is segregated for composting with effective micro organism (EM technology).**

There has been a general control of pollution in clustered housing areas and the people have gradually accepted the need for a safe disposal of garbage. They even pay sweepers for collection of garbage from their homes.

The project is environmentally friendly as there are no adverse effects to the human habitation, as the disposal site is located away from settlements.

4. Essential Oil Industry

The extraction of lemon grass oil has served as facilitator for economic development in the eastern region and a study has revealed that almost **44% of rural income**, in the project area, was generated through this project (which far **outweighed** other **farm incomes**). The activity is environment friendly and the farmers are engaged when farm work is at its minimum. The project has helped to organise collection of raw materials, improve distillation methods and **marketing of products** in a co-ordinated manner. The new approach has stimulated the farmers to form small groups for the viability of small unit productions. The income generated has contributed not only for improvement of general living conditions but also housing improvement.

Priorities

The rate of urbanization is so rapid that urban development projects demand significant resources. However, cautious steps have been taken to list the entire programmes and to prioritize only those that are achievable by the year 2000. While this list will continue to be a guiding factor for successive five year plan preparations, the immediate objective is to prioritize only those activities which affects the quality of urban life. Hence the National Plan of Action has been formulated.

National Plan of Action

The National Plan of Action has been prepared to address the broader goals of human settlement development. The following issues have been identified for immediate action and some donors have already been approached. National Plan of Action will be:

- a) **Improve the urban management capability and consolidate and deliver goods and services cost effectively;**
- b) **Develop appropriate housing policy to address housing needs by adopting enabling approaches;**
- c) **Encourage private sector in managing urban services and to play increasing role in urban employment; and**
- d) **Strengthen the institutional capacity of local Government and urban management organizations.**

Commitments

The RGOB is fully committed to the improvement of human settlements. The focus of the forthcoming five year plan will be on urban management, housing policy, human resource development, private sector participation and spatial planning.

The international communities together with national governments will be urged to support developing countries to combat human settlements problems by providing adequate resources for infrastructure development, housing provision and human resource development.

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Part A: Introduction

1 The Process

Following preparatory work by a Task Force initiated by the Ministry of Communications to prepare base materials for the Istanbul Conference on Habitat II the Hon'ble Minister for Planning established a National Committee for the preparation of the final National Report and directed members that coordinating meetings would be the responsibility of the Ministry of Communications, under the chairmanship of Hon'ble Dy. Minister. Committee members placed particular emphasis on assessing **Priority Issues** and the formulation of a **National Plan of Action**.

With the formation of National Committee for the preparation of National Report to Habitat II City Summit the Ministry of Communication took a lead role in the consultation process. All the members of the committee played vital role in preparation of the report and have begun to incorporate the human settlement issues in their respective sector plans and programmes. The town committee, elected by different zones, for the capital city has also been consulted while prioritizing national plan of action. The report has been finalized after consulting even the Planning Commission.

It has also been agreed to consult the National Committee for advisory services even for the follow up action after the global conference. The RGOB is committed to multi-sectoral approach in addressing complex issues like human settlements. The process of consultation is even more active in the Dzongkhags where human settlement plans and programmes are prepared in consultation with the people and the implementation is done on their approval. The preparatory work for the Habitat II conference has revitalized the process which will help in promoting sustainable human settlements development.

2 The Participants

Members of the National Committee appointed by Planning Ministry were selected on the basis of their profession and their responsibilities related to the human settlement sector. Dasho Leki Dorji, Hon'ble Dy. Minister, Ministry of Communications chaired all the meetings. The report has been prepared for presentation to the conference with the active participation of the following members;

1. Dr Jigme Singye, Director, Division of Health
2. Mr Kunzang Wangdi, Director, Ministry of Trade and Industry
3. Mr Tshering Dorji, Director, Public Works Division
4. Mr Kinley Dorji, Deputy Secretary, PPD, Ministry of Agriculture
5. Mr Nob Tshering, Deputy Secretary, Ministry of Home Affairs
6. Mr Namgyel Lhendup, Under Secretary, Ministry of Planning
7. Ms Dechen Tsering, National Environment Secretariat
8. Mr Harka S. Tamang, Planning Officer, Ministry of Communications
9. Ms Yangden Penjor, Planning Officer, Division of Education
10. Ms Lhaden Pema, Thrompon, City Corporation, Thimphu
11. Mr Jochu Dorji, Thrompon, City Corporation, Phuntsholing
12. Mr Meghraj Adhikari, Sr. Town Planner, PWD
13. Mr Phuntsho Wangdi, Planning Officer, PWD
14. Mr Game Tshering, Representative of BCCI, Thimphu
15. Ms Lham Tshering, Representative of NWAB, Thimphu

Part B: Assessment and Priorities

1 The Broader Setting

To properly understand the relationship between human settlements and socio-economic trends and policies in Bhutan it is first necessary to understand the severe physical constraints which can both inhibit and dictate all development activities within the country.

Bhutan is a landlocked country, and one of the least developed in the Eastern Himalayas with an area of about 46,500 square kilometers. The Kingdom is bordered by China to the north and the Indian states of Sikkim, West Bengal, Assam and Arunachal Pradesh to the west, south and east respectively.

The country's terrain is among the most rugged in the world. The land rises from an altitude of less than 160 metres above sea level in the south to over 7000 metres in the north, and the variation in climate is correspondingly extreme. It is estimated that non forested zones account for around 30% of the total land area within which 20% is perpetual snow/glacier or rock/barren and 10% is agricultural, inclusive of orchards and settlements.

The scale and location of Human Settlements in Bhutan have accordingly been greatly influenced by this harsh terrain, deeply etched river valleys, steep slopes and small dispersed pockets of fertile agricultural land. These features have resulted in a wide dispersal of population which makes the provision of basic services both costly and physically difficult.

The settlement pattern influenced by historic trade routes with the neighbouring countries has been complemented by the construction of all weather vehicular roads in the last thirty years. The process of urbanization actually commenced with the construction of the first motorable road between Thimphu and Phuntsholing.

Currently Agricultural production accounts for over 40% of the Gross National Product, however this is predominantly unmechanised and subsistence. It is in the industrial sector, which already forms about 30% of GDP, that major growth over the next five years is anticipated with the construction of additional major hydro-power stations, a large cement plant, and possibly a few power based industries to process non-metallic minerals.

The Indian and Bhutanese economies are very closely linked, accounting for over 80% of trade annually, and continued export of hydro-power, cement, calcium carbide, ferro-silicon, agricultural products and timber products are expected to reinforce this linkage. Exports to third countries, particularly Bangladesh, have however also increased rapidly over the last decade steadily creating a more diversified marketplace.

Industrial development is one of the priority objectives of the seventh five year plan towards attainment of the national goal of economic self reliance through a regionally balanced development approach adopted by the RGOB. Industrial estates and sites are being planned and developed in order to distribute the benefit of industrialization on an equitable basis in the country.

These policies would create demands for increase in urban services and infrastructure with profound impact on quality and nature of human settlements influencing the flow of rural urban migration.

It is also planned to establish small scale industries where possible in other appropriate locations throughout the country to stabilize population concentrations in areas currently subject to out migration. With the improvement in communications, including increased airline capacity, it is anticipated that the number of trading partners will continue to increase in the region particularly for high value produce. In this context it is envisaged that the **SAARC Preferential Trading Arrangement (SAPTA)**, which commenced operation from 7th December 1995, will further enhance the regional trade.

It is against this background that an assessment of current settlement and shelter conditions can best be made.

2 Current Conditions

Background

All reference to urbanization in Bhutan must be made against the background that the process is barely thirty years old and that consequently urban centres are generally very small by international standards. This does not however mean that the problems are any simpler to address as growth pressures increase with the pace of socio-economic development in the country as a whole.

Most town dwellers are economic migrants who have first been drawn to the centres as government administrative employees and have been quickly augmented by a chain migration of supporting personnel to provide trading and personal services. The establishment of a range of educational and health facilities in the centres has further emphasized their central advantages for surrounding communities and attracted further inward movement by job seekers and entrepreneurs. The fact that more than 85% of Bhutan's population still live in the rural areas adds to the prospect of continued rapid urbanization over the coming years.

Thimphu, the capital city, provides a useful, if atypical, profile of present urbanization characteristics. The city is located in the Thimphu valley which stretches approximately 15 km from Dechencholing in the north to Babesa in the south and seldom exceeds 1 km in width. The present boundary covers 830 hectares of the central portion of the valley with the main built up area of the City concentrated to the south of Chubachu stream. The city is estimated to have a population of 30,000 to 35,000 (1995). It is an administrative town with 26.6% of residential land use and 13.6% for administration and other institutional use.

Thimphu is like all other towns, new, and the residents are predominantly migrants from rural areas from other parts of the Kingdom who have joined the civil service, commerce or armed forces. Since Thimphu is both the largest urban centre and the centre of Government, it attracts many people for employment. There is however no heavy industrial sector in the city, but an increasing number of small maintenance and service industries are establishing a significant private sector economy. The town has extensive physical development both in the core and peripheral areas and the remaining vacant pockets of land are gradually filling up thereby increasing demands for more intensive services. Although recent statistics are not available current growth may fall between 7% and 10% p.a. as opposed to a growth rate of 5% projected in 1987.

Socio-Economic Development

Unlike many other countries, where the establishment and growth of towns and cities has been influenced by their economic potential, the development of towns in Bhutan have mostly resulted from the establishment of administrative centres. With the progressive improvement of infrastructure facilities in these centres, most of the towns are expanding their roles from being predominantly administrative to incorporate some functions of a regional, sub-regional or local service centre. However, since the economic activities of these towns are still in their infancy, development is still largely dependent on public sector support.

Most towns have few or no major industrial, financial or trading activities, with the exception of a few such as Phuntsholing and Gomtu. Given the limited employment options existing outside the public sector there is a gradual increase in the rate of informal sector employment. This is generally in small trades, cottage industries like carpentry, weaving, tailoring, painting, carving, goldsmithing, food processing and personal services. There is also a tendency in some of the larger towns for the emergence, on a yet modest scale, of juvenile delinquency in small theft and drug consumption.

The problems of poverty and unemployment are still not very evident in most towns partly due to the family life style of the population and partly due to the small scale of most towns. Evidence, however, suggests that there are tendencies for the social structure to change with the continued trend towards 'modernization' and changing consumption patterns.

Almost all towns in Bhutan have established schools and hospitals and continuous upgradation of these facilities mean that a consistent high level of service is achieved. Hospitals and basic health units are well distributed all over the country and one of the most significant contributions has been the achievement of universal child immunization and reduction in infant mortality.

Infrastructure.

With a rapidly growing urban population the demand for infrastructure in many towns has been high. Potable water supply has recently been provided for the six major towns in Bhutan, implemented through external assistance, and this has had a major impact in improving the general health of the concerned population by reducing water borne diseases and increasing the quantity of water for domestic use. 90% of the effected population now have access to drinking water. As a first step, from January 1996 all consumers in Thimphu and Phuntsholing will pay service charges on the basis of actual consumption. These charges have been assessed taking into consideration operation and maintenance costs and will be billed monthly. Similar arrangements will be introduced in the other towns later, with Paro commencing in June 1996.

Apart from these towns however all other urban centres still rely on old supply systems, generally without proper treatment, which require constant and often major rehabilitation works.

Ongoing works on conventional sewerage systems are nearing completion in the core areas of the two major cities, Thimphu and Phuntsholing. These are expected to be commissioned during the first quarter of 1996 and have a major impact on the public health. Users will pay a service charge calculated as a 50% supplement on their monthly water supply bill while an additional charge will be levied for solid waste disposal. The remaining towns in the country continue to rely on septic tanks and pit latrines.

Apart from Thimphu, no town has organized solid waste collection or disposal systems. In the absence of such facilities wastes are disposed on an ad-hoc basis on uncontrolled sites in the vicinity of the towns. With growing populations and increased consumption patterns most Municipal Corporations are now being faced with the cost of initiating public disposal facilities.

Transport

Although most towns in the Kingdom are inter-connected by the existing 3,000 km. (approx.) of national road network, access is not really easy due to the very difficult terrain, some poor road conditions and the distances involved. While access between towns is difficult, access between the towns and their immediate hinterlands is even more difficult.

Today the only organized transport service connecting most of the towns are provided by government regulated private bus services. These can often prove inadequate and inconvenient in meeting the requirements of the urban population. The problem of easy and reliable access is one of the main issues hampering the economic prosperity of many towns.

As urban centres are fairly small the need for mass transportation has not become absolutely necessary except for Thimphu which has an increasing number of privately owned vehicles. In a deep valley like Thimphu this is a relatively large number and the National Environmental Commission has already begun to collect data on emissions. After appropriate studies the plan is to impose regulatory measures.

Despite the high rate of car ownership in Thimphu and a small city bus service the standard mode of travel continues to be walking for work, shopping, school and even to the hospitals. Because of the small size this is possible and will continue for some more years.

Environmental Management

Only Thimphu and Phuntsholing City Corporations have formal environmental management procedures. These Corporations have recently established very strict rules concerning the mandatory connection to the newly constructed piped sewerage system. It is proposed that this system will also take the waste water from the 60% of the households which are connected to sewer lines. The remaining households which will not have immediate connection will continue to use septic tanks. However, all the waste water generated by these households will now have to be connected to their septic tanks which will be emptied periodically by a vacuum tanker and the contents deposited into the main sewerage network..

Eight trucks loads of solid waste are collected in Thimphu per day (see Best Practices). This is either collected by sweepers calling from door to door in the core municipal area or from strategically positioned bins. The municipality collects from its fixed garbage bins 6 days a week and this is transported to the land fill site by closed trucks. The site is selected on the edge of a ravine and has been developed by raising a retaining wall to stop the garbage slipping down and by diverting a small stream to avoid water pollution. The garbage site is filled by excavating earth from the area and experimental composting of the graded garbage has recently begun. Once the site has been filled up, it will be landscaped as an amenity area/picnic spot and the Corporation is already making efforts to locate a new site for a continuation of the programme. Debris from construction sites is not taken to the land fill site but is used instead for filling up other construction sites, road construction and the reclamation of marshy land.

Local Government.

The cities of Thimphu and Phuentsholing have City Administrators called Thrompons. In addition Thimphu has just become an autonomous Corporation, supported by a town committee composed of eight elected members and four nominated, while Phuentsholing is scheduled to be designated an autonomous Corporation at a later date. There are no elected governments in the municipalities but these are managed by Dzongdags along with their other duties, in the capacity of being chairpersons of the Municipal Corporations.

An engineering cell in each district looks after the technical aspects of development in the entire district including urban activities. Almost all the districts face acute staff shortage particularly in dealing with the complexities of urban plan implementation, and this is exacerbated by the lack of adequate municipal and urban land legislation.

Concentrations of Government personnel and marketing facilities have occurred often on rugged mountainous locations selected centuries ago as ideal situations for Dzongs but which can now prove difficult and inadequate for the new urbanization pressures sweeping the country. A process of previously unknown urbanization has occurred and a shift to a monetary economy in the agrarian areas is occurring rapidly.

Most urban centres in Bhutan initially started to grow in a haphazard piecemeal manner, being undertaken in isolation of any comprehensive spatial planning strategy or evaluation of total buildable land available. This resulted in a lack of coordinated infrastructure programmes producing inadequate water and sanitation systems, complex narrow road networks and unplanned land usage.

By the early 1980's the legacy of this process could be observed in most towns and cities, large and small. Long distances for children to walk to schools, schools which may be located on or across main road junctions, bus stations located in such a manner that vehicles had to drive full length of busy commercial areas, large tracts of valuable serviceable central land held by institutions and individual government departments in an undeveloped state or used for bulk storage for timber, and open drains used for increasing quantities of urban sewage and solid waste disposal.

Following participation at the **Habitat Conference of 1976** in Vancouver the Royal Government decided to guide, strengthen and administer urban growth and development through an already established Central Town Planning Committee supported by a small technical department. However this organization was only able to address some of the physical symptoms of ad-hoc development demands through undertaking small surveys, subdivision and plot allocations, but was neither adequately staffed or skilled to take a comprehensive or strategic overview of the dynamics of urbanization itself. The changing form, location and size of the towns as a whole therefore progressed largely unguided.

In the following paragraphs are highlighted some of the socio-economic, conceptual, regulatory and institutional changes which have taken place in Bhutan since the first United Nations Conference on Human Settlements was held in Vancouver in 1976, and which relate directly to the issues of human settlements, in both urban and rural areas.

Socio-Economic Factors

- **Population**

The present population is estimated at six hundred thousand (600,000). It is apparent that urban settlements are growing rapidly, with the capital city, estimated at 14,500 in 1984, now believed to be in the region of 30,000 to 35,000, well over a doubling in ten years.

Highly successful Government programmes in child immunization and improved access to water supply and sanitation have resulted in a sharply falling death rate and improved health generally. The Ministry of Health and Education has, within the framework of Health for All by the year 2000 (HFA), a policy of promoting advocacy in the prevention of overcrowding, adequate ventilation, reduction of pollution, and the importance of proper drainage in the prevention of diseases like malaria, respiratory tract infections, eye infections and general epidemics.

Over 58% of the population now have access to piped water and 70% to latrines, while the systematic expansion of basic health services and primary health care facilities throughout the country has achieved dramatic results over the past five years. A National Health Survey conducted in 1994 indicates that infant mortality has fallen since 1984, from 142 per 1,000 births to 70 per 1,000 births in 1994, and similarly, under-five mortality has been reduced over the same period from 215 to 96.9 per 1,000 births.

With a crude birth rate estimated at 39.9 per 1,000 population, reduced mortality, as indicated above, and fertility remaining high at 5.6, the national population growth rate is estimated to have increased to 3.1% p.a. from a previous 1993 CSO estimate of 2.0% p.a. As observed to the **World Summit for Social Development**, at Copenhagen in March 1995, in the absence of any intervention such a growth rate would result in a doubling of Bhutan's population in the next 25 years. The RGOB plans to reduce the growth rate to 2.0% by the end of 8th Five Year Plan.

It is however clear that much of the inevitable future population growth will be concentrated in urban areas. Already rural-urban migration is accelerating, and most school leavers do not return permanently to the villages.

Educational infrastructure has expanded dramatically since the start of the first Five Year Plan in 1961. In 1959 western style education was in its infancy with only 11 primary schools in the entire country and a student population of 440. There are now over 77,000 students in 288 schools, (primary, community, junior high and high) representing a gross enrollment of approximately 72% and the Government is hopeful of reaching its goal of 90% gross enrollment by the year 2000.

While many school leavers do not return to villages, and there is a general reduction in farm labour, there is also an increase in farm production due to the introduction of improved seed varieties, double cropping, the use of pesticides and fertilizers and the training of farmers.

It is hoped that the continued expansion of agricultural/farm-friendly oriented primary school curricula, more vocational training opportunities for senior pupils and an expansion of the urban private sector employment base through appropriate incentives for the establishment of small business's will delay migration flows to the main cities. But, as acknowledged in the National report to the **International Conference on Population and Development** in Cairo 1994, the Royal Government recognizes that as development advances urbanization is inevitable.

- **Employment**

While the majority of the population is primarily located in the rural areas of Bhutan, and is dependent on employment in agricultural activities to meet basic needs, there are many constraints on the sector ever providing a significant role in meeting either current or future employment demands. Improvements in the provision of social services and infrastructure over the past twenty years continue to contribute to an improvement in the health and standard of living of the rural population. However, the introduction of improved technology in much of the area for the production of more profitable high yielding horticultural cash crops, will remain difficult due to the impact of the rugged terrain on access to markets, transport costs, and the dispersed pattern of settlement.

The future of the small farming unit is further threatened by the fragmentation of holdings. The prevailing Land Act and inheritance rights permit the division of property among heirs. This process, as in many other countries, ultimately leads to a plethora of small unviable plots and an accelerated migration of younger people to seek non-farm urban employment in the nearest district town or more probably in this case, Thimphu. In addition, as observed above, there is a growing trend for the young school leaver to disdain the prospect of farm labour and prefers to take a chance of obtaining more, in their eyes 'appropriate' employment in the larger towns or cities, even at the risk of being unemployed. It is consequently unlikely that even with a marginal demand for seasonal employment in agriculture and a growing population needing jobs, that agriculture, with its emphasis on unskilled labour will absorb a significant portion of the labour market.

Participants in the **United Nations Conference on Environment and Development (UNCED)** in Rio in 1992 recognized this characteristic and in **Agenda 21** recommended that in order to relieve pressure on the larger urban cities in a predominantly agrarian society, Quote "*policies and strategies should be implemented towards the development of intermediate cities that create employment opportunities for unemployed labour in the rural areas and support rural-based economic activities, although sound urban management is essential to ensure that urban sprawl does not expand resource degradation over an even wider land area...*" It was also recommended that emphasis should be placed on promoting small-scale economic activities, particularly food processing, to stimulate local income generation and to produce intermediate goods and services for the adjacent communities.

This is a concept which the Royal Government is seriously considering. Previous experience exists through the Planning Commission who, in 1987, recognizing the need to develop an integrated approach to the delivery of community facilities and services to rural communities, initiated a Rural Service Centres Study with a view to constructing a number of pilot centres in strategic locations. Unfortunately some of the proposed pilot locations overlapped existing settlements already classified as towns by the then Department of Works and Housing. It may be a better future strategy to incorporate all functions in selected existing Urban Centres thereby capitalizing on already existing concentrations of investment.

In view of the limitations for growth in employment existing in the agriculture sector, except for agro-based industries, the Royal Government is mainly looking to the development of Industrial Estates as a key policy in promoting industrial activities which will generate both directly and indirectly job opportunities for an expanding labour force. With the commissioning of the Chukha hydropower project in 1987 the prospects for industrial expansion increased, as exhibited with the export of electricity and power intensive products such as calcium carbide and ferro-alloys etc.

A policy of balanced regional development to direct investment into less developed areas of the country forms another important component in the structure of future employment patterns. Of particular significance is the policy to locate power plants to promote industrial development in the more interior parts of the country. This coupled with a forward looking Human Settlements Policy should greatly enhance the economic and social stability of the rural areas. To capitalize on the latent value of the emerging labour force there are many existing vocational training institutions in Bhutan capable of organizing necessary training courses.

Another trend that has emerged in recent years is that owners of small unproductive land holdings who survive on providing labour contributions to larger farm holders have been offered the chance to join a national workforce to work for road construction, projects and construction sites. This is an attractive proposition for some villagers as wages are higher, accommodation is free and get easy access to children's education though work sites are remote and difficult.

Informal employment has also begun to play an important role in the urban settlements. These mostly occur in commerce with market vendors, retired civil servants and ex army personnel depending on small trades, skilled and partially skilled labour and artisans engaged in personal services or cottage industry such as weaving, tailoring, painting, handicrafts, etc. Villagers with specific expertise also travel to the urban centres to perform religious ceremonies, collect alms, provide astrological forecasts etc.

A most important sector of the economically active population in Bhutan is women. Women already constitute 49.5% of the total population and, unlike many other countries, enjoy equal rights in law. Like men they play important role both in private and public sectors and own businesses. Practices related to inheritance, referred to earlier above, makes no differentiation between sexes although in some communities daughters may inherit all the family possessions.

The Royal Government's policy is to encourage in every way possible the rapid expansion of the private sector, including the privatization of appropriate existing public enterprises. This would act as a general catalyst for economic growth as well as, more specifically, meeting rapidly increasing urban employment demands.

Institutional Factors

Bhutan is a kingdom. His Majesty the King, Jigme Singye Wangchuck, is the Head of State and also Head of Government. A cabinet comprising His Majesty's representatives, ministers, senior civil servants and Royal Advisory Councillors (elected by NAB) assist in governing the country.

The National Assembly has 150 members; 105 are the elected representatives of the people, 10 are representatives of the Dratshang and 35 are nominated representatives of the Government, including the 20 Dzongdags. The people's representatives are directly elected by the people of their respective constituencies. The representatives of the Clergy are elected by the Zhung Dratshang and the concerned Rabdeys. The Representatives of the Government are nominated by His Majesty the King from among senior civil servants. All the members serve for a term of three years except representatives from Dratshang who serve only for one year.

Since the inception of decentralization policy in 1981, the process of decision making at the Dzongkhags and Gewogs has enhanced the level of people's participation in development activities. In order to further enhance and build on the capability of the people at the local level, the Dzongkhag Yargye Tshogchungs in all the 20 Districts were instituted in 1981 and the Gewog Yargye Tshogchungs were instituted in 1991 in all 196 Blocks.

Bhutan is divided into 20 Dzongkhags with a Dzongda, who is responsible for the Civil Administration. The larger Dzongkhags are subdivided into Dungkhags. The Dzongkhags, are further subdivided into 196 Gewogs. The administration of individual Gewogs is undertaken by community leaders under the guidance of Gup elected by the community. The role of Gup includes co-ordination Gewog Development Plans, Chairman of GYT, collection of taxes in the rural areas, mobilization of resources for community services, settlement of local disputes and involvement in village voluntary works for health, maintenance of water supply and irrigation channels.

A key intervention for the redistribution of social services in relation to rural population patterns was the programme of Rural Service Centres referred to earlier under 'Employment'. This approach has been complemented by parallel activities being undertaken in other locations under the title of satellite towns and a general discussion on the viability of having a growth centre policy. As mentioned earlier it is possible that the objective of improving service facilities and employment opportunities may best be combined with a policy of developing intermediate sized cities in strategic locations. There is every possibility that rural service functions strategically located may provide a first linkage between the village and the intermediate town.

Building on the small Central Town Planning Committee referred to under 'Background' above, which was strengthened following the Vancouver Habitat Conference in 1976, and following recommendations of a UNDP supported project entitled 'Urban Development and Housing Technology' initiated in 1983, the Royal Government converted the CTPC in 1984 into the **National Urban Development Corporation** responsible for both planning and execution of all Urban Development programmes and maintenance works in the Kingdom. For the following five years, until 1989 when the NUDC was abolished, this autonomous government agency was responsible for the supervision of all major construction works in the country and established a comprehensive urban planning service together with the preparation of urban plans and regulations for the two cities and most major towns in the Kingdom.

After 1989 the functions of the NUDC were first merged with the Ministry of Social Services and subsequently with the Ministry of Communications. Presently the Urban Development Plans and Policies are prepared by the Policy and Planning Division of the MOC in collaboration with the Urban Planning Unit of the Public Works Division.

While the District Administration is well structured, urban development and management is a new concept in Bhutan and requires further strengthening. The Dzongdas are the chairpersons of the Municipal Corporations. Urban management falls under the direction of the Ministry of Communications whereas implementation is carried out by the Dzongdas for all Municipal Corporations and the Thrompons for the two major towns.

The Thimphu City Corporation is given autonomy for implementation of development programmes since February 1995. Both Thimphu and Phuntsholing towns come under the administrative control of Thrompons and fall under the direction of the Ministry of Communications and Town Committees. It is intended that Phuntsholing will soon have similar autonomous status conferred on it as in Thimphu. All other towns have municipal corporations which are not elected bodies but a part of the District Administration established for urban management. These municipal Corporations are largely administered through the active role played by informal town committees under the chairmanship of the Dzongdas.

Regulatory Factors

Bhutan's legal system is based on the Thrimshung Chenmo which is the basic law document and has been elaborated in the following subsidiary books of law: Inheritance, Land law, Livestock, Pasture, Marriage, Police, Prisoners, Citizenship, National Security Act and the Companies Act. In additions there are a number of written laws, rules, notifications, orders as well as values and traditions.

In the last 20 years there are many changes in the regulatory process of the human settlements sector. The Basic Law of Bhutan was promulgated in 1957. The present land act is basically derived from 1957 law and has been in effect since December 1979. This is largely applicable to rural settlements and there are many

Since then, informal housing has increased and the shelter concept of Government, on the command of His Majesty the King, has shifted to the provision of affordable housing for those falling into the lowest bracket. A policy committee has recently been established in the Planning Commission to address these issues.

Building on the country wide experience gained from the two UNDP supported projects on Urban Planning, Urban Development and Housing Technology within the NUDC, in 1986, and UNDP in consultation with the Royal Government, drafted a regional programme entitled '**Inter-country cooperation on the Planning and Development of Human Settlements in the mountainous terrain of the South Asian Sub-region, especially of Bhutan, Nepal and India**'. This proposal was supported by the Royal Government who expressed interest and willingness to act as the host country to accommodate the project core team. Inter-country agreement to field a fact finding mission was however not forthcoming in time for inclusion in the UNDP 4th Cycle Regional Programme for the Asia and Pacific Region and consequently the proposal remains in abeyance.

In the terminal report prepared on the conclusion of the UNDP/UNCHS **Urban Planning Project (BHU/84/024)** in 1987 a strong recommendation was made for the adoption of a National Policy on Human Settlements as a conceptual framework for urban development and as endorsed by the member states participating at the Vancouver Habitat Conference.

While the scope of the Urban Planning Project had been strictly limited to establishing an institutional capability for the planning of specific urban centres, it had become clear that the majority of related development decisions, in rural as well as urban areas, were conducted on a single issue basis where the distribution, growth and movement of population, and the location of industries, social services and transport networks were largely viewed as individual sectoral decisions, un-controlled and un-coordinated.

Consequently it was recommended that Urban Planning should be seen only as one element in a broader approach to the development of Human Settlements nationally, where all centres, whether large towns or small rural service cores should be seen in the context of a spatially planned functional hierarchy as a framework for development investment. As highlighted in the **Declaration of Principles** adopted by all member states participating at the UN Conference on Human Settlements in Vancouver:

"All countries should establish as a matter of urgency a National Policy on Human Settlements, embodying the distribution of population, and related economic and social activities over the national territory... A Human Settlement Policy must seek harmonious integration or co-ordination of a wide variety of components including, for example, population growth and distribution, employment, shelter, land use, infrastructure and services."

This important concept of spatial planning as a key development tool in addressing inequities and focusing investment is once more the centre of active debate in Bhutan and Government is paying serious consideration to the issue.

Objective

At the **United Nations Conference on Environment and Development (UNCED)** in Rio in 1992 (The Earth Summit) a comprehensive Human Settlements Objective was defined, in the programme of action, *"to improve the social, economic and environmental quality of human settlements and the living and working environments of all people, in particular the urban and rural poor"* (Article 7 of Agenda 21). Eight programme areas were agreed as a basis for each country to define its national settlement strategies but actual programme priorities would naturally differ between countries depending on national plans and objectives. The efforts made by the Royal Government in addressing the issues to date are highlighted below by programme area. It should be noted that in many instances positive action had already been initiated in Bhutan prior to the 'Earth Summit'.

Providing Adequate Shelter for All

The Royal Government of Bhutan does not yet have a comprehensive housing policy for the nation but efforts have, for some years, been made to seriously address both urban and rural shelter issues even before the adoption of Agenda 21. In the absence of an organization clearly focusing on housing issues the subject has been handled by different departments and agencies at different points of time. For instance, the Forestry Services Division under the Ministry of Agriculture, as a government policy, supplies house construction timber at a subsidized rate. However this only applies to the rural communities and not to the urban centres.

The first major indicator for the need of urban housing became clear when the UNDP assisted Urban Planning Project No. BHU/80/024 estimated the need for housing policy in the Urban Structure Plan for Thimphu. A housing policy committee was then set up within the Government which introduced a radical reform to the existing policy of providing housing for all government employees. The recommendation, which was subsequently adopted, proposed merging the housing allowances into the salary structure of civil servants thereby passing over the provision of shelter to private market forces and reducing the costly commitment on Government of physically providing and maintaining houses for the civil servants.

At the same time UNCHS(Habitat) through the Urban Development and Housing Technology Project (BHU/80/002) provided the committee, in 1987, with the services of an expert on housing finance and policy to assist its deliberations. The Royal Government then approached the ADB and UNCDF for detailed technical and financial assistance to plan, design and implement low and middle income housing schemes, but felt unable to adopt the proposals offered at that time.

Following directly on from both the Global Strategy for Shelter adopted by the General Assembly in 1988 and Agenda 21 of 1992, the Royal Government has issued a directive through Guidelines for the Preparation of the Eighth Five Year Plan (1997-2002) for the incorporation of a programme to provide low cost housing in urban areas geared for those falling in the lowest income bracket.

Improving Human Settlement Management

Since the first attempts to organize urban development in Bhutan, following the 1976 Vancouver Conference, continuous efforts have been made to enhance management capability in the human settlement sector.

Up to the present however, all towns, with the exception of Thimphu & Phuentsholing Cities, are administered as municipal corporations under the chairmanship of Dzongdags. With the first steps towards managerial autonomy being vested in Thimphu early in 1995 a new era for urban management has been heralded with ramifications for both decentralization policy and an increasing role for the private sector.

Any new legal framework which seeks to establish autonomous status for the two cities and in varying degrees for all the municipalities will need to address the devolution of financial powers and the responsibilities for designing and controlling land uses and setting physical development standards. A modern land administration system will in turn not only need to embrace forms of tenure, land ceilings, transfers, subdivisions, and dispute litigation but would need to tie these provisions to a cadastral survey and registration process commensurate with the levels of accuracy expected for urban land holdings.

Urban finance is in urgent need of review and opportunities for new sources of income, including commercial ventures, would need to be explored in conjunction with the achievement of improved collection performance, accounting efficiency and cost-effective operations and maintenance systems.

Taking account of the interlocking nature of these facets of urban management, the Royal Government has initiated a first step in some areas, in seeking specialist guidance on the appropriate legal, financial and administrative means for introducing sustainable autonomous status for urban authorities.

Promoting Sustainable Land-Use Planning & Management

To provide a sound analytical basis for decision making on sustainable development proposals, considerable effort has already been made to improve the land data base in Bhutan. By 1989 cadastral mapping and related land-ownership records were complete for around 35% of the land area and the remainder, for all applicable areas of land, are programmed for completion by 1998. Topographic mapping at 1:50,000 scale is available for the entire country, published in 1964 and based on photography and ground control work undertaken between 1982 and 1987 leading to the production of an improved quality 1:30,000 general series in 1988, with 1:10,000 scale topographic mapping being prepared for selected urban centres.

Thematic maps covering education and health services, historic places, communications and tourism, have been produced to a high standard of cartography and printing. Satellite imagery interpretation has also been used to produce a 1:100,000 coloured mosaic of the entire country and for preliminary land-use analysis.

A most important recent element in the provision of improved mapping has been the assistance of DANIDA since 1990 in a **Land Use Planning Project** attached to the Ministry of Agriculture. The analysis from the application of the GIS facility in assessing the land resources for different uses will greatly enhance opportunities to analyze not only agricultural potential but human settlement spatial patterns in relation to rural land uses and infrastructure networks. Large scale mapping for the detailed analysis and planning of individual Urban Centres however does not yet exist.

Promoting the Integrated Provision of Environmental Infrastructure: Water, Sanitation, Drainage and Solid Waste Management.

The need to have access to a clean potable water supply both in rural and urban centres has been prioritized since the Second Five Year Plan and continuous efforts have been made to upgrade supplies since then. The rural water supply provided with UNICEF assistance covers 58% of the population and a target has been fixed to cover 80% by the end of Eighth Five Year Plan. In the urban sector a modern system has been installed for the six largest towns in Bhutan with loans/grants from ADB and DANIDA. Seven other towns have already been prioritized for a second phase of improved drinking water supply, for which external assistance has been sought. The Government of India is assisting to implement infrastructure provision related to the relocation of Punakha commercial centre.

With the introduction of increased water supplies to the urban centres drainage has become a major area of concern and a master plan has already been prepared for the two larger towns of Thimphu and Phuentsholing. All the proposals, for financing and construction of these drainage systems are guided by this master plan. In the health sector there is a growing concern regarding drainage systems as malaria cases are being reported from almost 60% of its Dzongkhags. Malaria control programmes are already being co-ordinated at the local level through awareness campaigns, which is inadequate. Therefore, there is a need to address the problem through multi sectoral approach.

Intensive measures through the health sector programme and through public health engineering plans and programmes have been adopted for general upgrading of sanitation facilities. A major and recent achievement is the ongoing implementation of piped sewerage projects for the larger towns of Thimphu and Phuentsholing which are planned to be completed by mid 1996. With the introduction of the **Water Supply and Sanitation Rules 1995** it has been made mandatory to provide septic tanks and soak pits where the pipelines do not serve and for all other towns.

A recent coordinating initiative has been established between the Ministry of Health and Education and the Ministry of Communications in the setting up of multi-sectoral coordinating approach to the combined sectors of health and sanitation.

1.3. History of the Best Practice and Status as of December 1994

The Model Village was initiated in Bumthang district as one of the important and main components of the Primary Health Care (PHC) intensification programme. Initially, the district started with ten Model Villages following the decision of the PHC Intensification Workshop held in April 1986, which was attended by the community leaders and women, religious and traditional practitioners, Village Health Workers, Health workers and sectoral heads from the district administration.

Following the recommendations of the regular PHC review meetings, the number of Model Villages was increased to 22 over the years as of mid-1995.

2. IMPACT ASSESSMENT

- 2.1. Reduction in the morbidities and mortalities of the health problems related to poor personal and environmental sanitation as a result of improved personal and sanitary behaviours and practices of the people.
- 2.2. Improvement in the nutritional status of the children due to availability and consumption of mixed vegetables through promotion of kitchen garden and improved dietary habits.
- 2.3. Existing institutions and mechanisms has been strengthened by enhancing the vital role of local committees. External agencies play only a facilitation role.

3. SUSTAINABILITY AND POTENTIAL FOR BROADER APPLICATION

The Model Village has the dynamism and flexibility for continued development over time with progress in socioeconomic development. Further, because of local ownership and participation, the long-term sustenance is ensured.

The new and simple technologies are adapted to the local needs and conditions. Such technologies include squatting slab for deep pit latrine, rural drinking water supply systems, smokeless stove, etc., which are used based on the acceptance and affordability of the local community. Such newer technologies are also helping in promotion of environment-friendly customs while improving the health of the community.

One of the major achievements of the MV programme is the positive changes in the behaviours and practices through increased public awareness and perceptions about health in particular, and community development in general.

Because the MV programme was successful in Bumthang district, it was later tried in Chhukha, Haa, Trongsa and Wangdue districts. Having recognized the role that the MV can play in mobilizing community participation for the promotion of health and other community development activities, the Government also approved the replication of this concept and approach in other districts. However, the actual replication shall take place based on the adaptability to the local situations and acceptability.

4. SUMMARY

4.1. Social acceptance and consensus:

The needs and the problems are identified by the community themselves. The solutions and technologies are based on the local priorities, conditions and resources. By consensus, decisions are taken. Through this approach, the community ownership is ensured which influences their participation and sustenance.

4.2. Proven Practice:

- 4.2.1. Construction and use of latrine.
- 4.2.2. Digging and use of refuse disposal pits.
- 4.2.3. Separation of animal sheds from the living house.
- 4.2.4. Regular cleaning of the village surroundings.
- 4.2.5. Control of stray animals in the village.
- 4.2.6. Soling and stepping stones provision for village footpaths.
- 4.2.7. Practice of personal hygiene, for example, tooth-brushing.
- 4.2.8. Promotion of kitchen garden and growing a variety of vegetables.
- 4.2.9. Plantation of trees and protection of community forests.
- 4.2.10 Regular cleanliness and maintenance of drinking water supplies through organized support systems.

4.3. Sustainability and Potential for broader application:

The MV is self-contained and environment-friendly as the locally available materials are used meeting the acceptability and affordability of the community. Its dynamism and flexibility has created an environment that promotes continuous development and use of appropriate technologies over time.

The MV is one of the examples of an activity that contributes towards the development of habitat in harmony with the environment, socio-culture and technological advancements. It will also contribute in bringing a balance between the Habitat I and Habitat II thereby minimizing the related problems in the future. However, additional developments such as lighting facilities, road and telecommunications, marketing and social services, is equally important components to ensure equitable developments between the urban and rural areas.

The MV empowers the people with the responsibilities for planning, decisions and actions which is a motivating factor for their active participation.

4.3.3. Promotion of Partnerships:

The MV serves as a vehicle for multi-sectoral concerted efforts for community development. Through this vehicle, active and positive interactions are promoted between the community and development agents in that decision and actions affecting the community.

The community and development agents work as partners in equal terms, the later acting as facilitators and helping with technical know-how and other needed resources. The community themselves take the leading role in the decisions and implementations of the development activities.

5. CONFRONTING THE MAJOR ISSUES OF HABITAT II

In order to address the rural-urban population shifts and the population related problems in the urban areas, it is necessary to encourage a balanced development in terms of essential basic services such as safe drinking water, electricity, roads, telecommunication, marketing facilities and social services to ensure equity.

The Model Village is one such strategy which could be used as an entry point to ensure village based developments. While checking rural-urban shifts it also fosters a development which is environment friendly and promote socio-economic and cultural development.

BEST PRACTICE

2. IDENTIFICATION TAG

- Title : Cottage Industry Development Project, Ministry of Trade and Industry
- Location : Thimphu, Bhutan
- Key Organizations

Concerned Government

Agency : Entrepreneurship Promotion Centre. Ministry of Trade and Industry.

Executing Agency : IDEAS Aid International, with project management and accountability to the designated until (EPC) of the Ministry of Trade and Industry.

Funding Agency : United Nation Development Program

• **Contact addresses**

1. Mr. Kinley D. Dorji
National Project Director
Entrepreneur ship Promotion Centre
Ministry of Trade & Industry
Thimphu Bhutan
Tel(int+975)-2-22406
Fax(int+975)-2-23507

2. Mr. Sushil Halder
Project Coordinator
Cottage Industry Development Project
Ministry of Trade and Industry
Thimphu Bhutan
Tel(int+975)-2-24469
Fax(int+975)-2-24470

- **Key dates in the history of Cottage Industry Development Project**

August 1994	:The CIDP project commenced.
September 1994	:CIDP show room was set up.
January 1995	:Tailoring training started.
November 1995	:Production of textile using broad loom began.

- **Reasons and actions leading to the establishment of CIDP**

Cottage industries and crafts in Bhutan represent an old tradition of skilled artisans, social relationships, religious customs, cultural activities and a source of barter trade. Traditionally several of the crafts were associated with monastic and religious life and were carried out by men and women for their own domestic use or for exchange either within their own community or for trade in other parts of Bhutan, with Tibet or India.

Though this sector has the most skilled work force, today imports and other development priorities have taken away the importance of cottage industries as a source of employment and income. The international market is seen as fiercely competitive and unattainable. In local market people buy cheap imports and complain about the cost of traditional handmade items.

Tourist who pass through many countries to come to Bhutan, compare product variety, quality and price and often purchase very little except something to remind them of their visit. Buyers coming to Bhutan looking for exotic, different, quality items, leave disappointed.

Despite the above scenario, it was felt that it was still not too late. The master crafts people are still alive and capable, raw materials are available within the country and the demand for quality ethnic products is still available.

With this factors the Cottage Industries Development Project (CIDP) under the Ministry of Trade and Industry was established in August 1994 with an objective to work with private and public sector programmes involved in Cottage industries, particularly the thirteen crafts (Zorig Chusum) activities and to develop marketable products and a sustainable marketing program. While the project is being implemented by IDEAS, it is the responsibility of Entrepreneurship Promotion Centre, Ministry of Trade and Industry.

2. Impact Assessment

Since its operation, the project has made significant progress in two areas. First being the success in getting the showroom set up and running. CIDP has chosen to work back from the market to the producers. This enables in modifying the products to suit the customers while the core traditional aspect is maintained. The showroom provides an outlet to the producers, who are thus encouraged to produce seeing the potential. The showroom accepts quality products which also create an awareness among producers of the quality aspects in producing.

Secondly an excellent response to the tailoring training has enabled the CIDP to produce qualified tailors. This would in a long run substitute foreign labourers while the national goal of sustainability will be achieved. Besides this the programme promotes preservation of tradition, it is environment friendly, it creates jobs without gender biasness and it is also hoped to keep people back in the rural areas.

3. Sustainability and potential for broader application

• Changes in sectoral policies and strategies

The long term objective of the project is to be self sustaining and not dependent on open-ended funding. Therefore the objective of the project is to develop marketable products and a sustainable marketing program through:

- A self-sustaining program that will develop the management and technical capabilities;
- Establishing on-going market linkages between Bhutan producers and regional and international markets through a market support program;
- A product development program that addresses the needs of each sector in the cottage industry and handicrafts in order to create greater market relevance for these product areas;
- Establishing a point of reference for buyers coming into the country looking for producers able to develop products for international market;
- Display of quality product in the local market will provide a stimulus to producers and retailers to develop high quality and professional presentation of Bhutanese products.

• Changes in institutional arrangements

The project is the responsibility of Entrepreneurship Promotion Centre (EPC), a unit in the Ministry of Trade and industry but is being implemented by a sub contracting agency. This was an entirely new institutional arrangement.

4. Narrative summary

• Social acceptance and consensus/proven practice

The Ministry of Trade and Industry's intervention through the CIDP is to create a sound market base for products which would enthuse people from all walks of life to practice any crafts they desired.

The recent tailoring training has proven that people are willing to engage in any form of crafts as long as monetary gains exist. In this manner the CIDP will slowly offer opportunities in other crafts which would gradually sweep aside some of the perceived social restrictions.

• Promotion of partnerships

The Cottage Industries Development Project is promoting some sort of partnership between the promotional institutions and the CIDP trainees as well as other entrepreneurs like the weavers, potters and the painters. The trained tailors are now not only producing for the showroom but also for other institutions like the Handicrafts Development Corporation and private handicraft shops. Entrepreneurs are now more aware of the needs of each sector in the cottage industry and handicrafts and are producing according to the market relevance for these product areas.

BEST PRACTICES

3. TITLE AND LOCATION:

Solid waste management in Thimphu, Bhutan.

Names:

1. Lhadon Pema
Thrompon,
Thimphu City Corporation,
Post box-215, Thimphu : Bhutan.
2. Ichha Ram Dulal
City Engineer,
Thimphu City Corporation,
Post Box-215, Thimphu : Bhutan.

Dates:

October 1993 - began operating solid waste landfill
Summer 1995 - began door - to - door waste collection in city core
Winter 1995 - began construction of composting plant - all operations are running smoothly.

Description:

The components of Thimphu City Corporation's (TCC) municipal solid waste management programme are particularly successful and might be considered to be 'best practice' for MSW management in the Himalayan region.

The first operation is a **controlled landfill**, where all MSW collected from the city is covered by soil and compacted each day. This practice has virtually eliminated blowing litter and leachate discharge to local streams, which was a chronic problem under the previous practice of tipping all waste into a ravine. The second successful practice is daily door-to-door **collection of waste** in the most densely populated central area of Thimphu. TCC sweepers collect Nu.5.00 per month from each housing unit in the area for the service, and also collect scrap which supplements their wages. This practice has reduced open dumping in the area and relieved TCC of the expense of repairing and replacing frequently damaged public dustbins.

The third component is an experimental **high altitude composting** of solid waste presently being implemented through two distinct activities.

Firstly, a "low tech" static pile windrow composting plant is being constructed at the landfill site. The operation, which has a capacity of about 100 cubic metres of intake municipal solid waste per week, involves:

1. manual segregation of non-degradable material from the intake waste,
2. composting in roofed windrow sheds, where the piles are turned by a payloader(for aeration) and moisture and nutrients are monitored and controlled,
3. curing, and,
4. final screening and removal of residuals.

Secondly, a pilot-scale home composting promotion project is in the planning stage, scheduled to begin in Spring 1996. The project includes:

1. free distribution of instruction pamphlets and inexpensive bamboo mat composting bins to interested Thimphu residents, and,
2. having trained "extension" personnel from the City Corporation and the National Environment Commission's staff available to give technical advice if requested.

Impact Assessment

Approximately 200 cubic metres of MSW is collected and disposed every week with minimum environmental impact (no litter blow, approx. 5 l/m leachate of moderate BOD, nitrate, etc.) and there is no adverse effect to any human habitation as the landfill site located away from the settlements.

Open dumping of garbage in the core area of the city is drastically reduced. This practice has reduced the city expenditure as the public dustbins have been removed from the clustered areas.

Sustainability and potential for broader application

Changes in institutional arrangements and legislation:

The change in institutional set up like autonomous status of the Corporation with an elected Town Committee to facilitate implementation of programmes and enforce regulation and the preparation of a Municipal Act has encouraged community participation. These made it possible for TCC to test such trial schemes on collection of waste from door - to - door with a minimum effort.

Changes in public awareness and perceptions:

In Bhutan people are habitually rural based. Their lack of urban instincts and civic sense led to minimum public cooperation with TCC's waste management programme. This is one of the factors which has limited its effectiveness. However, some introduction of publicity campaigns like market festival and exhibition, education of the masses through media on wastage of water, sanitation and newly introduced sewerage system and advisory services on water metering and the daily presence of TCC's sweepers at the people's door is decreasing the amount of open dumping and littering in city. Another effective means of communication has been the use of schools and the students as a means to communicate health and sanitation messages.

Narrative Summary

Social acceptance:

There is an increased social acceptance for the introduction of door - to - door collection of garbage. The introduction of the scheme has not inconvenienced the residents. The sweepers of the TCC make daily rounds for 6 days of the week. In fact people in the clustered housing colonies of the city have welcomed the service for meagre payment of Nu. 5 per month as the services are delivered with assurance. The collected waste is taken to the landfill site which is located in a remote area, 8 to 9 kms away from the city. The landfill site does not have any adverse effect to the people or environment.

Proven Practice:

Landfilling and manual garbage collection involve relatively simple activities and basic technology but the composting component is experimental in view of the high altitude of the landfill site. Effective Micro Organism use in composting is being introduced on trial basis. If the practice is proven successful, it will go a long way in terms of sustainability of the practice of the philosophy of natural farming concept.

Sustainability and broader application:

After the initial capital investment for the construction of the landfill and procurement of a payloader, the operation now incurs fairly minimal operating costs. Likewise with a door-to-door collection, the sweepers do their rounds on foot carrying a small bucket from which they transfer the collected garbage to large dumpsters. If the composting component proves productive the compost will be fully utilized by the City Corporation and the Forestry Services Division for nurseries.

BEST PRACTICES

4. IDENTIFICATION TAG

- a. Development of Essential Oils Industry in Bhutan
- b. Kunzang Wangdi, Director, Ministry of Trade & Industry, Sherab Gyeltshen, Head of Research, Extension & Irrigation, Ministry of Agriculture.
- c. 17 June 1993 - Signing of the Project Document between the Royal Government of Bhutan and the United Nations Development Programme.

22 November 1993 - Signing of the MoU with the Buyers.

1 June 1995 - Distribution of first 12 new portable stainless steel distillation units to the people.

Although the distillation of Lemon Grass oil was an on-going activity for more than a decade, utilization of the resources, distillation practices & technology, oil yield & quality and marketing was still far behind international standards. In an effort to improve these, a decision was made to involve various organization through multi-lateral fundings. Lead by the Ministry of Trade & Industry, development of this sub-sector also involved Ministry of Agriculture and the Food & Agricultural Organization marking the first project in the country working on the integrated approach model.

The project firstly initiated a socio-economic study to determine the viability of the venture to pursue future development of this industry. The study revealed that almost 44% of rural income in the project area was generated through the distillation of Lemon Grass oil which far outweighed other farm incomes from livestock, farming, horticulture production and off-farm labour activities. From both social and economic aspects, the distillation of Lemon Grass oil were the best in comparison to other rural activities.

Comparative distillation trials were also conducted between the traditional mild steel unit and the modified stainless steel unit with respect to yield, physico-chemical quality and economic and financial appraisals. The inference derived from the trials favoured the modified unit which exhibited a balance output in all the parameters. Therefore 20 such units were fabricated and distributed to the people in 1995.

2. Impact Assessment

Production of oil for Lemon Grass increased from 1.8MT in 1994 to 4.5 in 1995.

Hard currency earnings increased from US\$ 28,800.00 in 1994 to US\$ 69,000.00 in 1995.

Increase in price of oil from Nu. 135.00 per kg of oil from traditional mild steel unit to Nu. 500.00 per kg of oil with the new stainless steel units.

Increase in average rural income for distillers from Nu. 17,955.00 using traditional unit to Nu. 66,500.00 using the introduced units.

12 households comprising of 80 individuals (children and adults) benefited from the new programme.

3. Sustainability and potential for broader application.

Although no major legislation, laws and by-laws govern the harvesting of Lemon Grass it has been noted that with the increasing demand for the new technology in the years to come proper demarcation of land for individual distillers will have to be formulated to avoid social conflicts.

Since majority of the people in the project area are poor the primary objective of the project is to support the rural dwellers and farmers to gain an additional opportunity to earn cash incomes through an organized cultivation and distillation of essential oils. The expectations in the very near future are that a new rural based agro-industry will emerge in the region.

The overall development objective of the project is also very much in line with the priority objectives of Bhutan's Seventh Five Year Plan for a sustainable development, creating a regionally balanced growth, boosting hard currency earning and above all endeavoring to uplift rural standards of living through direct support and assistance provided by the Royal Government. It is expected that encouraging participation of the people in economic activities will generate additional employment and stable income for themselves.

The project which serves as a facilitator for economic development in the region has also enhanced individual management in the operation and maintenance of distillation units, improved distillation techniques and improved yield and quality of oil. Distillery operators are also able to make decisions in case of any form of trouble-shooting during distillation.

The use of the new technology has also been generally accepted by the general public. Signs of gradual movement from traditional units to the improved technology and the demand clearly indicates public awareness and perception.

- c. Increased accessibility through an enabling process, to adequate shelter for those falling in the lowest income bracket.

Activities:

Through a process of consultation to facilitate capacity-building, bring together national and city authorities, the private sector, community representatives, and other stakeholders to discuss specific urban and shelter problems within the five substantive themes of municipal finance and administration, urban infrastructure management, urban land management, urban environmental management and urban poverty alleviation, and to propose reasoned solutions that may be interpreted into a concrete action plan for policy and programmes. Follow up will include facilitating the implementation of action plans and the mobilization of resources required for that.

Initiate an appropriate programme of aerial photography of the main urban centres to provide an efficient information base for recording land records, for administration of urban development programmes and to facilitate urban planning and the construction and accurate recording of all infrastructure installations.

Commence detailed cadastral survey of all urban lands and transfer records to computerized data base.

Monitoring Progress:

It is envisaged that appropriate monitoring mechanisms will be designed at an early stage through the consultative process. These will be applied through the preparation and application of Urban Management Guidelines in the five main theme areas outlined above.

Commitments:

Part D: International Cooperation and Assistance

Priorities:

Capacity-building:

The cooperation of the United Nations Development Programme/World Bank/United Nations Centre for Human Settlements (Habitat) **Urban Management Programme** will be sought for programme capacity building.

2

Issue: Housing Policy

Lack of shelter for those mainly falling in the low and lowest income bracket needs to be addressed as a matter of urgency. Conscious of this need Government proposes as a matter of urgency to initiate a comprehensive review of the shelter sector including supply, demand and affordability, and to undertake a thorough review of housing finance facilities currently available through existing financial

institutions, with a view to establishing appropriate new modalities for wider promotion of affordable urban housing. There is also a clear need to undertake an immediate review of planning and construction standards in relation to the provision of shelter for the low income groups if a viable enabling strategy is to be implemented.

Strategies and Policies:

The overall strategy of the Government is to design housing programmes that will provide adequate shelter for the poor and the poorest urban income groups through an enabling approach to shelter development and improvement that is environmentally sound. This may include promoting the regularization and upgrading of informal settlements.

Objectives:

While the long term objective will continue to be adequate **Shelter for All**, by the year 2000 it is hoped to have:-

- a. Promoted owner occupied houses by enabling the potential home owners to have an increased accessibility to land, housing finance and use of local building materials.
- b. Promoted environmentally friendly schemes on water and sanitation, footpath, recreational areas and preservation of traditional architecture.
- c. Promoted employment opportunities in the housing sector by improving the skills of artisans.
- d. Promoted community participation in clustered areas for improvement of health, sanitation and civic sense.

Activities:

The five year programme 1996 - 2000 targets the provision of 4000 total housing units in the urban areas. Activities will cover servicing of land as identified in the master plans and release for constructions, and the target groups shall be identified early in the process.

To enhance affordability, suitable housing finance schemes shall be prioritized to increase the number of beneficiaries e.g. savings scheme, reduced down-payment and longer term loans from the Provident fund, and construction modalities will be developed which will be carried beyond this period.

The current housing shortage has emerged due to higher demand for land and houses, high cost of materials and inappropriate housing finance. Hence the people will be encouraged to use community labour, local materials and adopt incremental development of housing.

The people will also be motivated through campaigns for cost effective constructions, and pay for all services including land. Government shall play a role to stimulate development and providing access to land.

Monitoring Progress:

- a) Frequent discussion shall be held with people and the builders to monitor progress.
- b) Physical verification will be carried out to advise and improve the activity.
- c) Housing experts will study from time to time to find out impacts of such schemes.
- d) A mid term review will be conducted involving all actors for incorporating the required changes in the future programmes.

Commitments:

1. Government may need to provide or supplement a land bank for this programme and acquire new land for future use.
2. Financial institutions will need to assist the government in developing people related housing finance scheme
3. General housing design standards will require to be reviewed for Low Income Groups while maintaining some traditional architecture component of buildings.

Part D: International Cooperation and Assistance

Priorities:

Capacity-building:

Advice may be sought from consultants on shelter issues and seek financial resources.

3

Issue: Support to the Private Sector.

The Royal Government, in its '**Guidelines for the Preparation of the Eighth Five Year Plan' 1997 - 2002**, advises that the formulation of development programmes for the 8th plan should be guided by, among others, institutional development through human resource development, decentralization, community participation, private sector development and privatization.

As stated in the UNDP Strategy Paper 'Cities, People and Poverty' - **Urban Development Cooperation for the 1990's**, both government and the private sector "must give far more attention to policies that create an economic environment in the cities that is more conducive to the transformation of the informal sector from low-income self-employment activities to those that generate jobs. Low paying services and unregistered micro-enterprises contribute significantly to the economy", yet..."many policies of local and central governments hold down the supply of urban sector goods and services. Local and city regulations - such as physical zoning laws - are often insensitive to the needs of the urban informal sector."

There is, as yet, a largely untapped capacity within both the formal and informal sectors and through community -based participatory activities, to reduce the employment burden on the public service in Bhutan. At the level of small businesses there are opportunities, for example, to develop plumbing, electrical and general repair capabilities. Aspects of street cleaning and solid waste management can also be privatized.

Strategies and Policies:

The Government proposes to encourage the private sector to increase its stake in the creation of urban employment opportunities through the promotion of essential yet flexible regulations, the establishment of an appropriate small enterprise credit scheme, and the provision of technical and management assistance to appropriate existing and embryo firms.

Objectives:

By the year 2000 it is hoped to have an urban environment which encourages the private sector to play a major role in employment.

Activities:

Through an internal process of discussion and consultation within Government, the local urban authorities, community groups and other private sector stakeholders, design a package of enabling and support activities such as:-

- a. the creation of favourable credit mechanisms for small enterprises
- b. the preparation of training modules and organization of workshops on better bookkeeping and management practices for new and small businesses
- c. the establishment of institutional frameworks and policies for the promotion of small enterprises e.g. trade organisations, cooperatives for bulk purchasing, programmes to encourage subcontracting between formal and informal firms, and the purchase of goods and services by government through the informal sector.

Monitoring Progress:

Monitoring will be achieved through the application of a work programme to be prepared by government during the initial discussions with stakeholders.

Commitments:

The Royal Government of Bhutan will pursue its present policies of privatization of activities wherever possible and take the lead in stimulating the process of private sector employment creation outlined above in successive five year plans.

Part D: International Cooperation and Assistance

Priorities:

Capacity-building:

Advice and training may be sought from consultants through international cooperation programmes

4

Issue: Human Resource Development

There is an acute shortage of suitably qualified personnel to plan design and manage urban development programmes and the municipal administration. Bhutan can neither afford to recruit international professional services nor delay the process of developing human resources locally to handle complex issues like urban management and housing provision. The municipal affairs are currently managed by the District Engineers with a small team of technical staff and accountants under the guidance from the Dzongdags.

Strategies and Policies:

The on-going Human Resources Development Project managed by the Royal Civil Service Commission under one umbrella within the government addresses the general needs of the country. The new strategy will be to frame a comprehensive programme to develop a group of professionals to plan, design and manage the city affairs more efficiently. The policy shall be to train and upgrade existing skills and recruit new professionals who will be imparted appropriate training.

Objectives: By the year 2000 it is hoped to have:-

- a. upgraded the implementation skills of the existing technical staff to suit the changing need of the urban dwellers.
- b. trained the staff newly recruited prior to posting in the municipalities.

- c. replaced the manual labourers with specialized cadre for different type of services.
- d. fully computerized the financial and land management divisions.
- e. trained urban managers not only in daily affairs but also in stimulating development activities.
- f. organized professional discussions through meetings and seminars.

Activities:

By the year 2000 a team of inter sectoral disciplines shall be developed by upgrading the skills of the existing staff and recruitment of additional staff as supplied by the Education Division.(MHE) Besides these the existing staff of the municipalities shall be given additional training both in country and outside. Those working in planning and designing will be given opportunities for specialization.

Having upgraded the staff teams the transfer of skilled and experienced staff to other areas will be minimized. Staff will be able to contribute to the human settlement sector on a continuous basis thereby helping in producing more functional and economical plans.

Monitoring Progress:

- a. The RCSC shall be consulted to incorporate the training needs of the Human Settlement Sector.
- b. Periodic reviews shall be carried out to incorporate the new requirements and to take stock of the situation.
- c. All those going out of the country for specialized courses shall be required to sign a bond that they will serve the organization which sponsored them as per the prevailing government policy.

Commitments:

The government will plan to send the students for undergraduate courses under the general education programme to meet the long term needs of the sector and the input to the technical and vocational training centres shall be matched to the sectoral needs.

Part D: International Cooperation and Assistance

Priorities:

Capacity-building:

Efforts will be made to obtain international assistance in the provision of fellowships and placement in appropriate educational establishments and to support in-country training programmes, together with necessary equipment.

Work Plan Human Settlements 1996 - 2000

SL No.	Activity	1995			1996			1997			1998			1999			2000		
		J	F	M	J	F	M	J	F	M	J	F	M	J	F	M	J	F	M
e)	Project Report Preparation (demand driven)																		
f)	Cottage Industry Development																		
i)	Product Development																		
ii)	Tailoring Training (Full time)																		
iii)	Tailoring training (Partime)																		
4	Human Resource Development																		
a)	Urban Designer 48 m/m																		
b)	Urban Economist 24 m/m																		
c)	Urban Planner (legal) 36 m/m																		
d)	Computer Programmes 24 m/m																		
e)	Surveyor 48 m/m																		
f)	Surveyors (6 Nos.) 144 m/m																		
g)	Building Inspectors																		
h)	Sanitation Inspectors																		
i)	Water Meter readers and Plumbers																		
j)	Staff development training																		
k)	Workshop District Engineers																		
l)	Water Supply & Sanitation M.Sc. 48 m/m																		
m)	Short course Water Supply																		

Legend :

- MA - Municipal Act
- ULA - Urban Land Act
- BBR - Bhutan Building Rules
- Firm Programmes
- Second Phase

- PS.
1. These programme have been agreed upon in the event that adequate resources are available to the implementing agencies.
 2. The support to private sector programme are a part of on-going programmes.
 3. Some of the training are on-going programmes.
 4. Financial projections will be done projectwise during feasibility studies.