

C National Investment Opportunities

The review of the resources in different sectors indicates that most of the country resources are scattered. The high cost of collection and transportation over difficult terrain discourages exploitation on a commercial scale. In the mineral sector except for quartzite, limestone and dolomite for power intensive industries, other main mineral resources available do not support any large-scale industry, while the national concern for the environment precludes the establishment of metallurgical industries or metal forming industries, such as foundry and forging. Although reliable and cheap hydro power is considered a major comparative advantage, the shortage of firm power constraints establishment of power intensive industries. The paucity of land with basic infrastructure is another constraint on industrialization for all but for the smaller industries using clean technologies for the manufacture of precision products and services.

The mapping of resources at the Dzongkhag level provided a good insight of possible investment opportunities in the Dzongkhags, and this has been followed by a SWOT analysis at the national level. Despite the constraints, opportunities do exist predominantly in small sized enterprises based on indigenous resources, niche markets and services. The current status in brief and synopsis of national investment opportunities are summarized in the following sections. The list of project ideas under different sectors is provided in the chapter titled Projects for further detailed study.

C.1 Infrastructure

Urban infrastructure development; construction of new roads, highway widening and increasing connectivity to remote areas has been given the top most priority by the Royal Government. At gewog level, enhancing rural infrastructure and accessibility through construction of farm and power-tiller roads and construction of new gewog centers are in progress. While the creation and maintenance of the physical infrastructure is critical to the pursuit of Gross National Happiness, the country's small dispersed population and extreme topography makes it difficult and costly to build and maintain this vital infrastructure. The domestic transport cost constrains the country's economic and social development, when accessibility is the defining development issue in the country - be it access to opportunity, enterprise, markets, or services - since poor rural access is synonymous with isolation and poverty. The transport sector key statistic is provided in table 1.1 below.

Road transport is the dominant mode of transportation for passengers and freight within the country and to the neighboring states of India. The country's vehicle fleet has increased significantly from about 13,600 at the end of 1997 to over 33,000 at the end of 2006. Despite this, Bhutan has the lowest rate of traffic-related fatalities in South Asia, only around 8 per 10,000 vehicles a year. There are opportunities for construction of roads on toll user fee basis with private sector participation.

Air transportation: The country has one airport at Paro, with a paved runway suitable at present for medium size aircraft. Druk Air is the national carrier linking Bhutan with Delhi, Kolkata and Gaya in India, as well as Bangkok, Yangon, Dhaka and Kathmandu. The carrier transports around 40,000 passengers a year, about two-third of whom are non-Bhutanese. No domestic air or helicopter service exists. Investment opportunities exist for helicopter services connecting the important tourist places in the Western, Central and Eastern regions important dzongkhags.

BHUTAN: Transport Sector Key Statistics

Particulars	Units	As of 2006
Length of roads	km.	4,393
Main roads	km.	3,750
Paved roads	%	56
Access to all-season roads (% of rural population)	%	47
Road density – Land	km./1,000 sq. km.	114
Rail track length		N. A.
Total No. of ports		None
Total No. of airports		1
International airports		1

Table 1.1: Transport Sector Key Statistics

However, there is good scope for development of institutional capacity, foster bilateral, regional and international cooperation in the infrastructure sector as follows:

- Promote private sector participation in transport activities.
- Have private sector participation in development of efficient freight transport system, a comprehensive land freight transport information system and containerized cargo for international trade.
- Private sector participation in development of infrastructure based on user fees charge like toll roads for better connectivity and creating access to least connected dzongkhags.

Power Sector: In the power sector, Bhutan has a large potential for hydropower generation but the growth in this sector is very much dependent upon Government initiative and external funding. The estimated potential of 30,000 MW hydro power shows good scope for investment in private sector small hydro power plants, transmission and distribution besides the public sector initiatives in establishing mega hydro power projects.

The total dependence on hydro power has created situation of peak power shortage in winters and surplus availability in summer. To balance this, alternative power generation have to be explored viz. small Combined Cycle Gas Turbine Power Plants of 5 to 10 MWs. Investment opportunities in captive micro hydel power plants to cater to existing industrial areas do exist. Bio-mass Power Projects based on municipal solid waste could be explored. This will spur the development of community based CDM projects which will be in alignment with country's green and environmental friendly policies.

To spur growth in the manufacturing sector, more power generation capacity will have to be realized. Power is a long-term requirement and there is a time element involved. Private investment is needed to harness the flowing water resources for hydropower and in improving transmission and providing storage solutions.

C.2 Agriculture, Livestock & Horticulture

Bhutanese economy is mainly dependent on the agricultural sector as the main source of livelihood and income for the majority of the population. Agricultural practices in Bhutan are labor intensive with relatively low intensity of farm inputs. The economy, one of the world's smallest and least developed, is dominated by small-scale subsistence farming based on traditional technology with relatively little economic interaction outside of local communities.

Based on the analysis of surplus availability of resources in agriculture, livestock and horticulture there appears potential for processing of produce like milk, maize, fruits, vegetables and spices. Further, in the long run, the agro-processing industry in Bhutan can capitalize on the following competitive advantages:

- The ability to grow a wide range of produce, owing to the variety of microclimates, from high-altitude zones (alpine), through central valleys (temperate), to low-lying foothills of the Himalayas (sub-tropical).
- Organic farming which is practiced by default because the country has not developed the pest infestations endemic as in neighbouring countries and has not used agricultural chemicals extensively.
- An extension service that is experienced in introducing new high-value crops. While the country could produce many high value primary products, it lacks mechanisms for realizing this potential. There is a need to work with farmers to progressively identify and exploit opportunities.

There is a need to make high-quality raw materials consistently available to the farm sector so that their produce suits the needs of the market.

Bhutan is well placed to grow many high-value products such as those used for extraction of essential oils and traditional medicines, in the full range of products from both high and low altitude species. However, the demands of consumers require a high level of professionalism. This will come from intensive education on farming and farm productivity to remove the present technological backwardness.

To overcome limitations of land, it is suggested to adopt practices that results in higher value addition to the products:

- Tissue culture
- Greenhouse cultivation of exotic vegetables for export markets
- Production of high yield seeds
- Increasing cultivation of walnut, mushrooms
- Organic branding for the agro produce

Potential exists for value addition to horticulture produces. It is recommended that these be explored through study of feasibility of beverage industries like fruit juices, pulps and other produce having export markets.

One of the important issues for development of this sector would be the compliance of SPS¹ and TBT².

The Agreement on the Sanitary and Phytosanitary (SPS) measures specifies the principles and rules which member countries must use in regulating imported products.

It defines SPS measures as measures taken to protect human, animal or plant life or health from:

- Risks arising from the entry, establishment or spread of pests, diseases, disease carrying organisms or disease causing organisms.
- Risks arising from additives, contaminants, toxins or disease-causing organisms in food, beverages or feedstuffs
- Diseases carried by animals, plants or products thereof.

C.3 Mineral Water & Beverages

The Royal Kingdom of Bhutan has the potential to provide pure drinking water to the global market. This water is available from the numerous snow and rain fed streams that abound in the country, as well as from a large number of natural springs. The water from such natural springs universally commands the highest price as packaged natural mineral water.

Exploitation of this natural resource of Bhutan is completely in accord with the enlightened policies of His Majesty and the Royal Government of Bhutan for green, clean and environment friendly development that generates employment and encourages private sector participation. There are many natural sources (aquifers) of mineral water which needs to be explored.

C.4 Wood Sector

The potential of wood-based industries in Bhutan has not been exploited in a systematic and planned manner. Much of the industry is at an early stage of development using old technology. Most industrial units are small sawmills utilizing only local sources of supply. The total annual intake of the wood-based industry is in the range of 170,000 to 200,000 cubic meters. The raw material (wood) support prices in many cases are fixed by Government to sustain and develop the industry.

In Bhutan, keeping with the policy of 60% reserve forest, the annual availability of logs is 150852 CuM (as projected in 2005-09 period) which is enough to develop wood-based industries to cater niche markets. But realizing this potential will require the availability of single-species timber, in appropriate sizes and quality, use of appropriate equipment and properly trained labor.

It will be most appropriate step for the Bhutan Government to support setting up of a Wood Industry Park for a cluster based approach. This will help development of wood sector into an organized industry.

Bhutanese forests should be certified as being sustainably managed to provide a unique selling point for Bhutanese wood products. Sustainable forest management, ample supplies of renewable timber from its forest plantations, trained labour and up-to-date technologies are the key factors for carving out a substantial export business in wood-based products such as:

- a. Sports Goods
- b. Furniture
- c. Construction Wood
 - Cladding
 - Doors and windows
 - Flooring
 - Panels
 - Wood-based Composite Building Materials
 - Ply wood
 - MDF Boards
 - Block Board and Flush Door Shutters (Wooden) (Solid Core)
 - Wood Bending
 - Timber Seasoning Kiln (Solar)

It is suggested that (Wood Based Industry Park) WIP is established with common facilities which can be utilized by all the wood products / furniture manufacturers in order to assist them to be more efficient and productive as well as to produce quality products at a competitive price for the export market. Common facilities set up include kiln drying and finishing plants.

¹ Sanitary and Phytosanitary

² Technical Barriers to Trade

This park can work to develop a technological base for sustainable growth of this industry viz. provide independent assessments of forest management practices as well as to meet the demand of annual timber requirement in close coordination with Forest Department.

Timber certification could also be introduced as a market-linked tool to promote and encourage sustainable forest management as well as to provide an assurance to buyers that the timber products they buy come from sustainable managed forests.

Bhutan timber industries should benchmark the activities according to worldwide logging and forest preservation standards set by bodies such as the Forest Stewardship Council (FSC) and the International Tropical Timber Organization (ITTO).

C.5 Non-wood Forest Produce

Many cottage industries utilize non-wood raw materials from forests to serve special markets within and outside the country. Resin tapping and lemon grass oil distillation have become important activities in the eastern part of the country. In this sector, cottage scale industries are an important element, as the resources are scattered in many places and only through primary processing, can these resources be fed into the value chain.

- **Resins and Waxes**

The resin from chir pine is collected in the central and eastern parts of Bhutan. The resin and turpentine factory in Samdrup Jongkhar processes this resin. Waxes are derived from the seeds of *Rhus verniciflua* and *Rhus syccdanea*. Other sources are beeswax from beehives and sticklac produced by the tiny insect called lac. The bark of *Daphne papyracea* and *Edgeworthia gardneri* is used for paper making by many small family-owned units. Resins and wax industry could be developed in small and medium sector based on the available resources.

- **Essential and Wood Oils**

Essential oils are subtle and concentrated liquids containing volatile aromatic compounds, and are produced by distillation, expression, or solvent extraction from the flowers, seeds, leaves, stems, bark and roots of herbs, bushes, shrubs and trees. These oils are used in perfumery, aromatherapy, cosmetics, incense, medicine, household cleaning products, and for flavoring food and drink. Their use in aromatherapy and other health care areas is growing.

Lemon grass (*Cymbopogon flexuosus*) is one of the most important essential-oil-bearing plants found in Bhutan. Trashigang and Mongar Dzongkhags have large areas under lemon grass production. The essential oil companies buy lemon grass collected from the wild areas at the roadside for their distillation units. Wood oils are derived from pine-needle, agar, cedar, champ, calamus, keora etc.

There is extremely good investment opportunity in small and medium sector for aromatic and rejuvenating oils which can be exported to developed countries.

- **Non-edible Vegetable Oil & Bio-diesel**

It is suggested that a comprehensive study be undertaken for assessing the potential of non-edible vegetable oil-bearing plants like the Kadamb, which is one of the widely spread plant species in Bhutan. Bio-diesel production from the seeds of these non-edible oil plants have an excellent opportunity for Bhutan.

Based on the foregoing, it is recommended to undertake detailed feasibility study for producing bio-diesel from Kadamb seeds and other non-edible vegetable seeds (non-edible oils, which are found in plenty in Bhutan) based on following two tier cluster approach:

- First Tier: Cluster for SVO (Straight Oil Systems)
- Second Tier: Cluster for bio-diesel processing plants

The oil extraction can be done with hand or engine driven expellers. These are simple machines, which can be operated at village level and built within the country.

Socio-economic impacts of the exploitation of the Kadamb plant could be very wide in terms of:

- Erosion control
- Income generation
- Renewable energy sources

The First Tier: The small processing non-edible oil units involving small cluster groups of farmers on cooperative basis can be formed. The Kadamb seeds (or other non-edible vegetable oil seeds) can be collected at one place and could be processed to produce non-edible vegetable oil. This straight vegetable oil (SVO) system will be fed to the next stage of the bio-diesel processing viz. esterification where more complex processing will be done compared to the SVO processing.

The Second Tier: In the second tier, each cluster will have supplies from at least 10 or more SVO clusters and it will be a pyramid like system wherein the SVO collected from the first tier clusters are fed as raw material and the bio-diesel is produced in medium capacity plants ranging from one ton per day to 10 tons per day after studying the grouping of the SVO clusters.

Suggestive Elements:

- Use of State-of-the-art technology with high quality SVO to bio-diesel and glycerol
- Cluster approach – each centre is operated by trained technicians and good quality processing equipment to cover 20-30 villages within a radius of 8-10 km.
- Empowerment of rural communities through development of good quality plantation to processing under two tier systems and training of local youths to take over the operational responsibilities after the withdrawal of the cluster development agency .

C.6 Hospitality Sector

The hospitality sector includes tourism, hotels, tours and travel services as well as handicraft related businesses. This sector is seen as a major source of employment. Tourism in Bhutan has much growth potential both because of the country's competitive advantages and because of problems in other potential destinations in the region.

Realizing this potential will require developing an unambiguous strategy with appropriate policies and regulations, promoting culture and spiritual tourism and developing new tourism products and services, undertaking more active marketing, improving access to Bhutan, addressing seasonality issues and improving standards of accommodation and service.

Eco-tourism, culture tourism and adventure tourism would undoubtedly do exceptionally well in Bhutan with its varied geography and rich culture. Investment opportunities exist in the building of institutional capacity, improving the quality of services and skills, and in branding of Bhutan through better advertising and publicity. Building of rest rooms with cafeteria facilities for travelers on the main highways is an attractive area where a lot of investment potential exists.

Bhutan has many traditional souvenir items locally made in different parts of the country. These items vary from masks in Eastern region to bamboo and cane products, hand-made paper products and souvenir items made from Bhutanese textiles, from the central region. Bhutan's arts and crafts reflect the unique spirit and identity of the Himalayan kingdom. The art of Zorig Chosum or the thirteen arts and crafts of Bhutan – remains very much alive today. It includes carpentry, blacksmithing, weaving, sculpturing and many other crafts.

Souvenir/Handicraft industry Market Cluster (Trade) in all towns -Manufacturing units in the Dzongkhags.

The tourists coming to Bhutan still cannot find a choice of souvenir items in the markets of Thimphu, Paro or other important tourist destinations. Unlike in most tourist haunts elsewhere, there are no models of Dzongs or chortens or other memorable buildings or monuments of Bhutan, nor small embroideries depicting the Bhutanese scene. There is surprisingly little indigenous commercialization. It is reported that many of the items sold as Bhutanese artifacts are actually made in India or China.

Organizing this market could be a very attractive business proposition. Not only will it be beneficial to the tourist but will also generate income for the skilled Bhutanese craftsmen located in remote corners of the country.

It is proposed that a private cooperative cluster be formed and based at Thimphu with assistance from the Royal Government. This Cluster will establish itself in the international and high-end domestic market for its eco-friendly ethnic products.

The aims of the cluster will be the preservation of the traditional form of production in a scientific manner and the improvement of the living standards of the artisans by:

- Collecting accurate information about the traditional handicrafts of Bhutan that could be presented in souvenir form in Bhutan and abroad.
- Creating an environment of mutual trust among competing craftsmen.
- Reducing the cluster disarticulation (i.e. lack of linkages among the different cluster actors).
- Enhancing the design, printing and marketing capacity of the artisans.
- Setting up a unique logo and brand showing the ethnicity of these products.
- Setting up standards for each craft and its craftsmanship, and conducting product quality audits.
- Showing new design and product concepts to artisans and encouraging them in continuously higher value addition to their craft.
- Exploring the possibility of making items from marble (yellow and white), talc and slate – all of which are indigenously available.
- Arranging for micro finance and centralized procurement services.
- Setting up branded retail outlets in various tourist spots and prominent hotels as well as in international airports and handicrafts emporia in India, Thailand, Singapore and other countries.
- Exploring unique resources in agro forestry and mineral sectors to turn into handicraft items.

C.7 Mineral Sector

Dolomite, limestone and gypsum deposits in Bhutan are widespread. Gypsum is available in Khothakpa area of Pemagatshel Dzongkhag. Limestone deposits are found in southern belt from Samtse in the west to Nganglam in the east. Limestone is also found in Shumar/Paro/Tangchu formations in the interior parts of the country from Haa/Paro/Mirchang in the west to Tsebar and Wamrong in the east. Dolomite occurs all along the southern foothills from Samtse in the west to Manas river in the east. For captive processing units, all these minerals are available on lease for use in any suitable industry proposed by the private sector.

The types and grades of gypsum and limestone available can be explored for the setting up of gypsum board units and cement plants. Dolomite presently being exported almost totally as raw material can be value added by processing into magnesium salts and related chemical compounds.

Talc occurrences, another important mineral, extend from Samtse in the west to Sarpang in the east. Talc occurs as thin lenses, films, pockets and bands associated with quartzite, phyllite and calcareous quartzite, and the thickness of bands varies from a few centimeters to 40 meters. In Chhukha and Samtse Dzongkhags where workable deposits are present, talc powder milling and bulk packaging units appear to be viable.

C.8 Services sector:

The following service sectors offer potential investment opportunities in Bhutan:

- Health & Herbal Medicine
- Transport and Logistics
- Financial
- Information and Communication Technology
- Media and Entertainment
- Postal and Courier
- Personal
- Facility Maintenance
- Miscellaneous

C.8.1 Health & Herbal Medicine

The flora of Bhutan is very rich and consists of several elements. The bulk of the temperate and sub-alpine flora consists of Himalayan-Chinese elements, including plants of the West Himalayas, East Himalayas and pan-Himalayan species. A small portion of flora in drier parts of Duars and the tropical zone is Deccan in distribution. The northwest region of Bhutan consists of typical Tibetan species. Some plant species in the alpine zone have Euro-Siberian and Arctic-alpine affinity.

About 300 out of 600 identified medicinal species in Bhutan are commonly used to prepare drugs. Certain minerals from the forest (belzab, chingsi, chuigang, dhojui, dho-phawang, dragshum, thingsi, tsage tsang, etc.) and animal parts are incorporated in the drugs for the Bhutanese system of medicine called gso-ba-rig-pa. Bhutan has more than 300 species in the alpine zone that are used in Chinese and Tibetan traditional medicine.

Health care in Bhutan is free for both Bhutanese and visitors. The health systems have evolved into a fusion of traditional and modern medicine and it is not uncommon that a patient would consult both the modern and the indigenous physician. The rich tradition of indigenous medicine, based primarily on herbal treatment, is kept alive by the Institute for Traditional Medicine Services in Thimphu and 19 indigenous dispensaries scattered across Bhutan. The museum inside the Institute in Thimphu gives an insight into the treatments and the collection and processing of herbal plants into medication.

The major markets for medicinal products are Taiwan, Singapore, Malaysia and the United States. There are also sizeable markets in Japan and Korea because of their long histories of dealing in Traditional Chinese Medicines. There is increasing international demand for Cordyceps which Bhutan can take advantage of.

Medicinal and herbal products have an extremely good exploitable potential in Bhutan which, till date, has not been fully explored or studied in detail in terms of sustainable development of "Made in Bhutan" traditional medicines for the world market. Bhutan has hundreds of plants with medicinal and aromatic properties to meet the rising demand for herbal products for use in cosmetics and health care products in key markets like India and other Asian, Middle East and Western countries. Bhutan trades most of its medicinal and aromatic plants in raw material form. The following are some of the medicinal and herbal products that can be explored for production:

- a. Traditional Chinese medicine (as from Cordyceps)
- b. Traditional medicinal products
- c. Ayurvedic medicinal formulations
- d. Herbal products

Branded natural healing centers, where traditional rejuvenate treatment blended with modern culture, could be developed and marketed for attracting tourists. These centers will do exceptionally well and will be in line with the GNH philosophy of economic development without disturbing the core values of Bhutanese culture. Neighborhood India is a big market and later on franchise-based centers could be opened in major Indian cities offering treatment using 'Made in Bhutan' ethnic herbal and healing products like essential and aromatic oils and other natural products.

C 8.2 Transport & Logistics

Road and air transport are the two major modes of transport in the country. Rapid economic development and higher purchasing power of the people have led to greater mobility and therefore, increased demand for transport services. People's expectations for efficient and quality transport services and facilities have also increased correspondingly. There are investment opportunities emerging in the private sector for the provision of efficient, reliable and responsible passenger and freight transport services in urban areas. These include:

- **Intelligent Transport System** range of technological services including processing, control, communication and electronics that are applied to a transportation system. It also includes an advanced approach to traffic management including congestion, safety, and pollution control and transport efficiency.
- **Passenger transport services** - Bus services which provide scheduled services on designated routes, and are duly authorized to carry passengers on payment of fare fixed for a given journey.
- **User Fees Based Rest Facility** means a passenger facility located on a highway where drivers and passengers can eat, take rest and use the rest-room before resuming the journey.
- **Transport infrastructure and facilities** include integrated bus terminals, offices, and rest and vehicle repair facilities along the national highways.
- **Freight and Goods Transport services** for national and international freight carriers
- **Development of Air transport infrastructure** for linking various dzongkhags and promotions of tourisms. Helicopter and or ATR services are required to be developed with small landing facilities.

C 8.3 Financial & Legal Services

Financial institutions play a catalytic role in the socio-economic development of any nation, be it in banking, insurance or services sectors. Financial institutions in Bhutan mainly represent banking, insurance and stocks.

Investment opportunities exist in development of financial institutions, training centers, retail credit and loan services, ATM and credit cards. Legal services providers (law interpretation, advocate legal cases, framing and revision of laws and national acts, rules and regulations for agencies) need to be developed.

The insurance spread can be increased by creating new and innovative insurance products, such as insurance cover for tourists, crop insurance, property insurance, unemployment and other insurances.

C 8.4 Information & Communication Technology

The enormous opportunities that exist in IT and related fields should be exploited. Private institutions, entrepreneurs, schools and interested individuals should be encouraged to participate in the promotion of this important technology. The Telecom services, E-governance services and IT services like ITES/ BPO services, Financial services like Accounting and Auditing, Data Processing, Back office services, Business Process Outsourcing services – all provide avenues for profitable investment.

C 8.5 Media & Entertainment

The difficult terrain and climatic conditions, varying even within short distances, have resulted in isolated communities. This necessitates the need for good communication facilities for socio-economic development. As society becomes more educated, the information needs increase, and the information sector naturally assumes greater priority. This leads to the demand for media growth. Rapid advances in technology have raised the capability of the media in its production processes and generated the need for special administrative and management skills covering the fields of planning, finance and accounts, human resources and materials. There is an investment opportunity in developing these as well as the professional and technical skills required in the areas of RF and satellite engineering, video & sound engineering, archive management, network/web-site administration, art and graphics designing. The field opens up for documentary video productions, photography and journalism. Related fields also require socio-anthropologists and legal/copyright experts.

C 8.6 Postal & Courier services

Modern postal service is one of the oldest public services in Bhutan. Private courier services are mostly available in Thimphu, Paro, Phuentsholing and Indian bordering towns. However, in the interior parts of the country, courier services are almost non-existent. The local transport buses and taxis are used for sending the courier packets as a part of an informal network in the absence of an organized courier business chain. Thus, there is need for courier services in important Dzongkhags to cover the spread of services to remotest part of the country with value-added services like goods parcel, delivery of financial services of banks and insurance company etc. Collaborative arrangement with Indian/ international cargo and courier service companies could be another investment opportunity in this sector.

C 8.7 Personal

Services like dry cleaning, beauty saloon, tailoring services, photocopier, STD-PCO and cyber café are some of the services under personal category which have presence only in the main developed Dzongkhags. In the interior and remote parts, these services are needed.

Enterprises catering to local demand for these services provide investment avenues to small scale investors.

C 8.8 Facility /Maintenance Services

The infrastructure and industrial development of any nation requires organized maintenance or facility management support services. Support services of electricians, plumbers and for repair of electronic items are needed, since existing facilities for repair of common home appliances (TV, geyser, refrigerators, ovens, heater, washing machines, press, sewing machines etc.) are almost non-existent. For most of the servicing jobs, the items have to be sent to neighboring Jaigaon in India via Phuentsholing. There is good scope for organized facility management services. Small and medium sector companies can invest in creating centralized hubs for offering these services on annual maintenance contract basis.

With increasing number of vehicles and means of transport, automobile repair shops and garage needs are increasing in various towns.

C 8.9 Research & Development

Research and Development is a new area in the context of Bhutan. Given the clean environment and emerging educated workforce, this sector holds good potential for future investment.

Among others, Diagnostic laboratories, Industrial and Environment (Emission) testing laboratories, Medicinal plant and drug formulations laboratory, Food testing laboratory and international standards services are areas that hold future investment potential in this sector.

C.8.10 FDI Potential

The announcement of the FDI Policy of the Royal Government of Bhutan in 2002 and the implementation of the FDI policy upon approval of FDI Rules and Regulations in 2005 was a step in the right direction. It remains now to package this policy in attractive terms for foreign investors.

FDI is envisaged to have positive impact in fostering industrialization process as well as in broader perspective of overall economic development. The impacts on different development aspects are as follows:

1. Effect on National Economy

FDI can contribute to GDP, gross fixed capital formation (total investment in a host economy) and balance of payments. FDI can also contribute towards debt servicing repayments, stimulate export markets and produce foreign exchange revenues. However, the impact of FDI will largely depend on the conditions of Bhutan, e.g. the level of domestic investment/savings, the mode of entry (mergers and acquisitions or green-field investments) and the sector involved, as well as Bhutan's ability to regulate foreign investment.

2. Effect on Social Development

FDI can help stimulate employment, raise wages and replace declining market sectors. However, Bhutan from the point of GNH, should ensure that benefits of employment and training flow to all segments of society and are not reserved for the typically wealthy elite, or have an urban emphasis. The cultural and social impact of investment directed at non-traditional goods, may affect the cause of GNH - this needs to be analyzed and properly balanced in the right direction.

3. Effect on Infrastructure Development and Technology Transfer

"Greenfield" investments in new business sectors can stimulate infrastructure development and bring in new technologies to the Bhutanese economy. These developments can also result in social and environmental benefits. Investment in research & development (R&D) from parent companies can stimulate innovation in production and processing techniques in Bhutan. Capital intensive foreign technology or organizational techniques may actually be inappropriate to local needs in cases where these negatively affect local businesses, especially the smaller business sector. This monitoring needs to be factored in.

4. Impact on Domestic Industry

FDI can create "Crowding in" effect that can stimulate growth in domestic businesses within the national economy. In contrast, Bhutan should avoid the "Crowding out" effect where TNCs (Trans National Companies) may dominate local Bhutanese markets, stifling local competition and entrepreneurship in specific sectors due to exclusive production concessions and preferential treatment to TNCs.

5. Impact on Environment Factors

It may be difficult for the Royal Government of Bhutan to regulate and absorb rapid and large FDI inflows, with regard to regulating the negative impacts of large-scale production on social and environmental factors. In the short term, being a low-income economy, Bhutan will have less capacity to mitigate environmental damage or install protective measures. However, though starting late, the country can take care of these aspects in the medium and long term. With proper industry selection mechanisms, FDI can meet international standards of compliance to environmental norms.

6. Effect on Sustainable Development

If FDI is to play a greater role in the sustainable development of Bhutan's economy, national legislation could support better investment security for local markets with fair competition and corporate responsibility through defining equitable, secure, non-discriminatory, transparent investment practices. There is a concern that increased regulation could deter new foreign investors. However, evidence such as in Eastern Europe, shows that tighter regulation of corporate, environmental and labour standards has not affected FDI growth.

C.8.10.1 FDI Potential in the Short-Term

Short-term (1-3 years): In spite of the difficulties Bhutan experiences in attracting FDI in any appreciable amount, there are some sectors where FDI can be accelerated if the right promotion packages are created.

a. Infrastructure

Infrastructure is one of the most required factors for attracting FDI. In Bhutan, infrastructure is below the desired level. The Government needs to open up immediately FDI participation in the infrastructure development.

- **Roads:** The Tourism Development Centers and Industrial Zones should at least be linked with express highways and Infrastructure Corridor.
- **Power:** Power grid should be set up for transmission of power to Special FDI zones especially for medium to heavy industries.
- **Telecommunication:** A broadband optical fiber network for reliable data transmission network and to reduce the international telephony cost is urgently required.
- **Airports:** In the short term, Bhutan has to open up airports to foreign airlines which are essential pre-requisites for easy movement of high flying private foreign investors. Furthermore, the airport is presently underutilized. The Government can earn a lot of foreign exchange by allowing foreign airlines even while maintaining the profitability of Royal Bhutan Airlines, Druk Air. There are 14 foreign airlines operating from Nepal and this shows the opportunity missed by Bhutan. For faster movement within the country, Government should encourage setting up of helicopter services, small airports and helipads with private FDI participation.
- **Medical Infrastructure:** The structure and facilities in Bhutan are far from satisfactory and this will create a major problem for the best brains to come to Bhutan for a longer period of time. There is a very good scope of FDI for private medical facilities.
- **Education:** There is a vast scope for FDI in this field, especially in the field of professional studies such as medical, engineering, accountancy, management and software. This is very essential for qualified skills required in all the other sectors of the economy.
- **Dry Port Facilities** in Phuentsholing and other commercial centres are essential for handling increased traffic of export goods, which will help in reducing both time and costs. This is good area for attracting FDI.

FDI in infrastructure will be required in all the phases but its requirement will gradually evolve and accelerate, as the structure is built up.

b. Tourism

Tourism already plays an important role in Bhutan's economy. It remains one of the country's most promising sectors for attracting FDI because of its incomparable environmental assets and possibilities of religious and therapeutic tourism.

The following initiatives are required to generate more effective promotion of FDI in this important sector:

- Promotion of Bhutan Tourism in India and South East Asian countries for all the year round tourism traffic in order to reduce seasonality.
- Structuring of tourism development zones at sites with strong potential for attracting tourist interest.

c. Manufacturing for Regional and Global Markets

Bhutan will not in the foreseeable future, attract large inflows of FDI in manufacturing based on the classic determinants of domestic market size or efficiency gains. Manufacture accounts for roughly 10 per cent of the GDP and firms are mostly small-scale business involved in serving Bhutanese market. However, Bhutan should take advantage of Bilateral Free Trade Agreement with India, which has been renewed in 2006, and South Asian Preferential Trade Agreement (SAPTA) with other SAARC countries. The government should adopt the policy of "Import substitution and Export promotion". The balance of payments deficit of the country shows high import content without any measures to counter this spurt in imports. The government should assess the possibility of import substitution and initiate specific packages.

A more manageable approach is required for creating industry-enabling infrastructure of good facilities and practices for investors as under:

- Special Economic Zones with substantial administrative autonomy under the control of a zone authority needs to be created.
- Industrial Estates (IEs) need to be developed with proper infrastructure and tax incentives. The Government in its 9th FYP had planned for 5 such IEs in Chhukha, Sarpang, Samdrup Jongkhar, Mongar and Zhemgang. Private FDI could be encouraged to develop these estates.

d. Horticulture and Herbal Sector

Horticulture and herbal products show great promise due to ideal growing conditions in the hills and mountainous regions. Bhutan has hundreds of plants with medicinal and aromatic properties. Demand for herbal products for cosmetic and health uses is rising in key markets like India and in other Asian, Middle East and Western countries as well. Bhutan trades most of its medicinal and aromatic plants in raw material form and loses out on higher value additions thereon.

e. ICT Based Services

At present, the FDI in this sector is negligible. However, the presence of a low-wage trainable labour force and widespread use of English language, point the possibility that this sector can be developed, with the adoption of farsighted policies. Personal computer ownership and internet usage has grown quickly but is still below the standard. Back office processing, medical transcriptions, business process outsourcing may offer good potential. A more likely possibility is sub-contracting with Indian firms once these firms gradually change their focus to high value-added services in IT.

C.8.10.2 Medium-term (3+ years)

a. Hydropower for the Indian and Domestic Market

In the power sector, Bhutan has a good potential for hydropower generation. The growth in this segment is also dependent on Government initiative and grant driven but if there is a spurt in the manufacturing capacity, more power would be required. The growth in this sector in comparison to its potential is very insignificant even with the completion of the Tala Project. Power is a long-term requirement and there is a time element involved. Bhutan will be constrained by power supply once manufacturing facilities are developed. Private investment is needed to harness hydropower and would be useful in improving transmission and distribution facilities.

b. Agro-based Industries

Agro-based industries may be the leading forces in Bhutan's manufacturing sector, and thus, agro-industries should be promoted as potential opportunities for foreign investment. With much of the country's GDP and labour force tied into agriculture, its prosperity is a major determinant of economic growth, and foreign investment could be critical in this process. Bhutan has the potential for producing vegetables and flower seeds. It also has an ideal climate for cut flowers, strawberries, mushrooms and other crops. This potential can be realized if (1) there are adequate transport facilities such as economical cargo linkages, (2) enabling environment, and (3) adequate number of quality cold storages facilities.

c. Banking & Financial Services

The country has only two Banking Institutions, one insurance company and one development financial institution with almost negligible competition. In the medium term, Bhutan needs to open up in this sector; otherwise, the country will have some financial bottlenecks. In contrast, Nepal's financial market is deep rooted with the required width, having as many as 7 foreign banks, 4 foreign financial institutions and 6 foreign insurance companies.

D Country SWOT Analysis

The SWOT Analysis for Bhutan as an investment destination is based on the evaluation of available resources. Factors have been analyzed in two steps:

- 1) Listing of factors either supportive of or detrimental to investment in Bhutan.
- 2) Comparative analysis of the national resources based on surplus availability, supportive infrastructure and relevance to local conditions.

Reference has been made to the United National Development Programme Country SWOT analysis.

Strengths

1. Unique destination with unexplored resources, pleasant climate, friendly people, heritage and culture.
2. Relatively free access to the large Indian market under free trade arrangements, (though this advantage will gradually lessen as India liberalizes trade in line with World Trade Organization requirements).
3. Access to cheap skilled and unskilled labor from India, providing a considerable cost advantage in labor-intensive production.
4. Extremely stable labor relations, flexible labor regulations, with very little restriction.
5. Cheap & reliable electricity supply
6. A clean, efficient, and corruption-free Government.
7. Sectoral advantage for unexploited potential in tourism, horticulture sector, wood, agro-forestry (non -wood), medicinal plants and organic products.
8. Supportive policies for industrialization and private sector development

Opportunities

1. Developing Bhutan as the favoured tourist destination
2. Development of knowledge-based services like ITES/BPO services, animation and digital services and international education hub.
3. Scope for industries requiring clean environment such as Electronics or Research & Development Centres.
4. Scope for setting up sanatoria and health care centres.
5. Opportunity for agro-processing industries, based on Bhutan's seasonal advantage.
6. Potential for wide range of agri produce based on micro climatic conditions.
7. Production of organic food.
8. Several natural resources, such as spring and mineral water, are available for exploitation.
9. Scope exists for service sector activities catering to local demand.
10. Potential for green field investments.

Weaknesses

1. Small land-locked country with extreme topography permitting limited arable land.
2. Lack of entrepreneurial skills in the people.
3. Low volume domestic market of only around 6,40,000 people.
4. Non-availability of local skilled human resource.
5. A rudimentary and uncompetitive financial system offering only basic financial services at a fairly high cost.
6. Limited road network frequently disrupted by monsoons and landslides and air transport that is costly and limited. The transport problems create cost disadvantages for many business activities, particularly in the more remote central and northern parts of the country.
7. Limited links with outside world markets.
8. Lack of industrial institutional support mechanism.
9. Lack of smooth credit flow mechanism to SME sector.
10. Power shortage during winter as the generation drops to almost one fifth of installed capacity.
11. Limited land for development of new industrial areas.

Threats

1. Products made in Bhutan may face fierce competition as China and India, the two closest neighbours, have highly developed mass production manufacturing base.
2. The sensitive ecological balance in Bhutan's large forest area may be disturbed by population and enterprise growth.
3. Rural-Urban immigration
4. Reduced agriculture land due to expansion of business and industrial activities.

E Policy Recommendations

E.1 Dzongkhag Level

This report provides the resources inventory compiled at Dzongkhag level and summed up at national level, analyzing the available resources, which can be considered useful in future investment strategies. However, it has been observed that multiple agencies are involved in data management, and updating of information at Dzongkhag level is still an uphill task for the local administration.

The policy recommendations are detailed at Dzongkhags as well as National level considering the resources inventory, analysis, present status and possible investment opportunities. The rationale behind the need for policies is the logical exploitation/ development of the identified resources in terms of investments to fully utilize them at Dzongkhag as well as National level. The policy focus recommends the Government intervention, sectoral planning needed, issues and recommendations for overall sector development.

E.1.1 Overall Policy Focus

1. Rather than spread the resources thinly all over the country, islands of excellence be created in select Dzongkhags (as proposed in section E 1.4).
2. Knowledge corridors be developed along the major highways in the country, one each in Eastern, Central and Western regions.
3. Two sectors be declared thrust sectors in each year of the Plan and those sectors be developed with additional support/commitment in that year.
4. Product specific zones (in line with the resource hub concept in section E 1.4) be set up at the Dzongkhag level for value adding processing activities.
5. The most backward Dzongkhags be notified as economically backward and entrepreneurs provided incentives for setting up industry, such as capital subsidy, power tariff and tax subsidy and tax holidays. Encouragement be provided for setting up of vocational training institutes in the private sector. Gasa, Dagana, Zhemgang, Lhuentse, Pemagatshel and Trashigang fall in this category.
6. Thrust be given to development of investment potential and entrepreneurship in the local population in some of the Dzongkhags, by providing infrastructure support for connectivity with the developed Dzongkhags, telecommunication and internet connectivity, business information and support services, vocational training institutes and other modern amenities. It is recommended that Government consider development of these Dzongkhags by declaring them as special development zones and providing special development incentives, low interest financial instruments, and tax benefits for investment in these special zones. These Dzongkhags are: Haa, Punakha, Wangdue Phodrang, Tsirang, Sarpang, Trongsa, Bumthang, Trashigang and Mongar.
7. A Food Processing Policy be formulated and enacted to govern safety, quality and standardization issues such as harmonization of standards (a must under GATT).
8. A higher level of commitment be made by the University and technical institutions to Research and Development activities, by way of setting up model farms for demonstration of farming techniques and localized farm mechanization technologies.
9. A task force be set up to develop a long term agriculture and food export plan.
10. Aviation be given more importance to increase national and international connectivity. The feasibility of helicopter or small ATR plane services be undertaken for improving the connectivity in each region in addition to the road network.

E.1.2 Plan of Action

For framing a resource based investment plan, the following plan of action is suggested:

1. Identification and mapping the scarce resources available in each district.
2. Identification of bottlenecks in the local context, (including physical, administrative, logistic or even cultural obstacles to resources collection) due to the limitation of human resources or lack of entrepreneurial zeal or non-availability of technical inputs.
3. Reduction of bureaucratic procedures, interventions and resultant costs.
4. Supply of trained human resource for production and business processes, through technical schools and field training programs.
5. Establishment of small business incubation centers in each district for promotion and development of specific resources (e.g. promotion and training for organic produce, or for increasing mushroom production etc).
6. Promoting utilization of non-wood resource such as, medicinal plants, floriculture and other low volume high value resources listed earlier.
7. Identification of potential clusters and the design of pilot projects for their development, with the help of experts from Micro and Small Enterprise Development Board (Suggested in F1.3).
8. Development of collaboration between clusters by linking local entrepreneurs, trade and industry representatives, institutions and firms to national networks.

E. 1.3 Recommendations for Policy Framework for Micro and Small Enterprise

During the study need of separate policy frame work for development of micro and small enterprises has emerged as the resources are small in nature and scattered and first level of value addition can be done at gewogs level. There is immediate need for sustainable Micro and Small Enterprises Development programs for assisting disadvantaged entrepreneurs in exploiting scattered resources, creating jobs, generating income, building assets, and enhancing business skills. It is suggested that a Micro and Small Enterprise Development Division is created under the MoEA with the following goals:

1. To ensure that entrepreneurs across the country have access to information regarding high quality micro-enterprise development services.
2. To provide support services for:
 - Marketing
 - Outreach and Assessment Business Training
 - Business Consulting
 - Coaching and Mentoring in Micro Lending
3. To create funding mechanism with an initial corpus and later developing it into a self-sustainable model.
4. To develop Micro and Small Enterprise development service providers across the country who have up-to-date knowledge of the investment potential in their regions and are able to provide quality services through a coherent framework for the provision of these services.
5. To create a rural commercial exchange service to provide investors at the local, regional, and national levels, an effective mechanism, for identification of opportunities for alliances with an existing SME or alliance with other entrepreneurs in the value chain from hinterland to market.
6. To initiate cluster development programmes by establishment of linkages between micro and small enterprises through the creation of platforms for dialogue, such as meeting places, encouragement and facilitation of networking, support to external connections, export networks and coordinated purchasing, promotion of cluster identity and awareness through support to the creation of joint cluster brand, and joint marketing initiatives for external and internal promotion.
7. New model for development be proposed with public-private sector participation as the focus. A variety of private sector participation options are available viz. service contract, management contract, lease, build operate transfer etc. where the asset ownership, operations and maintenance, capital investment, commercial risk etc. are accounted for accordingly. The various stakeholders could be the Government, consumer, shareholder /equity provider, lender to ensure smooth functioning of the project.

E. 1.4 Dzongkhags Regional Centers

In each of the three regions (Western, Central and Eastern), Dzongkhag Centres could be established for the following specific functions:

- Administration of the resource base (human, agriculture, livestock, horticulture and non-wood) with regular and accurate data collection, and close monitoring of trends.
- Development of the resources on a sustainable basis to pre-set targets for each Dzongkhag.
- Provision of entrepreneurship training for micro and small industry projects (see section E 1.3).
- Development of industry and services clusters.
- Strengthening social and economic linkages from hinterland to market.
- Provision of higher-level services, such as libraries, banking services, retail financial services.
- Provision of training on marketing and market requirements, product quality, and vocational training.
- Development of rural business hubs for specific resources (to promote wholesaling functions).

E.1.5 Dzongkhag Employment Exchange (DEX)

It is suggested that employment exchanges are set up at the Dzongkhags Regional Centers, as a regional exchange. This pilot project should be funded for the duration of three years, after which the DEX would be expected to meet its own operational costs, with any financial shortfall supported by the Royal Government. DEX is proposed to provide the following services:

- Placement services
- Job-based counseling services
- Facilitation of skills and entrepreneurship training
- Financial support for undertaking skills training
- Provision of information on various vacancies, job forms, related books and stationary items
- Support facilities related to self-development and job placements

The project should aim at creating a 'self help' model at the dzongkhag level, which will bring about qualitative changes in the present state of affairs, through change in attitudes and bridging the gap between the market demand and supply of the human resource. The following additional benefits are envisaged:

- Addressing employment needs of the "previously unaddressed".
- Creation and development of financially viable Rural Employment Exchange.
- Support base to the unemployed, from skills development training to linking them with suitable job vacancies in the market.
- Increase in the skilled human capital in Bhutan.
- Making the economy more vibrant.
- Marriage of supply of skilled human resources and market demand.
- Gainful employment of the rural unemployed.

E.2 National Level

The Royal Government has long been the main driver of economic growth in Bhutan, but it recognizes that this must change, with the private sector gradually taking on an increasingly important role in driving growth and development of the national economy.

For long term planning, government has to create an enabling environment for the private sector to provide inputs and services at Dzongkhag level. This is vital for the development of linkages through which the resources / raw materials at the base to progress to the top, with value addition at each stage and rising finally to the top, to compete in the international marketplace. The government needs to invest in creating this support infrastructure and widen the scope of existing support institutions to cover emerging issues for creating an environment for private sector investment.

Economic development of Bhutan as measured by GNH (Gross National Happiness) will also require investment and capital formation. Investment may be either from the internal capital formation of Bhutan or has to come from abroad either in the form of grant, aid, loan or FDI. Another important factor is that investment does not only mean fund inflow but also inflow of technology, knowledge and expertise without which, investment in capital projects will not be fruitful. Foreign Direct Investment is generally seen to be the most important form of investment that brings together the required capital fund and also technology, knowledge and expertise.

In the concept of 'Gross National Happiness', 'Gross' reflects "totality and holistic" approach, 'National' refers to Bhutanese Nationals across classes, and 'Happiness' refers to prosperity and fulfillment within the cultural, social and environmental boundaries. Thus, the concept of GNH is more totalistic and holistic in terms of approach and it relates the focus of the development of the country to the fulfillment of the aspirations of all the nationals of Bhutan across the board, while promoting and preserving the rich social, cultural and environmental possessions of Bhutan.

The concept brings a paradigm shift in the focus orientation of Government policies from the money side to the human side of development. The concept is unique, distinctively Bhutanese and new in the conventional theories of development economics. The concept has its roots in Bhutan's Buddhist tradition that human suffering can be avoided by the adequate provision of satisfaction of four necessities viz. (1) food (2) shelter (3) clothing and (4) medicine, but the ultimate satisfaction/ happiness is attained through a sense of material detachment and spiritual fulfillment.

Gross National Happiness does consider economic growth as an important first step. Economic growth as measured by GDP is a precondition for attaining governance, social and cultural standards, environmental conservation and the overall happiness. Thus, GDP is an important means for achieving higher goals. The challenge is to strike a balance between material and non-material dimensions of development. It is also to be noted that the concept of Gross National Happiness is a dynamic one and is evolving with time, keeping the main focus on human development and environment. Gross National Happiness must be translated into a model so that conventional GDP can be translated into non-material components of development contributing to national happiness and well being and this process must ensure that non-material aspects are not overwhelmed by the negative forces of modernization.

For strengthening one of the pillars of GNH, namely the sustainable socio-economic development, policy review and reorientation based on the strengths of the economy is seen imperative. The following sections provide focus areas for policy adjustment.

E.2.1 Policy Framework for FDI.

FDI inflows are an utmost necessity in Bhutan for bringing about economic, human and social development and environmental preservation. Since grants and aid are eventually going to dry up, FDI and internal capital formation are the only sources for attaining economic growth. The policy, however, needs to be unidirectional towards achieving GNH within Bhutan, without imposing the same on investors.

For Bhutan, the quality of FDI will be equally important as its volume. The Policy should target FDI which has the potential to create economic growth rather than a mere transfer of funds per se. At the overall policy framework stage, a successful FDI policy must have strong linkages with domestic trade reforms and a real focus for privatization. For a country like Bhutan, which is a late starter, it would be easier to attract FDI if it concentrates on the comparative advantages while maintaining its unique characteristics.

Among LDC's (Least Developed Countries), Bhutan has some positive characteristics that can attract some type of investors. Bhutan has to package these positive characteristics in a deliverable form before the investors without any strings attached. Given Bhutan's core strength of political stability, lower corruption and very small population, it is quite certain that economic development will follow if a stable level of FDI inflow in the relevant sectors can be attracted.

Broad Suggestive Policy for FDI

There is no clear-cut success formula in case of FDI attraction due to the existence of too many factors, both internal and external, affecting FDI flows. However, the result can always be positive if the direction is one-way. There should be an all round effort to project Bhutan as a "Best FDI Destination among Land-locked Countries" before the foreign investors and this lineage needs to be maintained in the years ahead. The following policy points are suggested for attracting FDI:

1. Create Industry Promotion Packages to Tap Immediate FDI Potential

A tax and regulatory relief package and structuring of Tourism Development Zones and industrial estates should be given top priorities. Government should plan non-fiscal incentives to provide private estate developers the attractions to commit finance and to solicit new manufacturing investment. The conditions for attracting new investments need to be created.

2. Land Ownership

Land should be made available in the Tourism Development Zones and in Industrial Estates. Land should be given on long-term lease.

3. Change of Attitude in the Government and at the Industry Level

Government should realize that foreign investor would like to do business and earn profit only when they find that the business environment is congenial. They are ready to follow ideology and all national reservations if their own interest is taken care of. Investor friendly attitude should be projected before the international investor forum. The Government should understand that its role is to create an enabling environment. In this regard, Government should organize symposia to educate the local investors in collaboration with BCCI, on the opportunities, to encourage local participation.

4. Chamber of Commerce & Industry needs to be strengthened.

Bhutan Chamber of Commerce & Industry has to play a crucial role in attracting FDI and educating its members. Country specific forum need to be established for attracting FDI from each country and these fora should be used as the investment corridor with that country. Industry specific forum also need to be prepared for information dissemination, review and monitoring, establishing incentives and collating data.

E. 2.2 National Level Policy Framework and Recommendations for Investment

E. 2.2.1. Policy Focus for Agro-Industries

Agriculture is the mainstay of Bhutan's economy with 69% of the population dependent on agriculture. Rather than subsistence agriculture as is the practice today, the concept now needs to be of integrated agro-business. The diverse agro climatic conditions in the country are particularly favorable for taking up production of wide variety of fruits, vegetables and crops all round the year.

Proper infrastructure and adequate forward and backward linkages need to be created with commercial marketing of food processing enterprises, so that better value for crops is received and the farmers are empowered. These linkages will also ensure that the commercial enterprises equip the farmers with best seeds, technology and farming equipments in the enterprises' own interest. In other words, contract farming can be encouraged.

The areas for studies and consideration to develop this sector are indicated in the "suggested strategy" below:

Suggested Strategy:

- A focused strategy for the development of agro-infrastructure facilities is needed, as for world class storage facilities, good and fast transportation, state of art Mandis with warehousing facilities, quality testing facilities, grading facilities in fruits, vegetables and other agro produce as per international standards and with appropriate certification, as these would strengthen the brand name 'Bhutan' around the world.
- The issue of increasing agricultural productivity needs to be addressed.
- The government needs to identify floriculture as a sunrise industry and accord it 100% export oriented status. There is a need to fill up the gap in technology and marketing to reduce wastages and increase value addition. There is a steady increase in the demand of medicinal plants and herbs in the global pharmaceutical industry.
- Establishing an agricultural university with state of art R & D facilities could be given priority.
- Development of agro-infrastructure encompassing the total infrastructure required for the production and transportation of food and agricultural produce, from "farm gate to food plate" and includes:
 - Input infrastructure
 - Harvesting and storage infrastructure
 - Processing infrastructure
 - State of art transportation and logistics infrastructure to ensure proper post harvest management

- Agro-service centers/ information kiosks be developed on sponsorship basis; costly farm equipment can be pooled between small landowners at these service centers.
- E-Kiosks through suitable arrangement with Bhutan Post - one stop shop for farmers may be encouraged. This will ensure returns to private players.
- Encourage agro-biotechnology research for better high yielding seeds to increase productivity through the agriculture extension centers and RNR centers.
- IT be used in agro-business information dissemination on world market trends, demand - supply positions, supplier database, e-commerce etc.
- Branding exercise for 'Made in Bhutan' is essential for better price and acceptability.
- Marketing of exotic vegetables with commercial tie-ups with organized fruit and vegetable marketers should be explored.
- Cooperative marketing should be encouraged in the agriculture and horticulture rich Dzongkhags.
- Policy initiatives to enable processors to go into strategic tie ups with markets abroad.
- World class Packaging Institute could be set up at Bumthang / Paro.
- Education to farmers is needed on international quality norms & standards, export procedures, technologies etc.
- A Technology Mission could be set up at the National level to facilitate adoption and adaptation of existing foreign technology and development of industry with most modern technology of international standards.
- Priority finance is made available to this sector.
- A National Policy for food processing industry with institutionalized set up for grading etc. is needed.
- Technology up-gradation fund could be initiated.
- Farmers, policy makers and scientists should be encouraged to go for lateral exchange of information with other countries.

E.2.2.2 Policy Focus for Tourism

Tourism is a composite services sub-sector, which needs a combination of infrastructure and related services, starting from publicity to generate tourist demand, transportation services, hotels and restaurants, entertainment services, guides and travel agencies, telecom services, handicraft and curio marketing, to shopping facilities.

The government should envisage creation of a tourist circuit in each region through the development of specialized clusters and other architectural / spiritual / Buddhism renovations, thereby promoting and enhancing livelihoods of the rural population. Government support should aim to

- Develop tourist spots in each Dzongkhag.
- Develop related handicraft & cultural clusters already existing in the region.
- Create a collaborative polygon for bringing synergy in utilization of various resources for successful implementation of the above mentioned two activities.
- Promote employment through interaction of local handicraft/artisan clusters with tourists.

In the development of tourist infrastructure, the focus areas are:

- Renovating the tourist places/spots.
- Providing basic infrastructure facilities, like drinking water, sanitation, communication, first aid care, resting places, roads and power supply.
- Creating a tourist recreation-cum-shopping complex.
- Development of rural business hub.

Other areas that could be undertaken are:

(i) Development of Integrated Tourism Circuits

It can be described as a route covering every place of interest in and around a particular set of Dzongkhags/ towns / important tourist places, which may or may not be well connected by road. The places in a circuit can be visited one after the other and finally reach the starting point or shift to another Tourist Circuit.

The key features of these circuits could be:

- Natural component preservation
- Indigenous cultural preservation
- In-built system for waste disposal

(ii) Market Development

- Setting up handicraft and curio selling points.
- Development of brochures on tourist circuits.
- Creating a website for displaying the products.
- Creating a market information cell for handicraft-related products to expand market.
- Facilitating artisan participation in exhibitions at national and international levels.

(iii) Product Development

- Promoting new and improved designs in handicraft products.
- Diversifying into making products that caters to the buying capacity of tourists and enables easy carry and transportation of the handicraft products.

(iv) Institutional Development

- Stress and focus on community mobilization.
- Strengthen artisan's association to enable collective business activity.
- Organizing and strengthening village committees on tourist routes to offer the rural social and cultural experience to the tourists.

(v) Human Resource Development

- Imparting training to unemployed youths, women SHGs (Self Help Groups) and village leaders on skills that would cater to providing the required services to the tourists.
- Identifying entrepreneurs and facilitating the start up of their tourism supporting businesses.
- Organizing exposure trips to successful associations of artisans, thereby developing their capacities.

For successful implementation of the activities listed out in the previous section, it is necessary to collaborate with different agencies having expertise and resources commensurate to the particular aspect of work needed.

E. 2.2.3 Policy Focus for Development of Human Resource

Bhutan is a labour deficit country. Unlike the economies of its South Asian neighbors characterized by surplus labour exported to other countries, Bhutan has to depend on other countries, particularly India for its requirement of semi-skilled and unskilled labour, especially in construction, mining, agro-based industries and hydro-power projects.

This traditional dependence on Indian labour and the recent growth of Bhutanese labour could have cultural, economic and political implications on Indo-Bhutan relationship. Small population inhabiting villages that are scattered and remote has led to the development of a special kind of labour exchange system among Bhutanese peasants. In fact, the nature and variety of labour exchange arrangements are a cohesive factor in community cooperation and organization.

Traditional economy was solely dependent on subsistence agriculture. The compulsion to produce enough from limited resources of land and labor, in order to meet requirements not for consumption alone but for other social and religious necessities, made peasants rely upon each other and develop arrangements, so that the farming needs of every household in the community are completed within the seasonal cycle of plantation and harvest. However, the nature of demand of the business sector is totally different from that of agriculture wherein it requires specific skills and full time engagement. Even within the sector, the demand for skills is different for each type of business. As such, focused development of human resources is a prerequisite for the growth of different businesses.

The following are the sector wise human resource competency needs and policy recommendations for achieving sustainable development of human resource. Human resource development has to be the key focus for investment opportunity plan in Bhutan as it is the scarcest resource.

E. 2.2.3.1 Trading Sector:

The main competencies required by the trading sector are as follows:

- Research and managerial capabilities.
- Report writing and evaluation capabilities.
- Improved functional knowledge in areas such as sales, marketing, production, distribution, inventory and quality control.
- Knowledge and skills of cost accounting, financial management, engineering and enterprise management.

E. 2.2.3.2 Hospitality

The hospitality sector includes tourism, hotels and handicraft businesses. This sector has grown rapidly in recent years, mainly due to increase in inflow of tourists attracted by the unique culture and pristine environment. The experiment on 'high value' tourism has proven to be very successful both in earning foreign exchange and preventing erosion of cultural values and environmental degradation.

With the Royal Government's policy to liberalize the sector and promote it as one of the thrust areas in the Ninth Five Year Plan, there is ample scope for expansion of the industry. This sector is seen as a major source of employment. Eco-tourism, culture tourism and adventure tourism would undoubtedly do exceptionally well. Though this sector is fairly old, having been established 30 years ago, the sector is also riddled with numerous constraints. Besides communication (road, air and telecommunication), services, finance and banking, lack of new products, lack of community participation, low and uneven standards of tourist accommodations and lack of private sector investment, especially in the east, impede the growth of the sector.

Among others, lack of qualified and skilled human resources is the most serious impediment to the growth of the sector. Therefore, in order to make this sector grow, institutional capacity, quality of services and skills need to be built up while improving information and publicity.

The main competency requirements of hospitality sector are:

- Trained professionals in tourism, hotel management, administration, marketing, research & planning, finance & accounts, human resource management etc.
- Qualified and skilled human resource in business management, administration, marketing, product design and development.
- Capability to monitor, train and provide advisory services.
- Environmental evaluation.
- Skilled personnel in front desk management, house keeping, catering, waiting, guiding etc.

E.2.2.3.3 Media, Communication and Transport

The mountainous and difficult terrain and climatic conditions varying even within short distances have resulted in isolated communities. This necessitates the need for good communication facilities for socio-economic development. Media and communication is vital for disseminating information, developing human relations and providing interactions, thereby facilitating the overall development in the country.

Communication sector is one of the fastest growing industries in the world and is also the most dynamic in modern economies. Technological developments constantly drive rapid change in customer demands, increasing and diversifying them. These developments impact the market scenario which is rife with alliances, partnerships and competition. The sector also provides varied range of employment opportunities in the form of private production houses, internet cafes, PCOs and other related areas. The transport and communication sector is projected to grow on average by 12% per annum.

Though the print media in the country was introduced in late 60's and radio in the 70's, television and Internet were introduced only in 1999. The communication sector, being new, lacks skilled manpower. On the other hand, the sector is expected to cater to sparse population meeting the public service objectives, universal access obligations that further increase the operating cost. The Government in the Ninth Plan has given due importance to infrastructure development in improving nation wide quality television and radio programmes.

The main competency requirements in the sector are the following:

- Administrative and management skills in the areas of management, planning, financial management, human resource management and material management.
- Professional and technical skills in the areas of: RF and satellite engineering, video & sound engineering, archive management, network/Web-site administration, art and graphics designers, socio-anthropologist, legal/copyright experts, documentary video productions, still and moving photography and journalism.

E. 2.2.3.4 Power Sector

Having started early in human resource development geared towards this sector, much headway has been made in building planning, management and monitoring capacities of this sector. Still, the sector is constrained with shortage of professional human resources, particularly in certain critical areas, such as power construction, distribution, transmission, generation and financial management. This has compelled the sector to recruit and employ a large number of expatriates, particularly in construction.

Most of the power construction projects are managed by expatriates with Bhutanese employed mainly in mid-level managerial administrative positions, for the simple reason that Bhutanese with the required qualifications and experience are not available.

As the country endeavors to harness the vast hydropower potential, power projects will continue to dominate the development activities. This necessitates the development of the human resource for the power sector to meet the demands of the mega hydropower construction projects.

The main competency requirements in the power sector are:

- Competence in legal, engineering, management and technical services.
- Introduction of modern tools of management like computerized operational system and information technology (system designer, computer operator).
- Vocational training in heavy earth moving equipment and heavy machinery maintenance.

E. 2.2.3.5 Production/Mining Sector

The country is endowed with rich resources that must be suitably harnessed. The producers, who are still in the initial growth stage, are struggling to survive in the face of competition, especially from the neighbouring countries from which the kingdom imports about 90% of goods and services. The mining sector too, has a good growth potential with improvements in technical know-how. It is expected that the production sector would grow by 4.9% and mining by 10.7% per year.

The manufacturing and production sector is dominated by a handful of large and medium sized enterprises but the majority is small scale. The large enterprises, to some degree are organized and staffed with qualified and experienced personnel; the small-scale ones are dominated by semi and unskilled foreign workers. There are no business plans, nor any plans for the development of the human resource at the industry level.

The production sector requires the following broad categories of competencies:

- General administrative and managerial skills in the areas of business management, office management and effective supervision.
- Professional skills in planning, designing, marketing, research, finance, accounts, materials management and total quality management.
- Technical skills in the areas of environmental impact assessment and production management.
- Training of Trainers (TOT) skills to train people within the enterprise.

E2.2.3.6 Construction Sector

Bhutanese contractors are yet to participate in the major development activities. Till date, Bhutanese construction firms have been undertaking only small projects due to lack of experience to handle major construction projects. This is further compounded by lack of skilled manpower. The construction sector has expressed desire and aspiration to participate more and more in the future major construction projects through joint venture with established foreign construction firms. The construction industry today employs mostly manual processes requiring mainly low-skilled manual workers. The largest percentage of the 50,000 foreign workforces is employed in the construction industry.

The construction industry continues to face human resource constraints ranging from engineering to unskilled labourers. There is a catch 22 situation in the construction industry, where mechanization is not possible for lack of skilled personnel and the industry is unattractive to Bhutanese workers. However, lack of adequate number of skilled workers such as carpenters, masons, electricians, plumbers, heavy machine operators and heavy vehicle drivers, continues to be the major problem in this sector.

As the Royal Government continues to promote up-gradation of technology in the construction industry through mechanization, human resources geared towards meeting the immediate and future needs of the industries must be developed. Further, there is also a need to build human resources to meet the needs for specialized construction such as hydropower projects.

The main competency requirements in the construction sector are the following:

- Administrators and managerial skills in the areas of general management and administration and human resource management.
- Professional and technical skills e.g. in the areas of civil engineering, electrical engineering, mechanical engineering and environmental engineering.
- Craft & related skills like carpentry, masonry, plumbing, painting and skilled personnel to operate plant & machineries.

E 2.2.3.7 Finance Sector

Financial institutions, be it in banking, insurance or providing financial services, play a catalytic role in the socio-economic development of any nation. The role played by the financial institutions can be measured by the development achieved in all sectors over the last two decades. Further, one of the institutions, as the sole insurance company in the kingdom has been instrumental in the development progress by providing protection against unforeseen and unpredictable circumstances, as well as old age security. This latter responsibility has now been transferred to a newly established National Pension and Provident Fund. The Financial Institutions need to play an important role with major development projects in pipeline.

The main competency requirements in the financial sector are:

- Professional administrators/managers.
- Professionals skilled in underwriting, system analysis, computer programming, feasibility study, project appraisal, investment analysis.
- Human resource management.
- Financial /Accounting.
- Legal personnel (law interpretation, advocate legal cases, framing and revision of laws and national acts, rules & regulations of the agencies)
- Technical personnel in computer operation and office management.

E 2.2.3.8 IT Sector

Information technology offers considerable possibilities for increasing efficiency and transparency. Therefore, information technology is one tool that the country should take full advantage of. The enormous opportunities that exist in IT and related field should be encouraged and promoted. The private entrepreneurs, institutes, schools and other interested individuals should be encouraged to participate in the promotion of IT sector and development of appropriate standards, to ride the information super highway that will provide the country with access to the same information and data as those residing in the most technologically advanced nations.

The main competency requirements in the IT sector are:

- IT professionals skilled in Software requirement study documentations preparations
- Professional for networking and hardware
- Professional for advanced IT skills like software development
- BPO / ITES skills at various levels
- Database developers, network administrators and web developers
- Better infrastructure in the Dzongkhags for accessibility and speed of the Internet

National Level policy framework thus has been given covering sectoral policy recommendations including the FDI. The areas like agriculture and tourism are covered in detail for sustainable development of agro industries and tourism. The other important area, namely human resources sectors provides the direction for future development of human resources for sustainable growth of the sectors.

F Projects for Further Detailed Study

During this study, meetings were held with staff of the various Ministries and Departments at Thimphu followed by visits to Dzongkhags and meetings with Dzongdags, Dzongrabs, Planning officers, Agriculture officers, Thromdhe Thuemi, BCCI members and other trade and industry representatives, for resources identification and mapping, as well as obtaining investment ideas at Dzongkhag level. The following is a comprehensive list of investment opportunities in Manufacturing, Services and Trade at the National Level. This list is formulated on the basis of :

- Availability of natural resources as already identified in the preceding chapters
- Observing the need for the products or services not available with ease or locally
- Requirements of the new generations as fuelled by travel and exposure to TV and other media

Based on the compilation of existing resources, assessment of future potential, and countrywide SWOT analysis, the following project ideas emerged. **It may be noted that these are purely “project ideas” and should not be construed as recommended projects for implementation. It is imperative that prospective investors undertake detailed project study before making investment.**

F.1 Manufacturing Sector

(Note: The highlighted and underlined items are those projects, which have been taken up in the list of Ten Prioritized Projects.)

F.1.1 Agriculture Based

- Seeds
- Tissue culture
- Agro shed / Greenhouses
- Organic cultivation & processing

F.1.2 Agro & Food Processing

- **Post Harvest Processing**
 - ❖ Farm level handling
 - ❖ Cold storage
 - ❖ Cold chain
 - ❖ Packaging
 - ❖ Storage & preservation
 - ❖ Ripening chambers
- Mushroom growing and packaging
- Exotic vegetable cultivation
- Flour mill
- Cereal processing & pulse milling
- **Breakfast Cereal**
- Fruit & vegetable processing
- Dehydrated vegetables
- Fruit Juice and pulp
- Soya milk & tofu paneer
- Bread and bakery products
- Soda, soft drink and energy drinks
- Oils and fats
- Spices grinding & packaging
- **Spices oleoresin**
- Ready to eat noodles
- Ready to eat curried vegetables
- Maize flakes
- Snack foods (Local specialties)
- **Snack foods (Potato chips, flakes and French fries)**
- Processed & canned Items (Pickles, jams etc.)
- **Dairy products (Milk, flavored milk, cheese)**

- Butter, whey, ice cream, sweets
- Rice milling and bulk packaging
- Confectionery products
- Mineral Water

F.1.3 Floriculture

- Tissue culture
- Flower plantations
- Flower essence extraction
- Bee-keeping & honey production

F.1.4 Livestock

- Dairy farm
- Yak meat
- Poultry products
- Piggery products
- Beef
- Fishery
- Sun-dried yak meat and beef

F.1.5 Mineral-based Industries

- Plaster of Paris
- Mini cement plant
- Grit /Aggregates
- Talc powder milling and bulk packaging
- **Magnesium carbonate and calcium carbonate from dolomite**
- Gypsum tile and boards

F.1.6 Fast Moving Consumer Goods

F.1.6.1 Cosmetics & Beauty products

- Toiletries : Toilet Soaps, Washing Soap & Detergents / Washing Powder
- Hair care products : Shampoo, Conditioner & Hair Oil
- Skin care products : Herbal skin care cream, winter lotion & Moisturizing Cream
- Oral care products : Tooth Paste, Tooth Brush & Mouth Freshener
- Other beauty products : Fragrances & Talcum Powder

F.1.6.2 Home Care Hygiene Products

- Phenyl, Toilet cleaner, Broom & Floor sweeper
- Herbal Utensil cleaner
- Plastic Buckets, Mugs and Small items : (to utilize spare injection moulding capacity)
- Incense
- Toilet Paper

F.1.7 Power Generation & CDM Projects

- Micro/mini Hydel Power Plants
- Large scale hydro power projects
- Combined Cycle Gas Turbine Power Plants for winter peak demands
- Bio Mass Power Projects (Municipal Waste based)
- Community CDM Projects

F.1.8 Medicine & Pharmaceuticals

- Traditional chinese medicine (Cordyceps)
- Traditional medicinal products
- Ayurvedic medicinal formulations
- Herbal products
- Bandage, sanitary napkins, surgical cotton and First Aid items
- Disposable Syringe
- Blood bags
- Gloves
- Doctors apron
- First Aid Box kit for villages

F.1.9 Hosiery and Ready-made Garments

- Under garments
- Towels and napkins
- Ready-made garments
- Socks
- Wind cheaters
- Mufflers
- Traditional dress outfit

F.1.10 Textile

- Vegetable dyes
- Cotton yarn dyeing
- Fashion accessories like bags, belts etc
- Made ups
- Textile screen printing
- Track Suit
- Interlock knitted fabric

F.1.11 Natural Healing & Spiritual

- Fragrance and Aromatic Products

F.1.12 Construction

- Ready to mix concrete
- Pre-cast concrete components
- RCC spun pipes
- Mosaic tiles
- Pavement interlocking tiles
- Cement paint
- RCC electricity poles
- PVC pipes
- Brick
- Sawdust briquettes
- Roto molded tanks

F.1.13 Wood-based Industry

- Sports Goods
- Furniture
- Construction Wood
 - ❖ Cladding
 - ❖ Doors and windows
 - ❖ Flooring
 - ❖ Panels
 - ❖ Wood-based Composite Building Materials
- Plywood
- MDF boards
- Timber seasoning kiln (Solar)
- Briquette of agro waste
- Fuel Wood

F.1.14 Non-Wood (Agro Forestry)

- Vegetable oil
- Bio-diesel (Kadamb non-edible)
- Bamboo & cane furniture
- Resin
- Fiber & Floss mattresses
- Volatile oils (Essential oils - used in soaps and cosmetics, pharmaceuticals, confectionery, aerated water, scented tobacco and incense)
- Wood Oils (Pine-needle Oil, Agar, Cedar, Champ, Calamus, Keora etc.)

F.1.15 Miscellaneous Products

- Hand-made paper products
- Plastic molded products
- Plastic disposable items
- Tarpaulin & rain coat

F.1.16 Packaging Industry

- PET bottle plant
- Corrugated box
- Craft paper bag
- HDPE bags
- Laminated pouches
- Wooden boxes
- Paper bags
- Tin container
- Moulded paper packaging products

F.2 Services Sector**F.2.1 Tourism**

- Eco Resorts and Hotels
- Restaurants
- Transport
- Tour operators
- Souvenir
- Escort Services
- Event Management
- Entertainment
- Fast Food outlets
- Highway Cafeterias and Facility Centers
- Gardens and Parks

F.2.2 Power Distribution**F.2.3 Laundries & Dry Cleaning****F.2.4 Automobile Workshops****F.2.5 Beauty Parlors, Sauna Baths****F.2.6 Ayurvedic/ Natural Healing/Rejuvenate Centres****F.2.7 EducationSector**

- Private schools
- Colleges
- Vocational institutes
- I.T. institutes
- Institutions offering Twinning Program of Foreign Universities
- Finishing Schools

F.2.8 Financial Sector

- Banks
- Insurance
- Retail financial services

E.2.9 ICT Services

- Telecom services
- E-governance services
- IT services

E.2.10 ITES/ BPO Services

- Financial services like accounting and auditing
- Data processing
- Back office services
- **Business process outsourcing services**
- International trade advisory
- Legal advisory

F.2.11 Media & Entertainment

- **Digital animation studio**
- Multiplexes with gymnasium and sauna

F.2.12 Postal & Courier

- Parcel courier services at the gewog level

F.2.13 Research & Development

- Diagnostic laboratories
- Industrial and environment (Emission) testing laboratories
- Bio technology
- Medicinal plant and drug formulations laboratory
- Quality and standards
- Food testing laboratory

F.2.14 Support Services

- Industry specific vocational training institutes
- Industrial tool room & training center
- Food craft institute
- Wood craft & furniture design institute

F.2.15 Transport & Logistics Services

- Passenger transport services
- Rest Facility on highways
- Transport infrastructure and facilities
- Freight and Goods Transport
- Helicopter and/ or ATR services

F.2.16 Medical Services

- Specialized clinics
- Diagnostic services
- Mobile Emergency Units

F.3 Trade Sector**F.3.1 Showrooms and Branded Goods Shops**

- Manufacturers' showrooms for agricultural and farm machinery
- Manufacturers' showrooms for house building and home furnishing products
- Sweets (Bhutanese and Indian) shops

F.3.3 Bhutanese Ethnic Souvenir & Artifacts Branded shops

- Low cost location souvenirs in pottery or wood
- Bhutanese carpets
- Bhutanese national dress
- Bhutanese dolls and masks
- Picture postcards, handmade paper products