



REPORT ON
PUBLIC ENVIRONMENT EXPENDITURE ANALYSIS
OF THE ROYAL GOVERNMENT OF BHUTAN
FOR THE 9TH FYP PERIOD

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CONTENTS

EXECUTIVE SUMMARY	1
CHAPTER 1: ENVIRONMENT SECTOR OF BHUTAN	4
1.1 Country Background	4
1.2 Macroeconomic Performance	4
1.3 Environment Sector in Bhutan	5
1.4 Forest and Nature Conservation	5
1.5 Institutional Structure related to Environment	6
1.6 Key Environmental Issues	8
1.7 The Present Assignment	12
CHAPTER 2: PUBLIC ENVIRONMENTAL EXPENDITURE ANALYSIS METHODOLOGY	13
2.1 Introduction	13
2.2 Methodology of PEE Analysis	16
2.3 PEE Analysis	22
CHAPTER 3: PUBLIC ENVIRONMENTAL EXPENDITURE OF BHUTAN	23
3.1 General Outcomes	23
3.2 Institutional Classification	25
3.3 Environmental Domain Classification	26
3.4 Economic Classification	28
3.5 Expenditure Performance of Environment Allocation	33
3.6 Donor Financing of PEE	35
3.7 Decentralization Experience	35
CHAPTER 4: FINDINGS OF PEE ANALYSIS OF BHUTAN	41
4.1 Limitations of the PEE Analysis	41
4.2 Findings of PEE Analysis	42
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS	45
List of officials met	47
Annexure 1: DEFINITION OF ENVIRONMENT FOR PUBLIC ENVIRONMENTAL EXPENDITURE OF BHUTAN	i
Annexure 2: Major Environmental Responsibilities of Identified Public Institutions	xiv

Acronym

FYP	-	Five Year Plan
GDP	-	Gross Domestic Product
HRD	-	Human Resource Development
MDG	—	Millennium Development Goals
NEC	-	National Environment Commission
NEPA	-	National Environment Protection Act
NGO	-	Non Governmental Organization
NSB	-	National Statistical Bureau
NWFP	-	Non Wood Forest Products
PEE	-	Public Environmental Expenditure
R&D	-	Research and Development
RGoB	-	Royal Government of Bhutan
RNR	-	Renewable Natural Resources
RSPN	-	Royal Society for Protection of Nature

EXECUTIVE SUMMARY

An assessment of the 'Public Environmental Expenditure (PEE)' of the Royal Government of Bhutan (RGoB) during the 9th Plan period was commissioned by the Department of Public Accounts. It was financially supported by the UNDP and UNEP through one of its project - 'Bhutan Poverty and Environment Initiative (PEI) Project'. The main objective of the assessment was to understand the trends of public expenditure in environment and to obtain critical information for streamlining and strengthening future investments in environmental programs, project and activities. The scope of the study included a review of public expenditure in the environment and natural resources sector, encompassing expenditure incurred by ministries, government departments and other agencies and the local administration at the Dzongkhag and Geog levels on environment related interventions along with all donor supported projects of the environment sector.

Before conducting the analysis, an appropriate definition of 'Public Environmental Expenditure', applicable to Bhutan was discussed and prepared. Following the agreement, an identification of public institutions that are implementing environment related projects and activities were carried out. After a careful screening of all 10 Ministries of the Government, institutions under five Ministries were identified as relevant institutions that implemented environment related activities. With this information in hand, the accounting database of the Department of Public Accounts was used to list out all environment related expenditure programs, sub programs, activities and sub activities for each year of the 9th Five Year Plan. This was followed by data collection on the details of current and capital allocation/expenditure of each identified activity.

Some of the important findings of the study are as follows:

- i. The annual PEE during the 9th FYP was around Nu 1.0 to 1.1 billion, with the lowest expenditure recorded in 2004-2005 at Nu 915.3 million and the highest in 2007-2008 at Nu. 1.1 billion, at current prices.
- ii. The average PEE during the 9th FYP, as a proportion of total public expenditure, was 7.4 percent with the highest level recorded (10.4 percent) in 2002-2003 and the lowest in 2007-2008 (5.1 percent). It is observed that there has been a declining trend of PEE during the plan period.

- iii. The average PEE as a percentage of GDP has been estimated as 2.8 during the Plan period with the highest percentage recorded in 2002-2003 (3.6 percent) and the lowest in 2007-2008 (1.9 percent).
- iv. The above achievements are much higher than the performance of PEE in most countries of the world. According to information published in OECD publications, the pollution abatement and control in its member countries recorded the highest level of 1.2 percent of GDP by the Netherlands in 1992. An ODI study conducted by Neil Bird in Mozambique, Ghana, Mali and Tanzania concluded that in all four countries less than 1 percent of total government spending was dedicated to the environment sector. However, the declining trend achieved during the past several years in Bhutan is a matter of concern.
- v. According to the institutional classification, it was found that there were four institutions which accounted for about 50 percent of the total PEE of Bhutan. These were the Department of Forestry, Council of RNR Research for Bhutan and the National Biodiversity Centre under the Ministry of Agriculture and the Department of Energy under the Ministry of Economic Affairs. The above four institutions were also responsible for the utilization of largest proportion of foreign finances available to the environment sector.
- vi. The environmental domain classification revealed that lowest level of expenditure has been incurred in “soil and water conservation” sector. This is an important concern for Bhutan where more than 80 percent of the land consisted of mountains with steep slopes. It calls for action by public authorities for immediate measures to avoid possible future disasters.
- vii. Donor financing accounted for approximately 34 percent of the total PEE during the 9th Plan period. Although, several environmental projects received 100 percent donor financing, some of them underutilized the financial resources made available to them.
- viii. The 9th FYP also evidenced a successful period in its decentralization efforts. When the first decentralized budget allocation was made to Dzongkhags and Geogs in 2002-2003, the expenditure performance was low. However, the spending started to improve over the years and it reached a level of 80 percent by the end of the Plan period, which was equivalent to the performance level of central government institutions.

The analysis concludes that it is necessary to maintain the same level of PEE in the future as well. For this purpose, it is not only necessary to plan and implement new project activities by the environment related institutions but also promote other institutions to adopt environment related activities in their programs. One example would be to introduce and develop “eco-tourism”, as it presents a lot of opportunities for Bhutan.

The study also recommends the Government to look into establishing innovative approaches such as development of non-governmental institutions similar to NRDCL. Establishment of such institutions could help absorb financial resources available for environmental activities that are underutilized by the government institutions. This will help to maintain the higher level of PEE even though budgetary resources are bound to reduce due to other competing demands.

CHAPTER 1: ENVIRONMENT SECTOR OF BHUTAN

1.1 Country Background

Bhutan is a landlocked country located in the Eastern Himalayan Mountain Range between India and China. It has a total land area of 38,394 sq. km with an estimated population of 634,982 in 2005¹. The country is characterized by high mountains and deep valleys, with huge variations in altitude. Bhutan's elevation rises from 150 meters to 7,550 meters, resulting in extreme climate variation, geography and biodiversity. The country's forest cover of 72.5 percent represents a large and valuable pool of natural resources. Protected areas make up 28 percent of the total land area with another 9 percent designated as Biological Corridors. With the addition of Wangchuck Centennial Park in 2008, covering a land area of 4,914 square kilometers, Bhutan has nearly 50 percent of its total land area under some form of conservation management regime. The geographical terrain of the country explains the reason for having only 7.8 percent of the total land available for crop cultivation.

In the past several decades, the Royal Government of Bhutan (RGoB) was implementing government coordinated investment programs to achieve a sustainable economic development. Accordingly, the RGoB upheld and implemented strong conservation policies and programs. These conservation efforts were internationally recognized and Bhutan is now known amongst the top 10 'Global Biodiversity Hotspots'. His Majesty the King of Bhutan and its people received the "Champion of the Earth Award" in 2005 from the United Nations Environmental Program and also the Getty Award for "Environment Leadership" in 2006.

1.2 Macroeconomic Performance

Over the past 25 years, Bhutan's overall development performance has been impressive. The macroeconomic environment of the country has been quite sound with the Gross Domestic Product (GDP) growing at an annual average of 8.5 percent during the past decade, coupled with low budget deficits (averaging below 5 percent), low inflation rate (stable around 6 percent per annum) with high open trade regime generating a current account surplus of the balance of payments (around 11 percent of GDP in 2008). The high growth has increased GDP per capita to US\$ 1,840 in 2007 mainly driven by the growth in hydro power generation and auxiliary sectors. However, despite strong economic growth, poverty in Bhutan still remains a socially concerned issue. It stands as a rural phenomenon and,

¹ Population & Housing Census of Bhutan 2005, Office of the Census Commissioner, Royal Government of Bhutan, P 17.

according to the National Statistics Bureau (NSB), 23.2% of the population are living below the poverty line².

1.3 Environment Sector in Bhutan

Conservation of environment has always been the corner stone of Bhutan's development strategies. The document "Bhutan 2020: A Vision for Peace, Prosperity and Happiness", a twenty year perspective strategy that sets the preferred direction for where Bhutan wants to be in the year 2020, envisioned as follows.

"In terms of the state of the natural environment, the Vision 2020 is optimistic the natural environment and the natural resource endowments will still be richly intact, with 60 percent of the country forested and sizeable tracts of protected national parks and reserves harbouring an incredibly rich biodiversity, the envy of many nations. The Vision anticipates that the environmental conservation approach will be dynamic rather than static and will not merely treat natural resources as something to be preserved but as an immense asset that can also be sustainably and wisely utilized for socio-economic development."³

The Bhutan's "Gross National Happiness Philosophy", is an overarching development framework. It has already taken the environmental conservation as an integral component of country's socio-economic development.

1.4 Forest and Nature Conservation

Bhutan is an agrarian economy with almost 69 percent of the population depending on agriculture, livestock and forestry for their livelihood. Forestry plays a vital role in sustaining rural livelihoods and food subsistence. Use of natural resources, especially 'non-wood forest product' resources, remains an essential component of Bhutan's livelihood and culture. Forestry is considered as a renewable natural resource (RNR) and, therefore, people's engagement and dependence on forestry is relatively higher in the rural areas.

² Poverty Analysis Report 2007, National Statistics Bureau, Royal Government of Bhutan, P 12.

³ Tenth Five Year Plan, 2008 – 2013, Volume 1: Main Document, Gross National Happiness Commission, Royal Government of Bhutan, P 20.

Further, forests in Bhutan are vital for maintaining the sustainability of its main export earner, the hydropower industry. It also maintains the geographically fragile mountain ecosystem. As such, the government has placed high priority on protection, conservation and management of forest resource, while using it wisely. Article 5 of the Constitution of the Kingdom of Bhutan requires the maintenance of a minimum of 60 percent forest cover for all times to come as a constitutional requirement and entrusts “every Bhutanese to be a trustee of the Kingdom’s natural resources and environment for the benefit of present and future generations...”⁴. It also mandates the RGoB to ensure ecologically balanced and sustainable development while promoting justifiable economic and social development. Even in terms of institutional setup, unlike other functionaries, environment cuts across all sectors and it is fairly well structured at all levels.

1.5 Institutional Structure related to Environment

In terms of the institutional structure, environment sector delineation is widely established along the following lines:

National Environment Commission (NEC) is an independent body, established under a Parliamentary Act and it primarily deals with environmental legislation, policies, assessments, monitoring, research, information, communication and outreach. In the implementation of its authority and responsibility, it has devolved the day to day implementation of its functions to Competent Authorities under different agencies. There are Environmental Units established in various Ministries/Agencies like the Ministry of Works and Human Settlements and Ministry of Economic Affairs and the Royal Audit Authority. Apart from these, Environment Units are also established in all the Dzongkhags and they look after issues related to “Environment Clearance” for projects that fall under their jurisdiction and they report to the NEC on the activities that they implement.

Ministry of Agriculture is the overall authority for the management of the country’s renewable natural resources (RNR) sector. It is backed by three technical departments: Department of Forests, Department of Agriculture, and Department of Livestock together with few other non-departmental organizations such as the Council for Renewable Natural Resources (RNR) of Bhutan, Bhutan Agriculture and Food Regulatory Authority (BAFRA), Agriculture Marketing Services and RNR Information and Communication Services. The ministry is further supported by other programmatic institutions like National Soil Services

⁴ The Constitution of the Kingdom of Bhutan: Article 5, P 8.

Centre, National Plant Protection Centre, National Biodiversity Centre and Watershed Management Division. As part of providing access to rural communities, the ministry is also involved in the construction of farm roads and power tiller tracks and in the development of irrigation systems. For these infrastructure developments, the engineering section of the Department of Agriculture has the responsibility of maintaining environmental standards enforced by the NEC. Policy supports are provided by the Policy and Planning Division for the entire Ministry.

Ministry of Economic Affairs also has an Environmental Unit which looks after the quality of Bhutan's air, land and water resources under the purview of the implementing authority of industrial and mining activities. Its functional departments like the Department of Industry, Department of Energy, Department of Geology and Mines have environmental management functions in terms of reducing or controlling industrial pollution, promoting clean technology and energy, and providing geotechnical services including assessment and monitoring of mining sites and geologically vulnerable areas. The Regional Trade and Industry Offices are also now given additional responsibility of looking after the issuance of certain environmental clearances for business establishments.

The Department of Roads under the Ministry of Works and Human Settlements promote environment-friendly road construction techniques and has developed environmental codes of practice for road construction under its purview. Similarly, institutions such as the Department of Urban Development and Engineering Services together with the National Housing Development Corporation, City Corporations and the Standard & Quality Control Authority promote responsibility of the development of eco-friendly human settlements and safety standards.

Other government agencies that are relevant to environmental management include the Department of Revenue and Customs which is responsible for monitoring the import and export of ozone depleting substances through regular checks and verifications; Road Safety and Transport Authority for enforcement of vehicular emission standards and periodic vehicular emission tests and issuance of Emission Standard Certificates across the country; the Department of Forests for regulating illegal trade in wildlife parts and products; the National Institute of Traditional Medicines for promotion of domestic propagation of medicinal plants and carrying out research on indigenous knowledge about biodiversity for use in traditional medicine; the Department of Local Governance for guiding the implementation of

environmental regulations within Dzongkhags and Geogs; and the Department of Disaster Management under the Ministry of Home and Cultural Affairs for coordinating disaster management activities.

At the Dzongkhag and Geog levels, the Dzongkhag Yargye Tshogdues and Geog Yargye Tshogchungs are vested with the power and the responsibility to implement environmental management functions in accordance with their respective Chathrim. Moreover, the formation of Dzongkhag Environmental Committees and the appointment of Dzongkhag Environment Officers to ensure the integration of environmental concerns in Dzongkhag development plans and in coordinating and implementing environmental assessments and clearance procedures at the Dzongkhag and Geog levels.

Apart from these, the World Wildlife Fund (an International Non Governmental Organization) has been supporting the conservation efforts of the government, particularly in the protected areas during the last thirty years. It has been instrumental in establishing the Bhutan Trust Fund for Environmental Conservation and in the establishment of the only national environmental NGO, the Royal Society for the Protection of Nature (RSPN) with the primary responsibility of propagating the environmental education in the country.

Within the above described institutional structure, although every Bhutanese has a statutory responsibility for the protection and conservation of environment as stated in the constitution, almost all the environment related investment, development, management and regulation are being carried out by the public sector organizations. Involvement of the private sector in environment management is quite limited.

1.6 Key Environmental Issues

Since natural resources play a significant role in the economic growth of the country as well as livelihoods of its population, there are several other environmental issues faced by the country. The ethics of conservation must now go beyond the natural environment to cover emerging new areas such as waste management, pollution, and recycling, which will increasingly impact the future quality of life of the population. Some of the key environmental issues presently faced by the country are as follows.

High dependence on firewood as main source of energy

Because of the presence of large tracks of forest, the primary source of energy in Bhutan has been firewood, used mainly at the household level for both cooking and heating. Due to the availability of firewood in abundant quantities, household sector has been depending more on firewood than on electricity, which accounts for about 90% of the total energy consumption of Bhutan⁵. The high level of poverty in the rural areas aggravated the dependence on firewood. This situation is further deepened as a result of people having free rights to natural resources and collecting firewood resources from nearby forests without necessarily having to pay for such supplies. However, the achievements made through the production and distribution of hydro electricity power throughout the country has produced positive results, especially in using electric energy thereby reducing the dependence on firewood, especially in the urban and semi urban areas.

Availability of land for production purposes

The availability of agricultural land is restricted to only 7.8% of the total land of the country, of which the irrigable land is about 1%. The high priority given to the maintenance of forest land as well as the general mountainous terrain restricts the expansion of land for agricultural purposes. At the same, the conversion of agricultural land for urban use has further aggravated the problem of food production. In fact, the Bhutan Environment Outlook 2008 states that during the last decade from 1998 – 2007, about 161 ha of prime agricultural land had been converted to other forms of land use⁶.

The higher population growth experienced by the country (almost 1.3 % per annum) is yet another reason for the higher demand of buildable land for urban uses. Since development of urban and residential areas are limited to arable land, priority of use of land for such purposes against preserving as farm lands has become a challenging issue.

Soil degradation

Given the steep terrain of most parts of the country and the typical monsoon rainfall pattern, soil erosion has become a critical issue faced by the agricultural use of lands. It has been estimated that out of approximately 40,000 ha of agricultural land, almost 10%, has been affected by soil erosion to some

⁵ Asia Pacific Review by Kogan Page, Daniel Brett, The Economic and Business Report, 2..3/2004, P 41; Macro-economics of Poverty Reduction: The Case Study of Bhutan, UNDP Regional Center in Colombo, August 2007, P 168.

⁶ Bhutan Environment Outlook 2008, National Environment Commission, Royal Government of Bhutan.

degree. Soil erosion and landslides have become an annual phenomenon and considerable amount of agricultural land faces suitability for crop cultivation. Human activities involved in forestry production, infrastructure development (roads construction), construction of hydro power generation and transmission lines and mining, no doubt exacerbated the problem of soil erosion to a greater extent. Another cause of soil erosion in many parts of the country is said to be due to overgrazing by domestic animals through the practice of free ranching or open grazing.

Wildlife damage to crops and livestock

Human–wildlife conflict is considered as one of the main problems in rural Bhutan. There are several wild animals such as wild boars, elephants, monkeys, deer and bears damaging the agricultural crops and lives of farmers. Other wild animals such as tigers, leopards and wild dogs also depredate livestock that graze in the forest lands.

Deforestation

Since forest occupies almost three fourths of land in Bhutan, timber and fuel wood extraction has become the major cause of deforestation. Excessive timber consumption is a significant threat to forest biodiversity. The total allowable forest cut level of 149,000 cu. m. has been exceeded and the level has come up to about 190,000 cu. m. during the recent years. Fuel wood consumption is also estimated at 1.2 million cu. m. and most of this quantity is collected from natural forests.

Widespread and recurrence of forest fires have become a common problem due to public carelessness or deliberate activities. Social Forestry Division of the Department of Forests reports that, on an average, about 8,200 ha of forests are being affected by fires.

Another growing concern is the demand from the people and the move of the government to provide accessibility through increased road network and the development of mega hydro-power plants. Both of these activities greatly contribute to deforestation.

Urban Environmental issues

Although the present urban population is about 31% of the total population, there are no major environmental issues in terms of air pollution, water pollution and noise pollution levels. There are some

indications of increasing vehicular emission levels in Thimphu but it cannot be considered a serious problem due to higher capacity of carbon dioxide absorbance by natural forest cover compared to other cities in South and South East Asia such as in Bangkok, Jakarta and Manila. The first National Greenhouse Gas Inventory published in 2000 estimate that Bhutan's total greenhouse gas emissions is 255.16 giga-grams. However, the country's forest is estimated to be removing 3,549.52 giga-grams of carbon dioxide thus making Bhutan net greenhouse gases sequester. There are some water pollution problems due to discharge of polluted waste, water and oils seeping through septic tanks into the rivers and other water bodies.

The solid waste generation rate in the main city of Thimphu is increasing annually due to population increase; studies show that the present landfill site cannot absorb the solid waste generated by the Thimphu City during the next five years. Finding a suitable land for sanitary land filling of solid waste in Thimphu will be a difficult task due to restricted land situation and hopefully this may compel adoption and implementation of attempts such as waste segregation at source and in developing systems of recycling segregated wastes so that what is required to dump in a landfill site would be minimal.

Mainstreaming Environment

As already stated earlier, poverty and environment are inextricably linked together in Bhutan. Due to this situation, a lot of emphasis has been given to systematically mainstream environmental issues into national development policies, and implementation of developmental programs and projects at all levels.

However, environment mainstreaming has been still identified as one of the shortcomings of the 9th Five Year Plan (FYP) and NEC has recommended that environmental issues be mainstreamed right at the planning, programming and policy development stages and incorporated as a strategy of development within the 10th FYP.

The key strategies of the 10th Five Year Plan is to reduce poverty through environmental management interventions, including sustainable use of environmental resources as an asset for the local communities to enhance their income and improve human welfare. This will be done through outlets like community based eco-tourism, bio-prospecting, promotion of sustainable non-wood forest products (NWFPs) related trade and implementation of interventions to reduce human-wildlife conflicts. The

government expects the promotion of NWFPs to support a large, rural-based micro and small private enterprise development, thereby contributing to reducing poverty and realizing the Millennium Development Goals (MDG).

1.7 The Present Assignment

Under this strategic framework, the present assignment of analyzing the Public Environment Expenditure expects to provide critical information required for streamlining and strengthening environmental management activities more effectively. In fact, public expenditure management has been identified as the major institutional mechanism of improving environmental management of a country.

With the objective of understanding the expenditure pattern of public investment in the RGOB, assistance is provided by the UNDP and UNEP through the Bhutan Poverty and Environment Initiative (PEI) Project, to execute the assignment. It will analyze the experiences and trends in public expenditure in environment sector during the 9th FYP period. The insights highlighted by the analysis are expected to inform effective budgetary allocation, planning and mobilization of financial resources under the respective Ministries and Institutions so that environmental objectives developed in the 10th FYP can be achieved.

The report of Public Environmental Expenditure (PEE) Analysis of Bhutan is presented under the following Chapters. Chapter 1 provides a background of the country, its environment sector and outlines the scope of the assignment. Chapter 2 explains the methodology adopted for the analysis of PEE in Bhutan under the framework of a common definition of Public Expenditure developed in consultation with relevant stakeholders. Chapter 3 of the report deals with the analytical findings of the PEE study on the basis of expenditure information collected from the Department of Public Accounts of the RGoB on both annual current and capital expenditure on environment during the last six year period (from 2002-2003 to 2007-2008) of the 9th Plan. The information thus collected is synthesized and presented in this chapter under Institutional, Economic, and Environment and Decentralized classifications. Chapter 4 of the report summarizes the findings of the analysis of PEE of Bhutan and Chapter 5 provides conclusions of the study.

The definition of Public Environmental Expenditure of Bhutan and details of data tabulation sheets are attached as annexure for reference.

CHAPTER 2: PUBLIC ENVIRONMENTAL EXPENDITURE ANALYSIS METHODOLOGY

2.1 Introduction

The first step towards analyzing the Public Environmental Expenditure of any country would be to identify its environmental priorities, so that the items of expenditures managing environmental issues could be addressed. There are several ways of identifying these priorities. One would be to review baseline data of the country and determine the social, economic and natural environmental characteristics. It is carried out to understand the scope, magnitude and implications on a country's future development. Another way of identifying the priorities would be to analyze people's perceptions and prepare a list of issues prioritized on popular consensus. A third method of identification of priorities would be to review the planning and development projections of the country for the next decade or so and through that process identify environmental priorities that could affect the future development perspective of the country.

In Bhutan, where public expenditure planning and implementation takes the role of determining the socio and economic development of the country, the public environmental expenditure will also decide the what activities are to be carried out in the environment sector. Obviously, unlike in many countries, these expenditures have something more than to just correct 'market deficiencies'. To make deficiencies in market operations, private sector will have to play a pivotal role in economic management and will have to function as the 'engine of growth'. In Bhutan, the public sector drives the economy with the private sector taking responsibility of functioning in few areas only. The Public Environmental Expenditure analysis of Bhutan is therefore not just to correct market failures but to improve, manage and regulate the environment for the benefit of both present and future generations. The public environmental expenditure in Bhutan is therefore aimed towards achieving three main objectives: establishment of a system of 'environmental federalism', popularization of environmental friendly alternatives and regulating human activities towards pollution abatement and nature protection.

The objectives of public environmental expenditure of RGoB and its environmental priorities are clearly explained in the following few paragraphs extracted from the 9th Five Year plan document.

"Conservation of natural resources continues to remain a priority for the Royal Government. At present Bhutan has 72 percent of its land area under forest cover that includes 26 percent as protected areas and biological corridors comprise an additional 9 percent of the land area.

The country has very high levels of biological diversity at the ecosystem, species and genetic levels. Bhutan ranks in the top 10 percent of countries with the highest species density (species richness per unit of area) in the world, and it has the highest fraction of land in protected areas and the highest proportion of forest cover of any Asian country.

With the rapid pace of economic development, pressures on development on the natural environment continue to increase and are fuelled by a complex array of forces. They include population pressures, agricultural modernization, hydropower and mineral development, industrialization, urbanization, and infrastructure development.

Land degradation in the country is manifested primarily in displacement of soil material through water erosion and internal biophysical deterioration. Human induced activities mainly trigger soil erosion in the mountainous terrain. Loss of vegetation due to deforestation, over cutting beyond silviculturally permissible limits, livestock rearing, unsustainable fuel wood extraction, encroachment into forest land, forest fire, overgrazing, extension of cultivation on to lands of low potential or high natural hazards, lack of adequate soil conservation measures and improper crop rotation are some of the important factors contributing to land degradation in Bhutan. Mining and quarrying, development activities like road construction, transmission line etc, also contribute to land degradation and loss of forest cover. Land use change and land use conversions and forest activities need continuous monitoring for assessment of cumulative impacts from all development activities including roads, forestry and other extractive industries.”⁷

Accordingly, 9th FYP laid down the following objectives and strategies to guide the public environmental expenditure during the plan period.

i. Preservation of natural resources and biodiversity

Preservation of natural resources and biodiversity to ensure and safeguard the ecological processes, life support systems, implementation of adequate pollution abatement techniques and environmental management to mitigate the adverse impacts of modernization and industrialization;

ii. Implementation of legal measures

⁷ Ninth Plan Document (2002 – 2007), Planning Commission, Royal Government of Bhutan, April 2002.

Enactment of the National Environment Protection Act (NEPA) within the plan period, enforcement of regulations and procedures, and strengthening or development of capacities of Dzongkhags and other regulatory institutions;

iii. Monitoring of air pollution

Establishment of industrial estates to help control pollution and treatment of effluent at cost effective basis and establishment of a mobile emission monitoring unit with capabilities of analyzing basic air and water quality parameters;

iv. Management of waste and waste disposal

Communities to be sensitized on waste reduction at source by promoting use of reusable containers and introducing buying habits. Solid waste management rules also to be refined and implemented, along with guidelines to promote reduction of waste at source. For better management of waste in new satellite towns, effluent management systems to be introduced along with the implementation of Environment Codes of Practice for Solid Waste Management in Urban Areas, and Environmental Codes of Practice for Sewage and Sanitation Management in Urban Areas. Since a large number of urban agglomerations do not have municipal industrial waste water management facilities, causing deterioration of water quality in rivers, sewage and effluent treatment plants to improve effluent quality from industries and towns would be established.

v. Demarcation rules pertaining to forest and agricultural land

To resolve and mitigate conflicts caused by misinterpretation and misunderstanding of the provisions of the Forest and Nature Conservation Act and related legislation, awareness creation on legal provisions, swapping of marginal and distant renewable natural resources (RNR) lands with suitable forest lands, prescribe controlled burning of pastures to sustain livestock rearing, culling of prolific pest species like wild boars, and promotion of eco and agro tourism as means of providing alternative income to farmers would be implemented.

vi. Achieve a balance between conservation and socio economic development

To achieve this objective, the following challenges would be addressed.

- Conflict between conservation and farming;
- Demand for timber and wood products;
- Commercialization of non-wood forest products;
- Loss of forest land to industrial and infrastructure development; and
- Sustainability of conservation and protection measures.

2.2 Methodology of PEE Analysis

As for the methodology of analyzing PEE, environmental priorities spelt out in the 9th FYP were taken up and the public sector institutions dealing with those environmental priorities were identified. Accordingly a definition on “Public Environment Expenditure” for Bhutan was prepared and submitted to relevant authorities/stakeholders for approval. A copy of the definition paper is given in Annexure 1.

Based on the definition and the environmental indicators highlighted in the 9th FYP, the relevant public sector institutions and the environment responsibilities of those institutions together with detailed activities relating to the implementation of environmental responsibilities were listed. The following sources were used to prepare the list of institutions, environmental responsibilities of each institution and their main activities.

- i. Sector Development Strategies described in the 9th FYP
- ii. Annual Budgets of Ministries approved by the Parliament
- iii. Annual Public Accounts Statements published by the Department of Public Accounts

The main government institutions identified as environmental related are provided below in Table 2.1.

Table 2.1: Main Government Institutions identified as Environment related

Government Institution	Responsible Area
1. National Environment Commission	i. Implementation of responsibilities related to International Covenants ii. Establishment of National Environmental Standards and guidelines iii. Overall monitoring and regulation of environmental standards
2. Ministry of Agriculture	i. Agriculture Services ii. Forestry Services iii. Livestock Services iv. Biodiversity Conservation v. Natural Resource Management vi. Pest Management vii. Soil Management viii. Wildlife Conservation ix. Plant Protection
3. Ministry of Economic Affairs (Trade & Industry)	i. Geological Surveys and Mining ii. Surveying and Mapping iii. Energy Development and Distribution iv. Development of Alternative Energy Sources v. Industry and Industrial Estates vi. Entrepreneurship Development vii. Tourism
4. Ministry of Information and Communication	i. Road Safety and Transport ii. Communication Infrastructure
5. Ministry of Works and Human Settlements	i. Construction of Roads and Bridges ii. Urban Development iii. Water Supply and Sewerage

	iv. Housing Development
6. Ministry of Home and Cultural Affairs	i. Local Governance ii. District level environmental monitoring iii. Implementation of district level environment related activities
7. Geog Administration	i. Implementation of environment related activities at geog level

A detailed list of all “Environment related Public Sector Institutions” together with the major environmental responsibilities discharged by them and activities implemented are given in Annexure 2. However, it should be noted that some of the above institutions do not receive government budgetary allocations and some of them do not implement direct environment related activities, even though their responsibilities have an indirect impact on the environment. One good example is the National Housing Development Corporation which implements activities related to water supply and sewerage facilities for people living in housing schemes looked after by the Corporation. The expenditure incurred by the corporation in providing the services does not get accounted as direct environment activities but the quality of their services certainly has bearing on the health of the overall environment at large.

The next step followed in the methodology of PEE analysis was the collection of detailed data on annual budgetary allocations and expenditure incurred during each year on environmental activities. For this purpose, first the public accounting system of Bhutan had to be clearly studied and understood. One good advantage noticed in Bhutan was the usage of same accounting code system to allocate finances in the budget and recording expenditure at the public accounts system. Therefore, when the financial allocation system is understood, it was much easier to collect relevant expenditure data in relation to budget activities. The budgetary allocation system of Bhutan is summarized in Table 2.2.

Table 2.2: Summary Explanation of Accounting Codes used in Bhutan

Institution	Code Series	Remarks
His Majesty's Secretariat and all other independent institutions carry codes of 100 series.	101.01	
Ministries	201.01 202.01 203.01	
Dzongkhags Administration	401.01 402.01 403.01	
Geogs under each Dzongkhag	4.01.02 onwards 402.02 onwards 403.02 onwards	
Programs	01 02 03 etc.	Programs carry only two digit series
Sub Programs	001 002 003 etc.	Sub Programs carry a three digit series commencing '0'.
Activities	001.00 002.00 003.00	Activity Codes are assigned with three digits with .00 to represent the activity name.
Sub Activities	001.01 001.02 001.03 etc.	All Sub Activities within an Activity are numbered with codes .01 onwards.

Since the same accounting codes were followed by both the Department of National Budget and Department of Public Accounts for allocation of budgetary resources and expenditures, a common format was used to collect both financial allocation and expenditure data at the same time. In fact, the above situation was helpful to collect data from the same source, i.e. from Department of Public Accounts to collect both data sets. This methodology provided another opportunity to save time and

energy in collecting information and data with regard to revised allocations made available for different implementation institutions within the financial year. In fact, the database of the Department of Public Accounts named its budgetary allocation column as “Revised Budget Allocation” to record all budgetary revisions within the year.

The PEE Analysis of Bhutan is based on public expenditure incurred on both current and capital items. The current expenditure information was segregated into three sub categories namely, salaries (including all allowances and retirement benefits), operation and maintenance of assets and other expenditure. The three components of current expenditure included cost items listed in Table 2.3. (Please note that each cost item carry same code number in the accounting system)

Category of Current Allocation/Expenditure	Cost Items
1. Salaries	1.01 Pay & Allowances 2.01 Other Personal Emoluments 4.01 Special Allowances 24.03 Contribution – Provident Fund 25.01 Retirement Benefits
2. Operation and Maintenance	15.01 Maintenance of Property - Buildings 15.02 Maintenance of Property - Vehicles 15.03 Maintenance of Property - Roads 15.05 Maintenance of Property – Equipment 15.06 Maintenance of Property - Plantations 15.07 Maintenance of Property – Computers 15.08 Maintenance of Property – Others
3. Others	11.01 Travel In-country 12.01 Utilities – Telephone, Telex, Fax, E-mail, Internet 12.02 Utilities - Telegram, Wireless Transmission, Postage 12.03 Utilities, Electricity, water, Sewerage 12.04 Utilities – Others 13.01 Rental on Properties – Buildings 13.02 Rental on Properties - Vehicles 14.01 Supplies and Materials – Office supplies, Printing, Publications 14.02 Medicines and Laboratory Consumables 14.03 Fertilizer, Chemicals, Manure, Inoculants 14.04 Seeds and Seedlings 14.06 Uniforms, Extension Kits, Linen 14.07 Test Books, Library Books, Stationary, Sports Items 14.08 Others 17.01 Operational Expenditure – Advertising 17.02 Op. Exp – Taxes, Duties, Royalties, handling & Bank Charges 17.03 Op. Exp – Transportation

	17.04 Op. Exp – Energy/Propulsion Charges 17.06 Op. Exp – Item for Manufacturing 17.07 Op. Exp – Others 18.01 Hospitality & Entertainment
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Collection of data on current expenditure on environmental activities was difficult and there were limitations. Most of the environmental activities did not include current allocations and expenditures. In general, current expenditure of all institutions were included under the activity of “General Administration and Direction Services” and all the three categories of expenditures, salaries, operation and maintenance and others, were pooled together and reflected under the above activity. However, as the expenditure items reflected under ‘others’ category did not have a specific current expenditure item for the implementation of that particular activity, it was difficult to assess whether such expenditure was made in relation to an environmental activity or not. Under such circumstances, one must be mindful of the fact that current expenditure of PEE could be under estimated.

In some programs, almost all activities are exclusively environmental and even though the current costs are stated under the “General Administration and Direction services” of that program, the whole expenditure can be straight away included as environmental. Good example is wildlife preservation services. There are 11 sub-activities under the main activity of Nature Conservation Division, where Salaries, O & M expenditure and Other Services are included under the main activity with only few exclusive current items given under each sub-activity. Therefore, even though the total current expenditure is included as PEE there is no over estimation.

Subject to the above limitations, data on budget allocations and expenditures of each environment related institution was collected using the format given in B. The Left hand total of the Table gives the Revised Allocation for environmental related activities of the institution and the right hand Total gives the actual Public Environmental Expenditure for that institution.

While collecting data on PEE, an attempt was made to collect information on financing of public environmental expenditure as well. The information on the database of the Department of Public Accounts, along with other details of expenditure, provides information on financing sources of expenditures. It can be seen that all expenditure items financed by RGoB is given under one accounting code and the external financing under a different code, specific to the funding institution or the Project. During data collection, a separate column was added to include the foreign funding so that the total

foreign financing of Programs and Institutions could be separately provided. Therefore, the proportion of foreign financing of each environmental program of the institutions could be separately analyzed.

2.3 PEE Analysis

The data thus collected were totaled first, according to programs implemented by the environment related institutions and thereafter by institutions. Their totals were tabulated into consolidated tables on annual basis for the whole 9th Plan period, i.e. from 2002-2003 to 2007-2008. Some of the institutions implemented only one environment related program of activities and there too, only few activities were related to environment. Therefore, annual tables were prepared in terms of environment related programs under relevant institutions without giving totals for the institutions.

These tables were helpful to analyze the public environmental status of Bhutan and also to compare the results across the plan period apart from facilitating comparison with other country experiences.

For analytical purposes, several other tables using the overall results of the main analytical table was used to study the trends of environmental expenditure, salient characteristics of environmental expenditure and to understand the major areas of environmental expenditure in the country.

Details on the outcomes of data analysis and overall results are discussed in Chapter 3.

CHAPTER 3: PUBLIC ENVIRONMENTAL EXPENDITURE OF BHUTAN

3.1 General Outcomes

The analysis revealed that the environment sector of Bhutan accounted for almost an average of 7% of the total public sector expenditure during the 9th Plan period. During the first year of the Plan (2002-2003), the public expenditure on environment was rather high, exceeding 10 percent of the total budgetary expenditure of that year. However, during the latter years it came down to between 5–6 percent per annum. This may be due to competing demands for budgetary resources from other economic sectors. **Table 3.1** presents the average annual public environmental expenditure in Bhutan during the 9th FYP from 2002-2003 to 2007-2008.

Table 3.1: Average Annual Public Environmental Expenditure in Bhutan during 9th FYP

(Values in Nu. Million)

Item	2002-03	2003-04	2004-05	2005.06	2006-07	2007-08	Annual Average
1. Annual PEE	1,058.971	951.410	915.305	1,017.020	1,157.266	1,116.242	1,036.036
2. Total Public Expenditure	10,211.15	10,931.91	13,562.88	16,006.48	16,298.25	21,809.71	14,803.39
3. PEE as a % of Total Exp.	10.37	9.70	6.75	6.35	7.10	5.12	7.40
4. GDP	29,386	32,320	36,463	40,448	51,522	57,456	
5. PEE as a % of GDP	3.60	2.94	2.51	2.51	2.25	1.94	2.80

Source: Department of Public Accounts

The above average annual PEE can be compared with the average annual budgetary expenditure of the National Environmental Commission (NEC) of Nu. 38.5 million, during the 9th FYP, which was around 0.26 percent of the average annual budgetary expenditure of the Plan period.

It is, however, interesting to note that the PEE as a percentage of GDP of the country experienced a continuous decline during the Plan period. The percentage of PEE in 2002–2003 that stood at 3.6 of GDP has reduced by almost 45% during the plan period closing at 1.94 of GDP in 2007–2008. The level of PEE experienced during the early years of the 9th Plan was much higher than most of the developing countries but towards the end of the plan period, it reached closer to other developing countries. However, the PEE experience in Bhutan is still better.

The results summarized in Table 3.1 are depicted in Diagrams 3.1 and 3.2, below.

Diagram 3.1: Total Public Environmental Expenditure

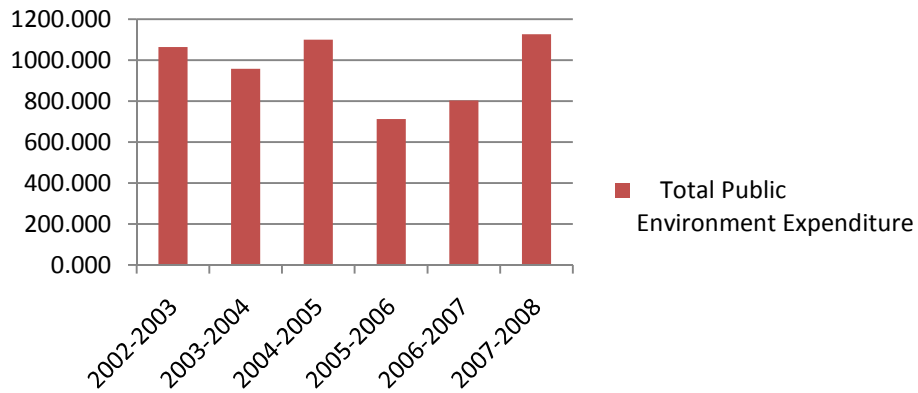
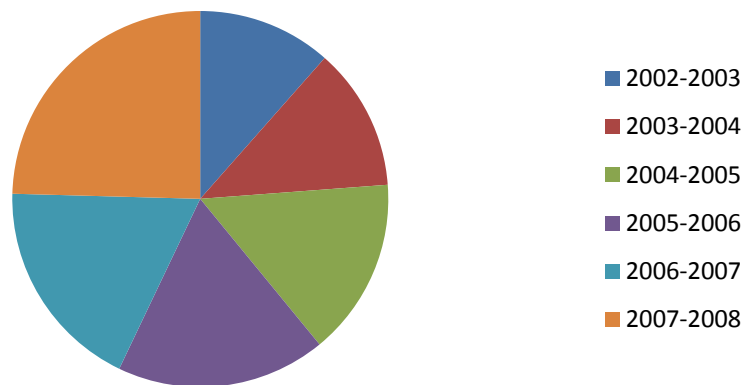


Diagram 1.2: Total Public Expenditure for the Period



3.2 Institutional Classification

The composition of PEE in Bhutan reveals further interesting results. **Table 3.2** gives information on public sector institutions responsible for PEE. It also captures the Departments of Forests, Agriculture and Energy as the major environmental related public institutions during the 9th FYP. The Department of Forests of course is the main public sector institution responsible for the management and development of natural resources and biodiversity of the country such as forestry, watersheds and wildlife. The Department of Agriculture on the other hand is responsible for soil conservation, plant protection and the provision of extension services related to the development of alternative livelihoods and enterprises to reduce the demand for natural resource extraction and thereby encouraging public activities towards resource conservation.

Table 3.2: Contributions of Public Sector Institutions towards Environment, 9th Five Year Plan Period

(Values in Nu. Million)

Institution	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	Annual Average
1. National Planning Com.				2.46		5.01	3.735
2. National Env. Com.	26.87	28.16	44.08	52.53	35.93	43.66	38.54
3. Dept. of Local Governance				3.46	13.11	8.70	8.43
4. Secretariat of MoA	107.21	129.38	54.03	63.17	123.63	132.00	101.57
5. Department of Agriculture	300.85 ¹	6.58	20.28	21.37	13.62	27.30	65.00
6. Department of Forests	230.49	246.53	281.01	331.62	371.93	331.29	298.81
7. Council for RNR Research		109.48	97.197	132.71	106.84	93.55	107.95
8. Secretariat of MoEA	18.84	24.71	20.57	19.99	14.41	10.10	17.60
9. Dept./Geology & Mines	12.56	20.35	40.83	45.70	32.46	46.98	33.15
10. Dept/Energy	188.10	82.60	68.61	155.33	101.87	68.99	110.91
11. Dept./Industry	22.09	6.16	19.29	21.17	49.17	36.15	25.67
12. Dept/Tourism	0.26	2.11	.067	2.46			1.38
13. Urban Development and Engineering Services	70.68	208.19	150.53	30.91	63.00	60.09	97.23
14. Road Safety & Transport Authority	5.07	5.82	8.18	7.80	15.97	9.67	8.75
15. Dzongkhag Administrations	73.56	68.06	93.46	9 0.01	148.04	146.93	106.18
16. Geog Administrations	2.41	12.29	16,58	36.20	70.29	95.83	41.91
17. Total	1,058.97	951.41	915.31	1,017.02	1,157.27	1,116.24	1,036.04

Source: Department of Public Accounts

¹ Includes Research and Development and Agriculture Services

As shown in the above table, Secretariat of the Ministry of Agriculture accounted for high amount of environmental expenditure because it was the institution responsible for biodiversity and watershed management programs financed by several donor agencies. Of course, almost all the highest environmental projects of Bhutan were financed through foreign assistance where the total local costs of project implementation were financed by the respective donor agencies.

3.3 Environmental Domain Classification

An attempt was made to classify the estimated PEE under environmental domain categories. For this purpose, the following environmental categories applicable to RGoB were identified.

- Activities that generate impact on Air, Noise and Climatic
- Activities that generate impact on Natural Resource Management
- Activities that generate impact on Soil and Water Conservation
- Activities that generate impact on Waste Management
- Activities that generate impact on Sewerage and Water Management
- Activities that focus on HRD and Research and Development, and
- Activities that focus on other Environmental areas.

The results of the classification are given in **Table 3.3**.

Table 3.3: Classification of PEE according to Environmental Domains 2002-03 to 2007-08

(Values in Nu. Million)

Institution	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	Annual Average
1. Air, Noise and Climate	57.96	34.79	38.22	39.61	55.44	60.76	47.80
2. Natural Resource Management	195.87	226.38	243.66	281.32	398.02	280.55	270.97
3. Biodiversity	121.72	132.15	125.97	151.14	156.06	223.75	151.80
4. Soil and Water Conservation	37.47	36.17	35.09	28.10	44.62	36.24	36.28
5. Sewerage and Water Supply	46.66	77.74	70.47	66.16	49.62	41.00	58.61
6. Waste Management	18.97	40.35	41.00	50.92	30.53	28.60	35.06
7. Training, HRD and R&D	169.77	136.49	108.38	143.55	146.22	174.23	146.44
8. Other Environment	410.55	267.35	252.51	256.23	276.77	271.11	289.09
Total PEE	1,058.97	951.41	915.31	1,017.02	1,157.27	1,116.24	1,036.04

Source: Annual PEE Tables

The above classification results are depicted in **Diagram 3.3**.

With the complex nature of the activities, it was not easy to determine and categorize them under each domain. Wherever ambiguity existed, activities were classified under 'other environment management'. As a result, the total of other environment category has increased.

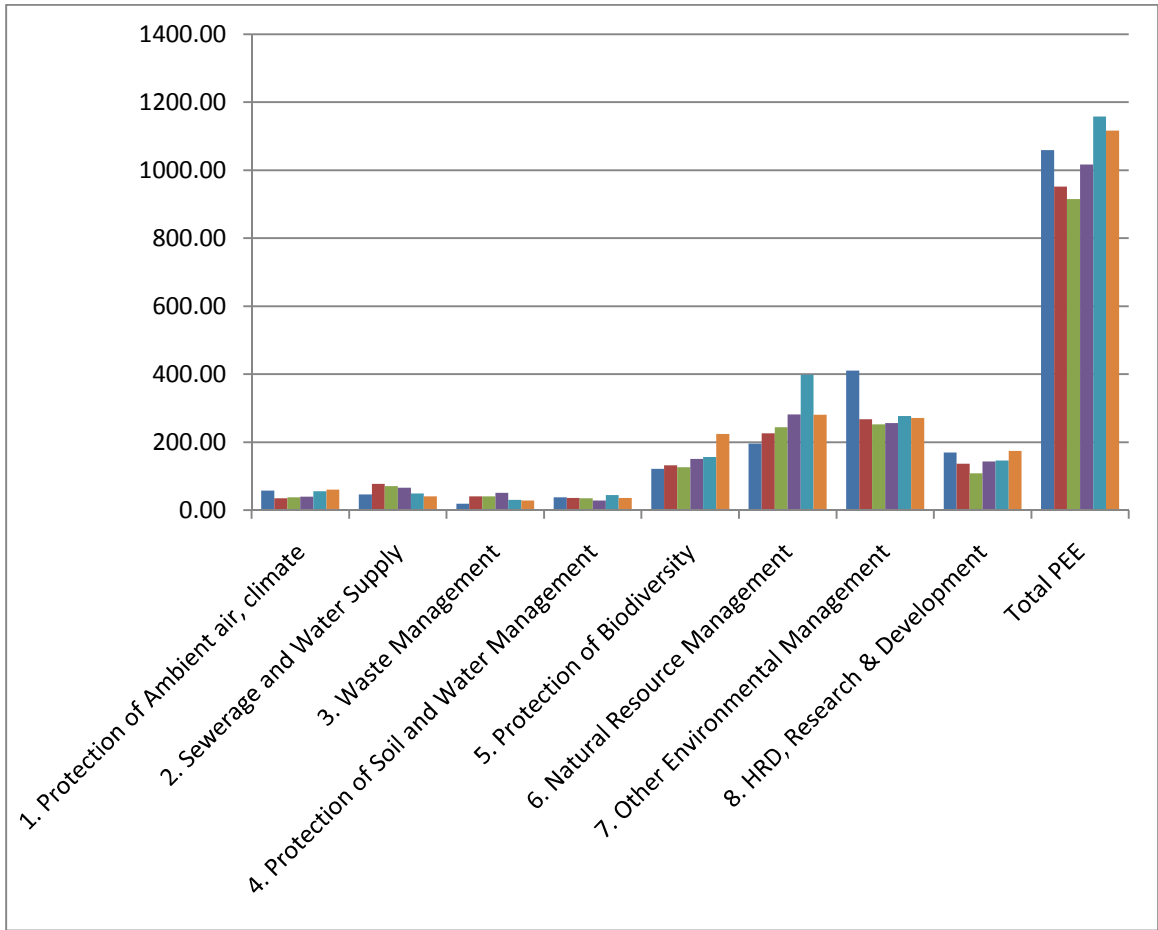
Few examples of those activities included under 'Other Environment' are as follows.

- Seismic data collection for hazard zoning
- Induces risks and vulnerabilities from glacial lake outbursts
- Rural electrification programs
- Alternative energy programs
- Sustainable land management projects
- Services to promote MDG based development strategies
- Development activities carried under RNR Centers (it is difficult to categorize each and every sub-activity without going into details)
- Construction of storm water drainage systems
- Construction of river protection systems including retaining walls
- Implementation of Micro Environmental Action Plans
- Disaster Management Services
- Development of Pasture and Fodder Development (considered as an alternative program to reduce grazing to protect forest areas)

Similarly, the training of farmers in forestry, forest plantations and study tours were also included under 'Training, HRD and R&D' category. The R&D expenditure could have included under a separate domain, however, in order to limit the number of categories, R&D is also included under Training and HRD.

The classification however provides an opportunity to understand the areas of environment concerns of the government for monitoring and supervision. Also, the information provides an opportunity to understand the salient environmental characteristics of Bhutan at a glance. Almost 25% of the total public expenditure in natural resource management and another 14% of total expenditure on biodiversity shows the interest of RGoB in maintaining the natural resources of the country. The expenditure made on HRD and research and development also proves the government's commitment towards environmental management.

Diagram 3.3: Depicting Summary Information of Environmental Domain Classification



3.4 Economic Classification

At the time of collecting expenditure information on environment related activities, data related to both current and capital expenditures were collected. As stated in Chapter 2, the data collection format included the current expenditure under the three sub headings namely, salaries and allowances, maintenance of properties and 'other operational expenditure'. The expenditure items included under each category are also listed in the Chapter 2. Using this categorization as a guideline, the data collected on current and capital expenditure is given in **Table 3.4** under Budget Programs.

The budget programs are more or less similar to institution headings. For example, the agriculture services, forestry services and other programs under respective Ministries are considered as one single program of expenditure. When the same program under several Ministries occurs, total expenditure of the same program of all such ministries has been included under one program in economic

classification. A good example is the total given under 'General Administration Program', where two such programs under the Ministry of Agriculture and Ministry of Economic Affairs were added and given under the program heading of "General Administration in the Economic Classification of PEE.

When collecting data, only Programs, Sub programs and Activities related to the definition of "Environment" agreed for Bhutan were used. Further, only relevant sub activities were identified, leaving out the main activity or all other sub sections on activities. Therefore, the current or capital expenditure given in **Table 3.4** represents only the current and capital expenditures of environmental activities and not the current and capital expenditures of the Program or the Sub program.

To give a better understanding of the economic classification of expenditure between current and capital costs, **Table 3.5** presents the same expenditure in percentages. This table presents the situation of not stating the current expenditure under some programs due to pooling them under the vote of Direction Services. Since total current expenditure is not only for environmental activities, it is not possible to estimate the proportion of current expenditure to be included in the economic classification.

An attempt is also made to classify current expenditure in terms of salaries (personnel payments) and operational expenditure. As stated in the methodology, salary expenditure includes pay and allowances as well as other special payments including retirement benefits. The operational expenditure includes cost of maintenance of properties (both movable and immovable) and other operational costs, where a long list of items is given in Chapter 2. Although expenditure information was collected in terms of three categories separately and included in the Annual PEE Statements, the analysis is made under the two categories of Salaries and Other Operational Expenditure. In fact, the maintenance expenditure is small and compared to the average current expenditure, it accounted for only 5 percent.

The analysis showed that the salary expenditure of the total PEE expenditure in Bhutan during the 9th Plan period was in the region of 50 percent. In fact, this figure is little higher when compared to the RGoB's overall level (averages about 40 percent), it seems to be higher.

The information summarized in Table 3.5 (percentage values of economic classification of PEE) is presented in **Diagram 3.4**, comparing the consolidated PEE expenditure of budget Programs of Central Government Institutions and Dzongkhags.

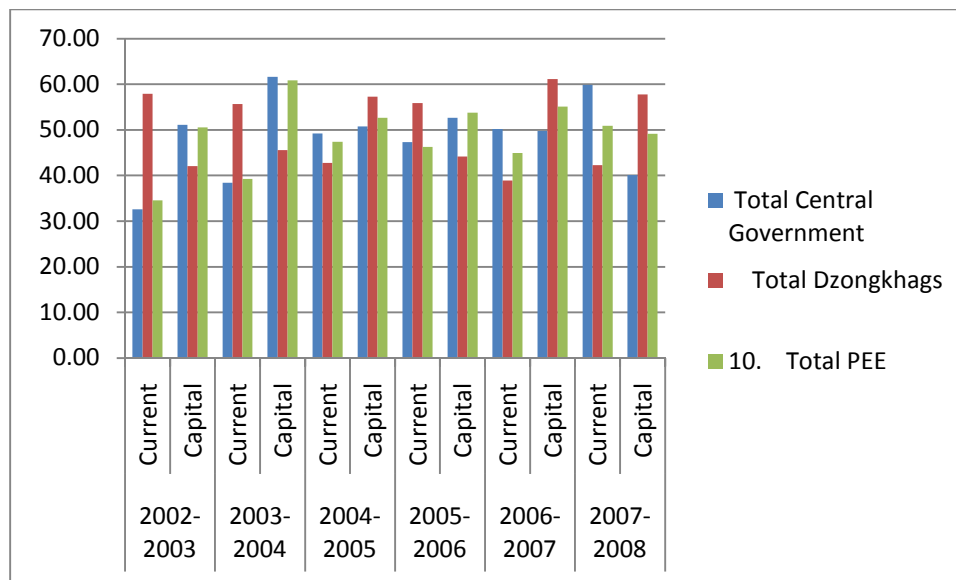


Diagram 3.4: Consolidate PEE of Budget Programs of Central Government and Dzongkhags

Table 3:4: Economic Classification of PEE, 2002-2003 to 2007-2008 (Values in Nu. Million)

Program Code/Name	2002-2003			2003-2004			2004-2005			2005-2006			2006-2007			2007-2008		
	Current	Capital	Total	Current	Capital	Total	Current	Capital	Total	Current	Capital	Total	Current	Capital	Total	Current	Capital	Total
01 General Admin.	55.68	97.23	152.91	66.04	116.21	182.25	49.05	69.63	118.68	61.18	80.33	138.15	91.97	82.42	170.97	89.88	101.11	190.76
16. Agriculture Services	66.90	98.46	165.36	1.19	5.38	6.58	9.30	10.99	20.28	7.80	13.56	21.37	3.73	9.90	13.62	4.41	22.89	27.30
18. Forestry Services	156.75	73.73	230.49	172.47	74.06	246.53	198.72	82.29	281.01	227.39	104.24	331.82	253.11	118.82	371.93	259.81	71.48	331.29
20 Geology & Mines	7.01	5.56	12.56	9.89	10.46	20.35	17.48	23.35	40.83	17.66	28.04	45.70	20.38	12.08	32.46	41.15	5.83	46.98
21. Energy Services	19.48	168.62	188.10	12.56	70.04	82.60	27.09	41.52	68.61	9.57	145.76	155.33	9.77	92.10	101.87	10.29	58.70	68.99
22. Industry Services	4.24	17.8	22.09	4.37	1.79	6.16	7.37	11.93	19.29	0.77	20.41	21.17	0.80	48.37	49.17	0.46	35.69	36.15
23. Tourism Services	0.26	0.00	0.26	.025	1.86	2.11	.000	0.67	0.67	0.00	2.46	2.46	0.00	0.00	0.00	0.00	0.00	0.00
26 Urban Development	10.77	59.91	70.68	13.41	194.78	208.19	9.98	140.56	150.54	1.46	29.45	30.91	3.25	59.75	63.00	3.24	56.85	60.09
27. Road Safety	4.89	0.18	5.07	5.43	0.39	5.82	6.28	1.90	8.18	6.74	1.06	7.80	9.30	6.66	15.97	8.91	0.76	9.67
47 Local Governance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.21	0.25	3.46	5.23	7.88	13.11	3.81	4.90	8.70
Dzongkhags	42.61	30.95	73.56	37.90	31.02	68.06	43.47	58.20	101.67	50.29	39.72	90.01	57.58	90.47	148.04	62.11	84.83	146.93
Geogs	0.00	2.41	2.41	0.00	13.29	13.29	0.00	16.58	16.58	0.00	36.32	36.32	0.00	70.29	70.29	0.00	95.83	95.83
Total PEE	504.07	554.90	1058.97	367.91	583.50	951.41	422.21	493.10	915.31	466.20	550.80	1017.0	535.6	621.7	1157.3	560.4	555.8	1116.2

Source: Annual PEE Tables prepared from DPA Database

TABLE 3.5: ECONOMIC CLASSIFICATION OF PEE: 2002-2003 TO 2007-2008

Budget Program	2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008	
	Current	Capital	Current	Capital	Current	Capital	Current	Capital	Current	Capital	Current	Capital
General Administration & Direction	36.41	63.59	36.24	63.76	41.33	58.67	44.29	58.15	53.79	48.21	47.12	53.00
Agriculture Services	40.46	59.54	18.14	81.86	45.83	54.17	36.51	63.49	27.36	72.64	16.15	83.85
Forest Services	68.01	31.99	69.96	30.04	70.72	29.28	68.57	31.43	68.05	31.95	78.42	21.58
Council of RNR Research			40.61	59.39	63.48	36.52	61.44	38.56	74.8	25.2	82.08	17.92
Geology and Mines Services	55.78	44.22	48.62	51.38	42.81	57.19	38.65	61.35	62.78	37.22	87.6	12.4
Energy Services	10.35	89.65	15.21	84.79	39.49	60.51	6.163	93.84	9.586	90.41	14.91	85.09
Industry Services	19.20	80.8	70.91	29.09	38.18	61.82	3.618	96.38	1.629	98.37	1.272	98.73
Tourism Services	100.00	0	11.85	88.15	0	100	0	100				
Road Safety & Transport Services	96.51	3.495	93.33	6.667	76.72	23.28	86.39	13.61	58.27	41.73	92.19	7.809
Urban Development & Engineering Services	15.24	84.76	6.439	93.56	6.628	93.37	4.733	95.27	5.154	94.85	5.398	94.6
Local Governance Service							92.86	7.139	39.9	60.1	43.75	56.25
Total Central Government	38.91	61.09	38.39	61.61	49.21	50.79	47.33	52.67	50.19	49.81	59.89	40.11
8. Dzongkhag Administration												
i. Chukka	39.70	60.3	42.72	57.28	25.83	74.17	63.01	36.99	25.93	74.07	28.72	71.28
ii. Haa	40.24	59.76	54.97	45.03	70.52	29.48	51.72	48.28	44.22	55.78	67.23	32.77
iii. Paro	69.56	30.44	76.34	23.66	56.4	43.6	75.68	24.32	49.96	50.04	47.15	52.85
iv. Samste	58.08	41.92	26.53	73.47	26.27	73.73	45.05	54.95	24.21	75.79	51.51	48.49
v. Tsirang	50.92	49.08	76.43	23.57	54.92	45.08	59.1	40.9	53.51	46.49	36	64
vi. Dagana	80.89	19.11	40.25	59.75	43.3	56.7	30.71	69.29	35.91	64.09	27.23	72.77
vii. Punakha	89.50	10.5	92.54	7.459	41.08	58.92	40.8	59.2	16.29	83.71	39.83	60.17
viii. Wandue Phodrang	90.79	9.206	55.79	44.21	76.16	23.84	75.98	24.02	75.86	24.14	35.19	64.81
ix. Bumthang	85.71	14.29	62.96	37.04	71.36	28.64	77.74	22.26	29.06	70.94	79.17	20.83
x. Sarpang	13.45	86.55	42.96	57.04	28.86	71.14	54.7	45.3	27.48	72.52	33.38	66.62
xi. Zhemgang	64.51	35.49	90.72	45.21	41.06	58.94	76.38	23.62	28.78	71.22	63.6	36.4
xii. Trnogsa	69.45	30.55	75.8	24.2	62.85	37.15	26.9	73.1	57.92	42.08	34.08	65.92
xiii. Lhuentse	67.32	32.68	73.48	26.52	26.11	73.89	75.41	24.59	61.61	38.39	25.08	74.92
xiv. Mongar	84.80	15.2	100	0	27.78	72.22	60.52	39.48	46.28	53.72	78.84	21.16
xv. Pemagatshel	83.88	16.12	68.62	31.38	81.05	18.95	56.65	43.35	64.13	35.87	34.02	65.98
xvi. S/Jongkhar	58.31	41.69	41.64	58.36	49.7	50.3	41.98	58.02	39.08	60.92	45.22	54.78
xvii. Trashigang	97.51	2.49	89.78	10.22	44.75	55.25	42.47	57.53	36.7	63.3	33.8	66.2
xviii. Thimphu	38.53	61.47	33.15	66.85	82.23	17.77	80.64	19.36	87.9	12.1	82.85	17.15
xix. Gasa	90.78	9.217	44.03	55.97	63.6	36.4	83.12	16.88	81.37	18.63	47.23	52.77
xx. Trashiyangtse	86.83	13.17	48.88	51.12	79.05	20.95	78.83	21.17	91.89	8.106	60.17	39.83
Total Dzongkhags	57.93	42.07	55.69	45.58	42.76	57.24	55.87	44.13	38.89	61.11	42.27	57.73
9. Total Geogs	0.00	100	0	100	0	100	0	100	0	100	0	100
10. Total PEE	40.61	59.39	39.25	60.86	47.38	52.62	46.24	53.76	44.92	55.08	50.89	49.11

Source: Table 3.4

3.5 Expenditure Performance of Environment Allocation

The analysis of information show that the level of expenditure performance of environment related public sector institutions were rather low compared to the performance of non environmental expenditure activities. When comparing the expenditure performance of non environmental activities to that of environmental activities under the environment related institutions, performance of non environmental activities scored higher than the environmental activities. **Table 3.6** provides percentage expenditure performance of Central Government Institutions identified as responsible institutions for implementing environment activities as compared to Dzongkhags and Geogs during the 9th Plan period.

The information shows that Geogs as units of public expenditure units gained increasing performance over the years, commencing from a very low expenditure level of 35% to a level of closer to 80%, while the other organizations did not show such results.

It also shows that the expenditure performance of environmental related institutions in the implementation of non environmental activities was higher compared to the performance of environmental activities.

Table 3.6: Expenditure Performance of Public Institutions						
	Exp as % of Total allocation			Env Exp as % of Env Allocation		
	Central	Dzongkhags	Geogs	Central	Dzongkhags	Geogs
2002-2003	82.9	97.5	84.8	69	87.4	35.9
2003-2004	73.5	89.2	54.8	62	79.3	70.2
2004-2005	9.4	89.5	71.8	68.4	75.2	74.1
2005-2006	78.9	68.8	76.8	76.6	83.9	72.2
2006-2007	61.2	86.6	69.1	68.1	78	74.1
2007-2008	65.2	87.3	70.6	72.5	83	77.8
Average	61.85	86.48	71.32	69.43	81.13	67.38

TABLE 3.7: BREAKDOWN OF CURRENT PEE BETWEEN SALARIES AND OPERATIONAL Costs: 2002-2003 TO 2007-2008

Budget Program	(Percentages)											
	2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008	
	Salaries	Op. Exp	Salaries	Op. Exp	Salaries	Op. Exp	Salaries	Op. Exp	Salaries	Op. Exp	Salaries	Op. Exp
General Admin. & Direction	34.18	65.82	32.47	67.53	23.51	76.49	29.34	75.05	43.07	56.93	46.03	53.97
Agriculture Services	49.71	50.29	0.00	100.00	0.00	100.00	0.00	100.00	0.00	100.00	26.17	73.83
Forest Services	48.84	51.16	45.29	54.07	52.14	47.86	53.39	46.61	55.12	44.88	56.56	43.44
Council of RNR Research	0.00	0.00	45.54	54.46	50.37	49.63	57.38	42.62	58.88	41.12	58.87	41.13
Geology and Mines Services	39.89	60.11	50.96	49.04	53.24	46.76	52.25	47.75	53.04	46.96	24.16	75.84
Energy Services	60.51	39.49	56.31	43.69	56.70	43.30	53.19	46.81	59.13	40.87	55.43	44.57
Industry Services	71.71	28.29	53.65	46.35	58.66	41.34	0.00	100.00	16.23	83.77	0	100.00
Tourism Services	0.00	100	0.00	100.0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00
Road Safety & Transport Services	48.00	52.0	41.84	58.16	48.00	52.00	46.48	53.52	39.64	60.36	51.27	48.73
Urban Development & Engineering Services	52.61	47.4	23.88	76.12	53.82	46.18	0.00	100.0	19.53	80.47	19.54	80.46
Local Governance Service	0.00	0.00	0.00	0.00	0.00	0.00	67.04	32.96	65.26	34.74	70.43	29.57
Total Central Government	47.39	52.61	42.33	57.33	47.44	52.56	49.30	51.34	52.49	47.51	51.77	48.23
8. Dzongkhag Administration			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00
i. Chukka	52.99	57.46	34.63	65.37	1.19	98.81	42.60	57.40	47.05	52.95	49.94	50.06
ii. Haa	32.40	42.26	32.49	67.51	29.68	70.32	34.98	65.02	43.73	56.27	40.51	157.07
iii. Paro	46.47	23.68	43.30	56.70	34.38	65.62	48.57	51.43	54.43	45.57	49.86	50.14
iv. Samste	58.46	44.08	56.20	43.80	54.95	45.05	55.42	44.58	58.70	41.30	58.75	41.25
v. Tsirang	70.29	29.71	48.88	51.12	49.47	50.53	45.12	54.88	46.45	53.55	54.56	45.44
vi. Dagana	54.88	45.12	60.38	39.62	64.93	35.07	61.05	38.95	58.15	41.85	58.59	41.41
vii. Punakha	49.55	50.45	61.12	38.88	60.94	39.06	61.76	38.24	57.73	42.27	58.53	41.47
viii. Wandue Phodrang	46.61	53.39	43.00	57.00	48.85	51.15	48.42	51.58	53.43	46.57	59.75	40.25
ix. Bumthang	48.63	51.37	53.10	46.90	56.75	43.25	58.72	41.28	45.27	54.73	51.72	48.28
x. Sarpang	48.01	51.99	47.06	52.94	53.41	46.59	48.08	51.92	49.97	50.03	58.55	41.45
xi. Zhemgang	49.18	50.82	29.19	70.81	51.53	48.47	43.19	56.81	43.90	56.10	52.12	47.88
xii. Trnogsa	38.58	61.42	45.93	54.07	24.11	75.89	56.39	43.61	59.94	40.06	49.55	50.45
xiii. Lhuentse	43.64	56.36	47.32	52.68	49.55	50.45	49.17	50.83	42.01	57.99	42.31	57.69
xiv. Mongar	48.35	51.65	45.50	54.50	39.69	60.31	57.16	42.84	56.60	43.40	56.45	43.55
xv. Pemagatshel	45.03	54.97	38.38	61.62	36.71	63.29	50.47	49.53	65.39	34.61	54.62	45.38
xvi. S/Jongkhar	55.90	44.10	50.62	49.38	58.70	41.30	64.55	35.45	63.79	36.21	63.04	36.96
xvii. Trashigang	40.89	59.11	52.73	47.27	60.43	39.57	56.22	43.78	54.89	45.11	65.66	34.34
xviii. Thimphu	54.77	45.23	38.68	61.32	32.32	67.68	41.14	58.86	45.64	54.36	45.49	54.51
xix. Gasa	52.59	47.41	54.50	45.50	57.61	42.39	30.72	69.28	52.27	47.73	46.72	53.28
xx. Trashiyangtse	52.33	47.67	45.85	54.15	51.13	51.21	62.92	37.08	52.23	47.77	46.99	53.01
Total Dzongkhags	49.67	50.72	45.57	54.43	43.72	56.35	50.00	50.00	52.51	47.49	53.92	50.87

Source: Annual PEE Tables.

3.6 Donor Financing of PEE

The donor financing percentage of environment expenditure is relatively high in Bhutan. With regard to some institutions where natural environment and biodiversity management responsibilities were implementing the activities itself, donor financing was either 100 percent or close. Forestry sector is a good example. With regard to some activities, donor financing covered full cost of current expenditure including special salary allowances but not the normal salaries.

In general, the average level of donor financing of annual environmental expenditure averaged 34 percent during the 9th Plan period. The annual variations and variations among programs and activities were prominent. Similarly, there were few programs, such as industries and road safety and transport where no donor financing was recorded in any of the years during the plan period. Details of donor financing levels are presented in Table 3.7, where donor financing in terms of values (Nu. in million) and in percentage are given.

Table 3.8 reveals that the average level of donor financing of PEE during the 9th Plan period was 38 percent. The proportion of donor financing differed in the case of central government institutions, where the financing was about 42 percent to that of 14 percent in the Dzongkhags and less than 13 percent at the Geogs. This shows that the disparity of donor financing is not just among the programs of expenditure but with regard to location of expenditures as well.

3.7 Decentralization Experience

The decentralization process of involving people's participation in management was commenced in RGoB during the late 1970s with the establishment of Dzongkhag Yargye Tshogdue (DYT) as a semi-representative District Development Committee comprising of Gups as head of a Geog (block) and Chimis as the representatives of the people to the National Assembly. The process was strengthened during the 5th FYP period (1981 -1986) by delegating administrative and financial powers to the Dzongkhag levels and also by increasing the staff capacity of the Dzongkhags.

The decentralization effort was increased substantially with the implementation of the 9th FYP with the allocation of budgetary funds to meet prescribed responsibilities of Dzongkhags and Geogs. In fact, during the 7th Plan period, activities related to key economic sectors such as RNR, health, education trade and industry, rural roads and community development were assigned to Dzongkhags and Geogs.

Provisions for training and capacity development of staff were also provided to build a stronger foundation for devolving planning and implementation functions. A decentralized planning framework commenced along with the formulation of the 9th FYP, where Geog plans were aggregated at Dzongkhags and thereafter at the national levels. Funds were also allocated directly to both the above decentralized levels.

The establishment of Department of Local Government (DLG) in 2005, within the Ministry of Home and Cultural Affairs, represents significant strengthening of the decentralization policy of Bhutan. DLG now provides a focused institutional framework for the promotion of an enabling policy and regulatory environment for local government with a mandate to advise on policy formulation, monitoring policy outcomes and supporting capacity development of local governments.

The study of PEE of Bhutan collected public expenditure performance information with regard to budgetary allocations made to Dzongkhags and Geogs during the 9th FYP. The experience shows that the performance of finances allocated in the budget during the first year of 9th Plan, i.e. 2002 – 2003, was restricted mainly to meet current expenditures for both institutions. The capital allocations made available and expenditure incurred were minimal. The total budgetary allocation made available to Dzongkhags in 2002-2003 was Nu 1,737.4 million, of which only Nu 84.1 million was for the implementation of environment related activities (4.8% of total budget). The expenditure performance of Dzongkhags was impressive with regard to the total budgetary allocation (97.5% for the financial year), whereas the expenditure performance of environmental allocation was 87.4%.

The situation with regard to Geogs was much different. The total budgetary allocation for all Geogs in 2002-2003 was Nu 52.0 million, of which environmental activities received an allocation of Nu 6.7 million (12.9%). The expenditure performance as against these allocations was 84.8% of the total allocation and 35.9% of the environmental allocation.

Detailed information on budgetary allocations and expenditure performance of Dzongkhags and of Geogs during the 9th Plan period is presented in **Table 3.9**, in value terms and in **Table 3.10** the same in percentages.

The experience of decentralization explained in Table 3.10 is depicted in Diagram 3.6 where experience of Dzongkhags and Geogs could be compared visually.

Table 3.8: FOREIGN FINANCING OF PEE: 2002-20003 TO 2007-2008

(Values in Nu. Million)

Budget Program	2002-2003			2003-2004			2004-2005			2005-2006			2006-2007			2007-2008			Total		
	Env. Exp	F. Fin	F. Fin %	Env. Exp	F. Fin	F. Fin %	Env. Exp	F. Fin	F. Fin %	Env. Exp	F. Fin	F. Fin %	Env. Exp	F. Fin	F. Fin %	Env. Exp	F. Fin	F. Fin %	Env. Exp	Donor Fin.	F. Fin %
General Administration	152.9	121.4	79.4	182.3	121.3	66.5	118.7	83.3	70.2	138.1	96.4	69.8	171.0	76.4	44.7	190.8	70.8	37.1	953.7	569.6	59.7
Agriculture Services	300.8	100.5	33.4	6.6	6.6	100.0	20.3	20.3	100.0	21.4	21.4	100.0	13.6	13.6	100.0	27.3	25.7	94.0	390.0	188.0	48.2
Forest Services	230.5	85.0	36.9	246.5	77.0	31.2	281.0	66.7	23.7	331.6	84.0	25.3	371.9	63.7	17.1	331.3	42.4	12.8	1792.9	418.8	23.4
Council of RNR Research				109.5	75.4	68.9	97.2	55.2	56.8	132.7	54.8	41.3	106.8	20.3	19.0	93.5	21.0	22.4	539.8	226.7	42.0
Geology and Mines Services	12.6	6.2	49.7	20.3	10.3	50.6	40.8	19.7	48.3	45.7	18.3	40.0	32.5	12.4	38.1	47.0	6.9	14.8	198.9	73.8	37.1
Energy Services	188.1	100.2	53.3	82.6	50.2	60.8	68.6	16.8	24.4	155.3	44.9	28.9	101.9	46.7	45.9	69.0	43.9	63.7	665.5	302.8	45.5
Industry Services	22.1	0.0	0.0	6.2	0.0	0.0	19.3	0.0	0.0	21.2	0.0	0.0	49.2	0.1	0.2	36.2	0.0	0.0	154.0	0.1	0.1
Tourism Services	0.3	0.0	0.0	2.1	1.9	89.8	0.7	0.7	100.0	2.5	0.9	37.4							5.5	3.5	63.3
Road Safety & Transport Services	5.1	0.0	0.0	5.8	0.0	0.0	8.2	0.0	0.1	7.8	0.0	0.0	16.0	0.0	0.0	9.7	0.0		52.5	0.0	0.0
Urban Development & Engineering Services	70.7	49.3	69.8	208.2	154.7	74.3	150.5	117.1	77.8	30.9	24.1	78.0	63.0	55.8	88.5	60.1	53.3	88.7	583.4	454.3	77.9
Local Governance Service										3.5	0.2	6.2	13.1	3.3	24.9	8.7	4.7	54.3	25.3	8.2	32.5
Total Central Government	983.0	462.6	47.1	870.1	494.7	57.2	805.3	397.7	47.2	890.7	345.0	38.7	938.9	292.4	31.1	873.5	268.7	30.8	5361.4	2245.8	41.9

Table 3.8: FOREIGN FINANCING OF PEE: 2002-20003 TO 2007-2008 (Continued)

(Values in Nu. Million)

8. Dzongkhag Administration																					
i. Chukka	4.0	0.7	16.2	4.3	1.5	35.8	1.3	1.4	111.4	5.0	1.6	33.1	12.4	6.8	55.1	12.2	1.9	15.8	39.1	14.0	35.8
ii. Haa	3.6	1.2	34.9	2.7	0.5	18.2	3.3	1.3	39.6	5.1	4.9	96.0	6.2	3.4	54.0	4.5	0.2	5.3	25.4	11.5	45.4
iii. Paro	5.2	1.5	28.9	5.7	1.7	28.9	6.5	2.8	43.2	5.0	1.3	25.9	8.3	0.9	11.0	9.7	0.9	9.7	40.6	9.2	22.6
iv. Samste	2.4	0.0	0.0	7.2	0.0	0.0	7.7	0.0	0.0	6.7	0.0	0.0	14.9	0.2	1.3	7.1	0.0	0.0	46.1	0.2	0.4
v. Tsirang	7.4	0.0	0.0	7.0	0.0	0.0	3.6	0.0	0.0	3.4	0.0	0.0	5.9	0.0	0.0	9.1	0.0	0.0	36.3	0.0	0.0
vi. Dagana	1.9	0.0	0.0	3.7	2.0	52.1	4.1	0.0	0.0	6.5	0.0	0.0	6.0	0.0	0.0	10.9	0.0	0.0	33.1	2.0	5.9
vii. Punakha	2.3	0.0	0.0	1.2	0.0	0.0	3.4	0.1	1.9	5.1	0.0	0.0	14.8	0.0	0.0	6.4	0.0	0.0	33.2	0.1	0.2
viii. W/Phodrang	3.2	0.0	0.0	4.4	0.0	0.0	3.1	0.0	0.0	4.2	0.0	0.0	5.1	0.3	5.6	10.7	0.0	0.0	30.6	0.3	0.9
ix. Bumthang	2.0	0.0	0.0	1.7	0.3	18.3	1.8	0.4	20.9	2.2	0.2	8.3	6.3	0.3	4.0	2.7	0.1	3.7	16.7	1.2	7.4
x. Sarpang	12.2	0.0	0.0	3.8	0.6	16.8	16.5	1.3	8.1	5.7	0.4	7.2	14.1	0.6	4.4	13.5	0.1	0.7	65.8	3.1	4.7
xi. Zhemgang	3.5	0.6	17.7	2.4	1.7	68.7	4.5	1.8	41.1	3.7	1.2	31.4	10.5	6.5	62.2	4.0	1.0	24.7	28.6	12.8	44.7
xii. Trnogsa	2.6	0.4	14.9	1.3	0.1	10.9	3.1	0.4	12.1	5.6	2.3	41.1	3.9	0.8	20.6	5.9	3.7	63.8	22.3	7.7	34.7
xiii. Lhuentse	3.1	0.7	23.9	1.3	0.3	20.5	5.9	1.1	18.7	2.5	0.5	20.6	3.2	0.6	19.6	7.8	0.3	4.4	23.8	3.6	15.1
xiv. Mongar	3.2	0.0	0.0	2.1	0.0	0.0	11.7	1.5	12.6	5.4	0.9	16.4	8.4	1.0	12.3	5.8	0.4	7.5	36.7	3.8	10.5
xv. Pemagatshel	2.6	0.0	0.0	1.7	0.0	0.0	1.6	0.0	0.0	2.3	0.0	0.0	3.3	0.8	23.8	6.6	0.2	2.6	18.0	1.0	5.3
xvi. S/Jongkhar	2.1	0.0	0.0	3.7	0.0	0.0	3.6	0.4	11.4	5.4	0.0	0.0	6.6	0.2	2.8	7.1	0.0	0.0	28.5	0.6	2.1
xvii. Trashigang	3.8	0.0	0.0	1.9	0.0	0.0	4.4	0.8	18.2	6.8	0.6	8.3	9.9	1.2	12.3	11.2	0.7	5.9	38.0	3.2	8.5
xviii. Thimphu	5.2	2.9	57.0	7.8	5.7	74.0	4.6	1.5	32.5	5.0	1.3	25.7	4.1	0.0	1.0	4.7	0.2	4.2	31.3	11.7	37.3
xix. Gasa	1.1	0.0	0.0	1.6	0.0	0.0	1.3	0.0	0.0	2.4	0.0	0.0	1.5	0.2	10.5	2.9	0.9	30.3	10.8	1.1	9.7
xx. Trashiyangtse	2.5	0.0	0.0	2.4	0.0	0.0	1.6	0.0	0.0	2.1	0.0	0.0	2.3	0.0	0.0	4.3	0.2	5.1	15.3	0.2	1.4
Total Dzongkhags	73.6	8.1	11.0	68.1	14.4	21.1	93.5	14.8	15.8	90.0	15.2	16.8	148.0	23.9	16.1	146.9	10.9	7.4	620.1	87.2	14.1
Total Geogs	2.4	1.4	57.8	13.3	4.6	34.6	16.6	8.3	49.8	36.3	5.3	14.5	70.3	8.2	11.7	95.8	2.2	2.3	234.7	29.9	12.8
Total	1059.0	472.1	44.6	951.4	516.4	54.3	915.3	402.8	44.0	1017.0	365.4	35.9	1157.3	324.4	28.0	1116.2	281.9	25.3	6216.2	2362.9	38.0

Table 3.9: Revised Budgetary Allocation and Expenditure: Decentralized Institutions

(Values in Nu Million)

Year	Total Allocation		Total Expenditure		Total Env. Allocation		Total Env. Expenditure	
	Dzongkhags	Geogs	Dzongkhags	Geogs	Dzongkhags	Geogs	Dzongkhags	Geogs
2002-2003	1737.409	52.023	1693.766	44.127	84.181	6.708	73.562	2.410
2003-2004	2113.208	287.779	1884.996	157.603	85.784	18.938	68.061	13.29
2004-2005	2628.353	445.244	2352.947	319.583	2.057	22.383	1.519	16.58
2005-2006	4002.549	414.32	2755.534	318.25	107.313	50.3032	90.012	36.32
2006-2007	4313.699	585.994	3736.464	404.662	2.433	94.894	2.111	70.292
2007-2008	4406.667	482.022	3845.475	340.436	176.948	123.140	146.934	95.829
Total	19201.885	2267.382	16269.182	1584.661	458.716	316.367	382.199	234.721

Table 3.10: Revised Budgetary Allocation and Expenditure: Decentralized Institutions

(Percentages)

Year	Total Allocation		Total Expenditure		Total Env. Allocation		Total Env. Expenditure	
	Dzongkhags	Geogs	Dzongkhags	Geogs	Dzongkhags	Geogs	Dzongkhags	Geogs
	(as % of total revised Budget)				(as % of total revised allocation)			
2002-2003	15.46	0.46	16.59	0.43	4.85	12.89	4.34	5.46
2003-2004	15.09	2.05	17.24	1.44	4.06	6.58	3.61	8.43
2004-2005	15.45	2.62	17.35	2.36	0.08	5.03	0.06	5.19
2005-2006	20.89	2.16	17.22	1.99	2.68	12.14	3.27	11.41
2006-2007	20.07	2.73	22.93	2.48	0.06	16.19	0.06	17.37
2007-2008	16.31	1.78	17.63	1.56	4.02	25.55	3.82	28.15
Total	17.47	2.06	18.32	1.78	2.39	13.95	2.35	14.81

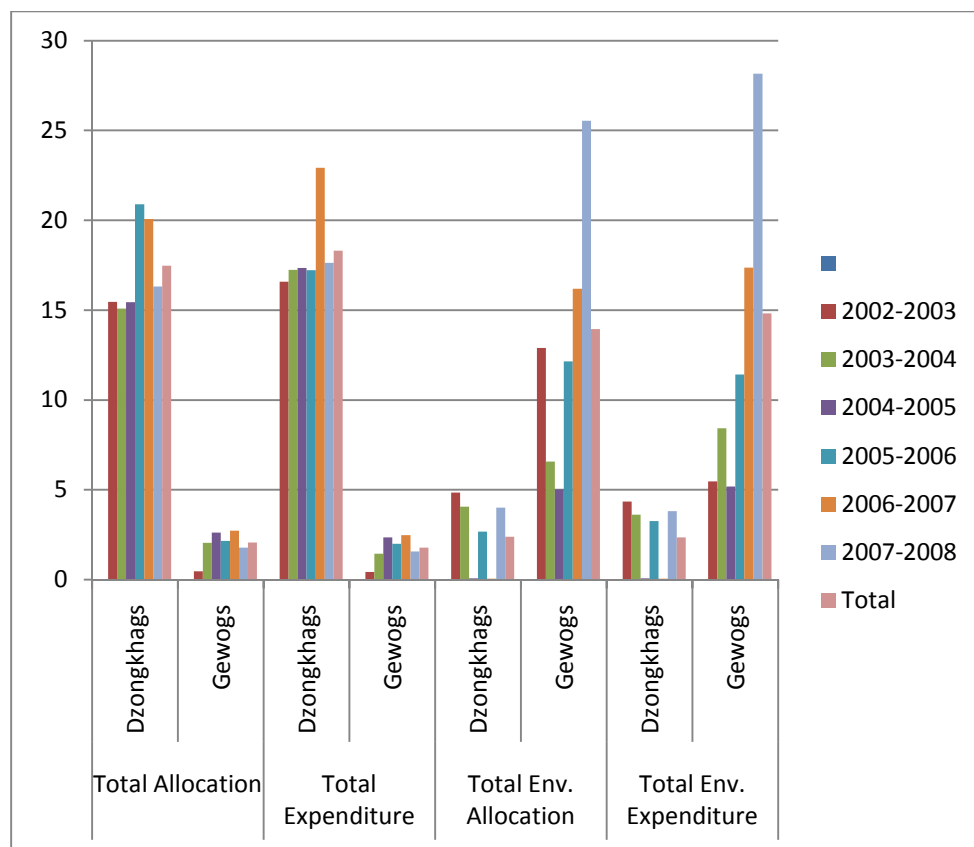


Diagram 3.5: Decentralized expenditure performance of Dzongkhags and Geogs of PEE during 9th Plan Period

CHAPTER 4: FINDINGS OF PEE ANALYSIS OF BHUTAN

4.1 Limitations of the PEE Analysis

There were few limitations in conducting the PEE analysis of Bhutan. These could be summarized as follows.

- i. There was no internationally accepted definition of PEE so that projects and activities implemented by the Government have been identified according to the definition developed by the consultants. The definition used in different country studies may be different to each other. In fact, the absence of an internationally accepted definition of PEE compelled the study to incorporate country priorities on environment as the inherent basis and thereafter selected projects and activities to fit into those priorities. This created a limitation of comparing the findings across countries. For example, some of the environmental activities included in the present exercise may not be picked up for similar studies conducted elsewhere.
- ii. There were limitations in analyzing actual environmental expenditure information from economic classification that were recorded together in expenditure accounts.. For example, the accounting principles accept that all current expenditure items, irrespective of whether they are for environmental activities or not be recorded under one account. Segregation of such recorded expenditure into identified environmental activities is not possible unless a 'work study' is carried out. This again creates further limitation on data collection and data interpretation.
- iii. According to the environmental guidelines issued by the authorities for implementation of projects in different sectors, such as road construction and construction of power transmission lines etc, strict environmental guidelines had to be followed and environmental friendly construction methods required to be used. These measures increase the cost of environmental projects, depending on the location of projects and sector. Unless respective 'Bills of Quantities' are analyzed in detail, there is no possibility of estimating the additional cost that were incurred due to environmental expenditures. These costs are not recorded in financial expenditure statements and it is therefore, possible to conclude that the PEE estimate thus derived could be inaccurate.

4.2 Findings of PEE Analysis

Subject to the above limitations, the analysis of the PEE study of Bhutan detailed out in Chapter 3 derived the following main findings.

1. The PEE of Bhutan during the 9th FYP averaged about 7.5 percent of the total public expenditure from 2002-2003 to 2007-2008. This level of PEE works out to about 2.8 percent of the GDP of the same period. When compared with the published figures of other countries of the world, the PEE is relatively higher in Bhutan. For example, the Pollution Abatement and Control Study carried out in OECD countries in 1996 recorded that the Pollution Abatement and Control⁸ Expenditure of some member countries is as follows.

Country	Year	PEE as a % of GDP
1. Australia	1991	0.5
2. Canada	1991	0.7
3. Japan	1990	1.0
4. Germany	1992	0.9
5. Netherlands	1992	1.2
6. Switzerland	1992	1.0
7. U.S.A.	1992	0.7
8. U.K.	1990	0.4

In similar study carried out in Argentina covering the period 1990s, concluded that the PEE as a percentage of public expenditure was only 0.21 and as a percent of GDP during the same period was 0.4⁹. When compared with the above international experiences, the performance of RGoB is highly impressive.

⁸ In fact, according to OECD definition of environment, it is mainly the expenditure incurred on pollution abatement and control. Please refer the study titled the same and published in 1996.

⁹ Public Environment Expenditure in Argentina in 1990s, Mariana Conte Grande, 2002.

2. However, it is important to note that the rate of PEE experienced both as percentages of total public expenditure and GDP, experienced a declining trend during the 9th Plan period. In fact, the level of PEE during the first year of 9th Plan, i.e. in 2002-2003, showed the highest level of 10.2 percent compared to any other country in the world. The PEE as a ratio of GDP in the same year was estimated at 3.6 percent. In Bhutan, no other sector also achieved similar high performance rates during the 9th plan period. However, the government was not able to maintain the same proportions throughout the plan period, even though the absolute amount of public expenditure incurred in environment at current prices was maintained at the same level. With the increase of total public expenditure and the total GDP, the proportion declines over time.

3. The analysis implies that the expenditure performance of public sector institutions was rather at a low level. While the total expenditure performance of environment related institutions averaged 81 percent of the total budget allocation, the average expenditure in environment related activities showed only 67 percent performance. This low performance of environmental activities would have caused the decline of the sector expenditure performance over the years.

4. Out of the environment related institutions, there were four main institutions responsible for almost 50 percent of the total expenditure. These were:

- Ministry of Agriculture (Department of Forestry, Council of RNR Research for Bhutan and the National Biodiversity Centre) and
- Ministry of Economic Affairs (Department of Energy)

The other large spending institutions implementing environment related activities were the Department of Urban Development and Engineering Services of the Ministry of Works and Human Settlement and the Department of Agriculture under the Ministry of Agriculture.

5. Based on the present status of natural environment of Bhutan and the strategies proposed in the 10th Plan for implementation, there is no doubt that several new areas could be opened for expanding public environmental expenditure. The eco-tourism sector could be one such area that presents considerable scope and potential for development. The implementation of a well structured eco-tourism development plan could easily increase the future PEE of Bhutan and help maintain a high level of PEE like the one achieved during the early period of the 9th FYP.

6. The environmental domain classification projected a low level of public expenditure incurred in soil and water conservation and waste management sectors. The decline experienced in the soil and water conservation could be attributed to the shift in RNR sector policy that put more impetus on production, access and marketing during the 9th FYP. The study suggests that the government consider this situation and take remedial action to implement some well focused activities to improve the soil and water conservation situation because lack of focused attention could no doubt aggravate the future rate of land degradation.

7. The low level of current expenditure recorded in the PEE was basically due to non inclusion of funds for current expenditure under most of the environmental activities. As mentioned elsewhere, it is an accounting strategy to pool all current expenditure of all Sub Programs of institutions under the common expenditure item of “Direction Services”. Accordingly, other sub activities do not receive current allocation and, therefore, the expenditure statements provide zero values. In accounting terms, this may be a correct move but economically it is an incorrect presentation of costs.

8. Following the same accounting procedure, the current expenditure estimate could give an over-estimation of the actual costs due to inclusion of costs related to non environmental activities.

9. Average proportion of donor financing of environmental expenditure in Bhutan is high. With regard to some environmental projects, donor financing is available to cover 100 percent of the total cost. However, it was observed that there were few other budget programs where no donor financing was forthcoming. Having the two extremes, the average proportion of donor financing was approximately 38 percent of the total environmental expenditure during the 9th Plan period.

10. The 9th Plan period also evidenced a period of high performance in government’s decentralization efforts. Although decentralized budget allocations were provided only with the implementation of 9th Plan, towards the end of the Plan period, the allocations made available to Dzongkhags and Geogs accounted for 20 percent of the total budget and their expenditure also reached the same level. However, the level of environmental allocation was rather low.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

The study concluded the performance of RGoB in the field of PEE was highly impressive compared to achievements of other countries in the world. Available information showed that the RGoB performance was much higher than that of most of other developed countries of the world. In fact, the high level of PEE paid dividends to the country in terms of its ability to maintain its natural environment intact with clean air, water and soil conditions.

The study recommends that RGoB maintain the same level of PEE and take necessary measures to sustain the environmental achievements gained through public sector interventions and investments.

The study also concludes that during the last few years, PEE performance had declined and the level of achievement has slowed down. This could be attributed to the competing demands for budgetary resources from other material sectors. Considering the cost of environmental damages that could result in the future, the study recommends that the planning and budget authorities take innovative measures to allocate sufficient funds to the environmental sectors to balance the demand for resources between material production and environment maintenance.

The analysis also indicates that there is a considerable proportion of under expenditure of budgetary resources in the environmental sector. The under expenditure could be one of the reasons for the PEE decline experienced during the past few years. Since it is an area that could be corrected within the system itself, the study recommends that the project monitoring authorities take suitable measures to continuously monitor project implementation and take action to improve the rate of utilization of budgetary resources made available to the institutions or projects.

The low rate of foreign resources utilization is also a concern that requires attention. Bhutan is in a fortunate situation to attract more and more foreign resources for its development. Environment is an area where donor agencies are more willing to support and Bhutan is in an advantageous position in this respect. However, it is important that project implementation authorities take necessary action to increase the rate of utilization of scarce foreign resources. In fact, an increased rate of resource utilization will no doubt increase the rate of aid inflow with the satisfaction of donor agencies on the positive impacts of their assistance.

The analysis identified few environmental areas that require improvement for increasing the growth of agricultural production and land productivity of the country. One such important area is the soil and water conservation. It is observed that during the past few years, the level of expenditure in soil and water conservation area has declined. This could result in soil degradation and also erosion problems causing damages to agricultural land, which is a limited resource in Bhutan. The study therefore recommends that authorities take immediate action to develop suitable projects and activities to increase public expenditure in the area of soil and water conservation.

The analysis also points out that the economic sectors selected for better environmental management have reduced as well. The best way of addressing this issue and increasing the level of expenditure of environment in the future is to identify new economic sector and develop new environmental projects for implementation. A promising sector for consideration would be the eco-tourism sector, which offers plenty of opportunities for Bhutan. The country's rich biodiversity and extensive natural resource base provides an immense potential for the development of eco-tourism that most countries have lost. It is also an economic sector that has a lot of forward and backward linkages. The study therefore recommends looking for ways and means of introducing new economic sectors into the environmental sphere and increasing the level of public expenditure. This would enable the RGoB to attain high level of PEE and also be able to sustain it over time.

As a remedial measure to fight declining PEE rate, the Government could introduce new policies to encourage semi government institutions (mainly public corporations where no direct budget allocations are made but are allowed to operate as independent organizations with internal resource mobilization measures) to fill the gap in the reduction of direct government expenditure. One good example is the functioning of the National Resources Development Corporation Ltd (NRDCL). In certain designated areas of the forests, NRDCL is allowed to extract timber, following environmentally friendly methods and to undertake complete redevelopment of the areas with reforestation programs under the supervision of the Department Forest. Nursery development, maintenance, replanting, maintenance of replanted forests are some of the activities that the NRDCL carries out, while they are allowed to mobilize resources through sale of extracted timber incurring all costs involved in timber extraction.

Accordingly, the study proposes to implement innovative and new measures as alternatives for increasing the level of public expenditure without depending on direct budgetary funds.

List of officials met

1. Karma Lhamo, Chief Planning Officer, Local Development Division, MoHCA
2. Tenzin Chophel, Chief Planning Officer, Ministry of Agriculture
3. Lhaden Pema, Chief Planning Officer, Ministry of Work and Human Settlement (MoWHS)
4. Sonam Desel, Environment Officer, MoWHS
5. Dawa Zangmo, Environment Officer, MoWHS
6. M.P. Nepal, General Manager, National Housing Development Corporation (NHDC)
7. Loknath Chapagai, Chief Industries officer, MoEA
8. Sonam Tashi, Senior Planning Officer, MoEA
9. Nim Dorji, Director, Department of Public Accounts (DPA)
10. Sonam Tobgay, Dy. Chief Accounts Officer, DPA
11. Sonam Yangle, Director General, National Environment Commission
12. Gyem Tshering, Dy. Managing Director, NRDCL
13. Namgay Jamtsho, NRDCL
14. Sonam Chophel, NRDCL
15. Sangay Gyeltshen, NRDCL
16. Narayan Pradhan, NRDCL
17. Tashi Geley, NRDCL
18. Rinchen, NRDCL
19. T. Wangchuk, NRDCL
20. Karma Lodey Raptan, Head Environment Unit, UNDP
21. Tashi Dorji, Poverty Environment Initiative Officer, UNDP, Bhutan
22. Paul Steele, Environment Advisor, UNDP, Bangkok
23. Karma Tenzin, Program Officer, WWF
24. Dr. Lam Dorji, Executive Director, RSPN

Annexure 1: DEFINITION OF ENVIRONMENT FOR PUBLIC ENVIRONMENTAL EXPENDITURE OF BHUTAN

As per the terms of reference of the assignment, Public Environment Expenditure Review study should necessarily cover public expenditure incurred on the Environment and Natural Resources (ENR) Sector of Bhutan during the 9th Five Year Plan (FYP) period. In conducting the expenditure review analysis, an initial requirement will be to identify the environment related expenditure items from the entire spectrum of the public expenditure pool and for this purpose a pre-requisite will be to define the “Environment and Natural Resource Sector”. This means, it is necessary to define the boundaries of Public Environmental Expenditure (PEE) in Bhutan.

Definition of Environment used in the Literature

The definition of ENR directs the consultants to deal with expenditures related to general environment and natural resources field, taking into consideration not only direct expenditure targeted towards improving the management of environment but also to protect and control human activities that may have an impact on the environment and natural resources. In other words, public expenditure directed to the development and management of both natural and built environment as well as to include expenditures that will have an indirect impact on the environment need to be identified and included in the analysis. Therefore, the definition of “environment” that will be used for the study encompasses public expenditures that specifically deal with the following activities.

- i. Protect and maintain the natural status of ecosystems, including vegetation, animals, microorganisms, soil, atmosphere and natural phenomena;
- ii. Measures taken to safeguard the quality of natural resources, such as water and air, available for public consumption;
- iii. Measures taken to release wastes and refuse to the environment without causing damages or pollution to the environment;
- iv. Expenditures undertaken to develop alternative livelihoods for those who are directly dependant on natural resources to reduce their future demand for such resources; and

- v. Expenditures incurred to improve the quality of goods consumed by the people to reduce adverse impacts on the environment.

The inclusion of public expenditure activities listed above needs to be compared with the definition of environment used elsewhere in conducting similar studies. The most important definition of environment emanating from such studies is the one used by OECD to collect comparable information from its member countries. The definition used in 1970s, which is named as ‘pollution abatement and control’ (PAC) expenditure framework, was refined in the 1980s and 1990, and currently used as “PAC expenditure plus protection of biodiversity and landscape, and research and development (R&D) in environment”. This is equivalent to the definition used by the European System for the Collection of Economic Information on the Environment (SERIEE). It is important to note that current OECD definition of environmental protection excludes expenditure on water supply arguing that “they do not have unambiguous impacts on the environment” but justifies the activities of providing especially drinking water supply facilities to rural communities to provide safe drinking water to replace use of water collected from open sources. Such activities will no doubt help to protect the environment from uncontrolled human activities. The waste water treatment and disposal of treated water to the streams will, however, be an environmental expenditure, due to the simple argument that it is “pollution abatement expenditure”.

The System of Integrated Environmental and Economic Accounting (SEEA) attempts to account for the environment and natural resources integrated with National Accounts of countries. A more detailed subset of SEEA had been developed for European Union countries by Eurostat as the European System for the Collection of Economic Information on the Environment (SERIEE). The SEEA/SERIEE follows the definition of environment as “those which reduce or eliminate pressure on the environment and which aim at making more efficient use of natural resources”. Under this definition, it is accepted that it includes activities that are not necessarily carried out for environmental reasons but which nevertheless produce clear and measurable environmental benefits. Accordingly, all activities that fall within the purview of following areas have been included in the SEER definition.

- Environmental protection activities;
- Natural resource management and exploration activities;
- Environmentally beneficial and promotion activities; and
- Minimization of natural hazards.

This shows that SEER definition of environment includes, in addition to abatement and controls of pollution, all other activities that help to protect and maintain the environment. That means all activities aimed at controlling negative effects on the environment have also been included under the definition of environment. The SEER definition is therefore, actions focused on development, management, administration and exploitation of the following natural resources.

- | | |
|-------------------------|--|
| • Subsoil assets | - Administration of permits, planning, supervision, regulation of exploration and extraction |
| • Inland waters | - Administration of waterways and water bodies, supervision, research, legislation water policing related to exploration, extraction, treatment and distribution |
| • Forest resources | - Maintenance of natural resource inventories, research on forestry development, regulation related to silvicultural activities including harvesting and reforestation |
| • Wild Flora and Fauna- | Supervision and control of fishing fleets, assessment of stocks, administration of licenses, regulation focused on fishing, hunting and harvesting of wild floral resources. |

There are several other definitions of environment and classifications of environmental expenditures. The Classification of Environmental Protection Activities and Expenditures (CEPA), the Classification of the Functions of Government (COFOG), and several other country specific classifications have been developed for the purpose. Based on the wide variations found in the individual definitions of the studies stated above, the World Bank study on “Public Environmental Expenditure Reviews (PEERs), Experience and Emerging Practice” proposed that the following would be a general definition for public environmental expenditure.

“Expenditure by public institutions for purposeful activities aimed directly at the prevention, reduction and elimination of pollution or any other degradation of the environment resulting from human activity, as well as natural resource management activities not aimed at resource exploitation or production”.

The above definition indicates that activities aimed at resource exploitation or production shall not be included in public environmental expenditures. However, the public institutions are compelled to implement several activities to monitor resource exploitation and correct possible environmental hazards that could be created due to resource exploitation. A good example is the refilling or correction of mining sites after completion of exploitation. Therefore, in the present assignment, it is important to agree on a definition of environment applicable to the environmental situation of Bhutan and concentrate on institutions and activities that fall within the agreed definition. For this purpose, the consultants proposes to follow the definition that is being developed by the World Bank and accommodate basic concerns of environment incorporated in the 9th FYP of the Royal Government of Bhutan (RGOB) to come out with a suitable definition for agreement.

Definition of Public Environmental Expenditure

The definition of Public Environment Expenditure (PEE) used in this study will be based on the proposed World Bank definition stated above. Accordingly, public expenditure on environmental protection activities are defined as activities carried out by the public sector institutions aimed at prevention, reduction and elimination of pollution or degradation of environmental quality either resulting from human activity as well as for improving the living conditions of communities while reducing the demand for environmental resources. It is important to note that this definition includes several public sector expenditure aimed at addressing the main issues of unemployment and addressing the socio economic status of especially the rural communities that will reduce the demand for natural resources for their livelihoods and also for the improvement of living conditions.

Based on the above definition, Public Environmental Expenditure (PEE) will include budgetary expenditures incurred in the management and protection of natural resources, such as air, water, soil, flora and fauna, and activities aimed at administering, regulating and controlling of unlawful utilization or extraction of natural resources. Accordingly, PEE will be used as a process of entailing the recognition of environmental problems, while accepting that there is a national commitment to address such problems created by human actions and to implement suitable policies, actions and legal and regulative measures to correct any adverse impacts. Accordingly, it is accepted that when private individuals or institutions use natural resources or discharge effluent/waste to the environment, they are liable to pay “user charges” in terms of the “polluter pay” principle. The revenue thus collected by the government will, in-turn, be incurred through budgetary expenditures to correct the adverse impacts created.

Therefore, the expenditures directed on “pollution abatement and control” (PAC) will be one of the main components included in the PEE analysis.

PEE is not just limited only to PAC expenditures. In terms of the definition of environment, governments are compelled to implement several other activities to regulate communities and institutions against excessive use of natural resources beyond the naturally allowable limits that adversely affect the status of environment. Such regulatory actions are necessary to control excessive use of natural resources. Illegal extraction of timber from forests, excessive use of water from natural flows or extract sand or stones from deposits, and other non-timber forest products (NTFPs) beyond their replenishment rates are few such examples. Thus activities to regulate and control such actions deserve to be included under PEE.

Public Environmental Expenditure in Bhutan

The development policies, priorities and strategies of the Royal Government of Bhutan (RGOB) include several sectoral and functional items of expenditures that fall within the definition of PEE. The 9th FYP provides guiding principles for the identification of such expenditures. The strategies laid-down in the 9th FYP on the environment sector include:

i. Preservation of natural resources and biodiversity

Bhutan is widely recognized as an environmental leader owing to its rich biodiversity, pristine forest, and fresh air and water resources. It has high levels of species, genetic and ecosystem diversity with 72% of land area under forest cover. In addition to being among one of the ten global biodiversity ‘hotspots’, it has been identified as one of the 221 Centers of Global Endemic Bird Areas. The country includes a range of ecosystems from subtropics in the south, at an elevation of 200 meters, to mid elevation temperate forests and northern alpine zone at more than 7,500 meters above sea level.

The goal of environmental preservation had, therefore, focused on ensuring the use of natural resources, maintenance of biodiversity, essential ecological processes and life support systems, adequate pollution abatement techniques and environmental management to mitigate the adverse impacts of modernization and industrialization.

ii. Implementation of legal measures

One of the important legislations proposed in the 9th Plan was the enactment of National Environment Protection Act (NEPA). Although there is a high degree of awareness of the importance of protecting the natural resource base, the country has only limited legislation to implement and enforce such policies. Therefore, the environmental law expertise will be developed to provide the rule of law in general, and provide a model for elaborating the legislative process.

In relation to the implementation of the Environmental Assessment (EA) Act 2000, the establishment of a database of regulations, procedures etc that could be accessed through the internet had been identified as necessary. For this purpose, the strengthening of capabilities of key implementing agencies and Dzongkhag administrations, with respect to the implementation of regulations under EA Act 2000 was identified as one area.

iii. **Monitoring of air pollution**

Due to the deteriorating air quality, 9th FYP proposed to establish a baseline and analyze primary and secondary pollutant to assess the ambient air quality, pollution loads from different sources including industries, vehicular and domestic sectors and their impacts of pollution on human health and environment. Provisional emission standards appropriate to the country's conditions were to be established. Emission standards are expected to increase gradually through introduction of better quality fuel and vehicle fitness maintenance systems.

Again, industry specific emission guidelines were to be formulated and enforced to promote cleaner technologies. The objective of the establishment of industrial estates was to help control the pollution and treatment of effluent under cost effective measures due to economies of scale. A mobile emission monitoring unit was to be established with capabilities of analyzing basic air and water quality parameters.

iv. **Management of wastes and waste disposal**

Waste disposal was considered as an emerging problem in the urban areas of Bhutan. To reduce the problem of waste and management, waste disposal without creating a future environmental issue, reduction of waste generation at source was considered a key factor.

For this purpose, communities were to be sensitized on waste reduction at source by promoting use of reusable containers and introducing buying habits. Solid waste management rules were to be refined and implemented, along with guidelines to promote reduction of waste at source.

At the same time, for better management of waste in new satellite towns, effluent management systems were to be introduced. The environment Codes of Practice for Solid Waste Management in Urban Areas, and Environmental Codes of Practice for Sewage and Sanitation Management in Urban Areas were to be served as guidelines for monitoring urban waste management. Since a large number of urban agglomerations did not have municipal industrial waste water management facilities causing deterioration of water quality in rivers, sewage and effluent treatment plants to improve effluent quality from industries and towns were proposed to be established.

In addition to the above strategies related to pollution abatement and control, the following objectives and targets were also set in the 9th FYP.

- a) Vulnerability to food shortages due to flood, drought and other forms of natural disasters causing temporary shortages in food production and supply. Depredation of crops by wildlife, particularly by wild boars, has increased the vulnerability of farmers' livelihood throughout the country. Lack of farm infrastructure was also a major disincentive for increasing farm productivity. In the 9th Plan, therefore, priority was given to the development of farm infrastructure such as farm roads and irrigation channels, storage processing and marketing facilities in addressing the vulnerability to food shortages.
- b) Forestry and agricultural land to be clearly demarcated and rules pertaining to each category were another objective. In this regard, action was proposed to resolve and mitigate conflicts caused by misinterpretation and misunderstanding of the provisions of the Forest and Nature Conservation Act and related legislation. Creation of awareness on legal provisions, swapping of marginal and distant renewable natural resources (RNR) lands with suitable forest lands, prescribe controlled burning of pastures to sustain livestock rearing,

- culling of prolific pest species like wild boars, and promotion of eco and agro tourism as means of providing alternative income to farmers were expected to be implemented.
- c) Measures implemented in the past for the protection of environment and conservation of ecosystems and biodiversity yielded good returns. The challenge identified during the 9th Plan period was to achieve a balance between conservation and socio-economic development of the people. To enable this, the Plan proposed to address the following challenges.
- The increasing conflict between conservation and farming;
 - The increasing demand for timber and wood products;
 - The increasing commercialization of non-wood forest products;
 - The increasing loss of forest land to industrial and infrastructure development; and
 - The sustainability of conservation and protection measures.
- d) With the objective of reducing demand for land and other natural resources for increasing level of employment in the agriculture sector, the small and medium scale industry sector through the introduction of industrial estates and service centers were proposed in the Plan. Also to discourage rural urban migration and increase employment and income increasing opportunities in the rural sector, development of small and micro industries and implementation of entrepreneurship development programs were assigned priority.

The strategies thus proposed in the 9th FYP provides a basis for a wide definition for identification of public sector activities to be carried out with the implementation of direct measures for environmental development. Therefore, Public Environmental Expenditure activities under the 9th FYP could be much broader than under any other definition. The projects and programs providing direct and indirect environmental impacts have to be carefully identified based on the development objectives and strategies of the 9th FYP.

Identification of Environment Institutions and Public Expenditure Items

Matrix 1 given below provides a list of Public Institutions of RGOB and PEE activities, after reviewing the 9th FYP, Annual Budget Proposals of the Plan period and Annual Public Accounts Statements of the

Department of Public Accounts under the classification of PEE definition, but subject to development objectives and strategies of the Plan.

Under each expenditure item, consultants propose to collect data in terms of a detailed economic classification, viz.

- i. Current Expenditure with a breakdown of expenditure on Salaries, Operation and Maintenance of Assets and on 'Other';
- ii. Capital Expenditure
- iii. Total Expenditure (Current + Capital) and
- iv. Financing of Total Expenditure broken down into Local (RGOB)/Foreign.

Matrix Showing Public Sector Institutions Implementing Environmental Programs/Sub Programs and Activities/Projects

Name of Institution	Name of Program / Sub Programs	Names of Activities/Projects
1. Planning Council Secretariat	1. National Planning strategy	• MDG based National Development Strategy
2. National Environment Commission	2. National Environment Management Services 3. National Bio-safety Program 4. National Ozone Unit	• National Environment Management Services – Direction • DANIDA Environment & Urban Sector Program Support (EUSPS) • UNDP Funded Project - Second National Communication to UNFCCC • UNITAR/UNEP Assisted Training & PA to NEC • Capacity Building in Biodiversity & Impact Assessment • Implementation of Montreal Protocol • Support for Implementation of Micro Env. Action Plans • Evaluation of Ecological Status of Rivers • National Sustainable Development Strategy • Aforestation Program in Thimphu • Development of National Biodiversity Framework Project • Environment Mainstreaming Projects - UNDP & UNEP • National Ozone Unit activities
3. Ministry of Agriculture	1. General Administration and Coordination Services 2. National Biodiversity Services	• Wang Watershed Management Project Secretariat • National Biodiversity Center • National Herbarium & Flora • Agro biodiversity Conservation • Royal Botanic Garden • Biodiversity Utilization and Conservation • Development Regulations for Biodiversity Act • Preparation of Biodiversity Action Plan III • Agro Biodiversity Conservation III • Wang Watershed Management Project (WWMP)

	3. Wang Watershed Management Project 4. RNR Information and Communication Services 5. BG-SRDP (GTZ) LOBESA 6. EUPS – Decentralized Natural Resources Management	– Direction Services • WWMP-Support to DoA • WWMP-Support Livestock Services • WWMP-Support to Forestry • Implement Focal Sub Catchment Plans • Plasti-culture and Precision Farming • Direction of Services • Viral Extension, Research and Communication Equipment • Sub Activities on RNR Centers • Enhanced Capacity of Natural Resource Management Units
4. Department of Agriculture (Agricultural Services)	1. Rural Enterprises Development Project 2. National Soil Service Center	• Rural Enterprises Development Project • Soil & Plant Analytical Laboratory • Soil Fertility Unit • Inoculants Production Unit • Soil Services Unit • Sustainable Land Management Services
5. Department of Forests (Forestry Services)	1. Management & Supplementary Services	Selected Sub Activities such as: • Forest Information Management • Forest Fire Prevention • Sustainable Management& Development of Non-wood Products • Development of Non-wood Forest Products • All 19 Divisional Forest Service Centers

	2. Divisional Forest Services	
	3. Conservation and Aforestation Coordination 4. Wildlife Preservation 5. Forestry Training Institute	• Social Forestry Project • National Biodiversity and Wildlife Conservation • All Wildlife Sanctuaries and National Parks • Bhutan Forestry Training Institute • Ugyen Wangchuk Institute of Environment
6. Council of RNR Research for Bhutan	1. Management & Supplementary Services 2. RNR Research Services	• General Administration Services • RNR Research System Phase III All activities under the Program
7. Ministry of Trade & Industry (now MoEA)	1. General Admin. & Direction of Services	• Rural enterprises Development Project • Environment & Urban Sector Program Support III • E-business for Rural Women
8. Department of Trade (Trade Services)	1. Trade Services Management and Supplementary Services	• Construction of Quality Control Laboratory – Improvement of Fuel Quality
9. Department of Geology and Mines	1. Management & Supplementary Services 2. Mapping & Exploration 3. Mining Services 4. Engineering Geology & Geophysics Services	• Mineral Exploration Services • Geological Expedition of Inner Black Mountain • Seismic Data Collection and Hazard Zonation • Mining Evaluation & Development • Mines Inspection & Environment Monitoring • Slope Stability & Environment Analysis Project • Regular Monitoring of Glaciers & Glacial Lakes • Flood Hazard Zonation Mapping •

10. Department of Energy	1. Planning & Coordination 2. Hydromet Services 3. Renewable Energy Services	• Sengor Community Micro Hydro Power Project for Sustainable Livelihood • Bio Energy Technologies for Heat Application • Rural Electrification • Hydromet Service Direction • Flood Warning Services • Alternate Energy Programs
10. Department of Industry	1. Industries Infrastructure Development Services 2. Entrepreneurship Development Program 3. Project Development Services	• Industry Estates and Service Centers • Entrepreneurship Promotion • Environment Management in Industries –EUSPS
11. Ministry of Information & Technology	1. Road Safety and Transport Services	• Awareness Campaigns • Observation of Road Safety Week • Procurement of Road Safety Equipment
12. Department of Local Governance (now Local Development Division)	1. Management & Supplementary Services	• Preparatory Assistance for Disaster Management • MGD Based National Development Strategy-Local Level Initiatives • Disaster Management Activities
13. Dzongkhag Administrations	1. Management and Supplementary Services 2. Forestry Services	• Maintenance of Hot Springs • Participatory Forestry Program • Community Forestry Program
13. Geog Administrations	1. Forestry Services	• Participatory Forestry Program – Plantations and Farmer Training

Annexure 2: Major Environmental Responsibilities of Identified Public Institutions

Name of Institution	Major Responsibilities	Environmental Activities Undertaken
6. Planning Council Secretariat	5. Planning Strategy Development	MDG based National Development Strategy
7. National Environment Commission	6. National Environment Management Services	- Direction of National Environment Management Services - Coordination of - - DANIDA Environment & Urban Sector Program Support (EUSPS) - UNDP - Second National Communication to UNFCCC - Environmental Monitoring Capacity Building of line institutions - Implementation of Montreal Protocol - Implementation of Micro Env. Action Plans - National Sustainable Development Strategy - Development of National Biodiversity Framework - Environment Mainstreaming Projects - UNDP & UNEP - National Ozone Unit activities
8. Ministry of Agriculture	7. General Administration and Coordination Services 8. National Biodiversity Services 9. Wang Watershed Management Project	- Wang Watershed Management Project Secretariat - National Biodiversity Center - National Herbarium & Flora - Agro biodiversity Conservation - Royal Botanic Garden - Biodiversity Utilization and Conservation - Development Regulations for Biodiversity Act - Preparation of Biodiversity Action Plan III - Agro Biodiversity Conservation III - Wang Watershed Management Project (WWMP) – Coordination Services - WWMP-Support Livestock Services - WWMP-Support to Forestry - Implement Focal Sub Catchment Plans - Plasti-culture and Precision Farming

	10. RNR Information and Communication Services 11. BG-SRDP (GTZ) LOBESA 12. EUPS – Decentralized Natural Resources Management	• Direction of Services • Viral Extension, Research and Communication Equipment • Sub Activities on RNR Centers • Enhanced Capacity of Natural Resource Management Units
9. Department of Agriculture (Agricultural Services)	3. Rural Enterprises Development Project 4. National Soil Service Center	• Rural Enterprises Development Project • Soil & Plant Analytical Laboratory • Soil Fertility Unit • Inoculants Production Unit • Soil Services Unit • Sustainable Land Management Services
10. Department of Forests (Forestry Services)	2. Management & Supplementary Services 2. Divisional Forest Services	Selected Sub Activities such as: • Forest Information Management • Forest Fire Prevention • Sustainable Management & Development of Non-wood Products • Development of Non-wood Forest Products • All 19 Divisional Forest Service Centers • Supervision of NRDCL field activities

	3. Conservation and Reforestation Coordination 4. Wildlife Preservation Hydro Power Development5. Forestry Training Institute	• Social Forestry Project • National Biodiversity and Wildlife Conservation • All Wildlife Sanctuaries and National Parks • Bhutan Forestry Training Institute • Ugyen Wangchuk Institute of Environment
6. Council of RNR Research for Bhutan	1. Management & Supplementary Services 2. RNR Research Services	• General Administration Services • RNR Research System Phase III All activities under the Program
7. Ministry of Economic affairs (Trade & Industry)	1. Coordination of implementation of Geological Surveys & Mining Power Development and Distribution Alternative Energy Development	• Rural Enterprises Development Project • Environment & Urban Sector Program Support Project • E-business for Rural Women • Rural Electrification • Solar Power Development
8. Department of Trade (Trade Services)	1. Trade Services Management and Supplementary Services	• Construction of Quality Control Laboratory – Improvement of Fuel Quality
9. Department of Geology and Mines	1. Management & Supplementary Services 2. Mapping & Exploration 3. Mining Services	• Mineral Exploration Services • Geological Expedition of Inner Black Mountain • Seismic Data Collection and Hazard Zonation • Mining Evaluation & Development • Mines Inspection & Environment Monitoring • Slope Stability & Environment Analysis Project • Regular Monitoring of Glaciers & Glacial Lakes • Flood Hazard Zonation Mapping •

	4. Engineering Geology & Geophysics Services	
10. Department of Energy	1. Planning & Coordination 2. Hydromet Services 3. Renewable Energy Services	- Hydro Power Development - Micro Hydro Power Projects for Sustainable Livelihood - Bio Energy Technologies for Heat Application - Rural Electrification - Hydro-meteorology Development - Flood Warning Services - Alternate Energy Programs
10. Department of Industry	1. Industries Infrastructure Development Services 2. Entrepreneurship Development Program 3. Project Development Services	- Industry Estates and Service Centers - Entrepreneurship Promotion - Environment Management in Industries –EUSPS
11. Ministry of Information & Technology	1. Road Safety and Transport Services	- Awareness Campaigns - Observation of Road Safety Week - Monitoring of Road Safety activities - Testing of Vehicle Emission
12. Department of Local Governance (now Local Development Division)	1. Management & Supplementary Services	- Preparatory Assistance for Disaster Management - MGD Based National Development Strategy-Local Level Initiatives - Disaster Management Activities
13. Dzongkhag Administrations	1. Management and Supplementary Services 2. Forestry Services	- Maintenance of Hot Springs - Participatory Forestry Program - Community Forestry Program
13. Geog Administrations	1. Forestry Services	Participatory Forestry Program – Plantations and Farmer Training

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