Public Environmental Expenditure Review of the Royal Government of Bhutan

Fiscal Year
2010-2011, 2011-2012 & 2012-2013

DEPARTMENT OF PUBLIC ACCOUNTS
MINISTRY OF FINANCE
ROYAL GOVERNMENT OF BHUTAN

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August 2014

Preface

The Department of Public Accounts of the Ministry of Finance (DPA, MoF) led the Public Environmental Expenditure Review (PEER) for Bhutan. The PEER is part of the Danida and UNDP/ UNEP PEI assisted Joint Support Programme (JSP) for mainstreaming environment in development and enhancing capacity for environmental management in Bhutan.

A Joint Task Force (JTF) has been established at the technical level with accounting background to mainstream the methodology, design and develop PEE reports into the PEMS system. The Joint Task Force comprises of the focal person from Cabinet Secretariat Office, Gross National Happiness Commission (GNHC), National Environment Commission Secretariat (NECS), Ministry of Agriculture and Forest (MoAF) chaired by the Director General of the Department of Public Accounts.

The format and the structure are kept in consistent with the previous PEER in order to provide a complete understanding of the trends in the 10th FYP. In addition, the PEER concept paper prepared by the former JTF has guided the preparation of the PEER. Further, the comments and suggestions from the UNDP/UNEP PEI Team on the draft have provided a significant input in preparation of the PEER.

Mr. Tsheten Wangchuk from the Department of Public Accounts was the focal person for the preparation of the PEER. The Department contracted an IT consultant to mainstream the methodology and the reports in the PEMS system for the preparation of the PEER.

August 12, 2014
Thimphu

Table of contents

Preface iii
Table of contents v
Abbreviations vii
Executive Summary 1
1. Introduction **3**
2. Purpose and applications of PEER 5
2.1 The PEER approach 5
2.2 Definition of environmental expenditure 8
2.3 Limitations of the PEER 10
2.4 The PEER of the 10th FYP (2008/09-2009/10) 11

3. Methodology and Data Sources **16**
3.1 Data sources for the PEER 16
3.2 Step 1: Development of Web Page for PEE 17
3.3 Step 2: Screening and assigning to PEE 17
3.4 Step 3: System generated reports from PEMS applications 17
3.5 Step 4: Data analysis 17
3.6 PEER updates and applications 18

4. Analysis of Results **20**
4.1 Total and core public environmental expenditures 20
4.2 Analysis of PEE by environmental clusters 22
4.3 Analysis of PEE by RGoB programmes 23
4.4 Analysis of PEE by agencies 25
4.5 Analysis of PEE by economic activity 25
4.6 Analysis of PEE by type and source of funds 26
4.7 PEE and budget efficiency 29
4.8 Changes in PEE from FY 2008-2009 to FY 2012-2013 30
4.9 International comparison: Bench marking 32

5. Findings and Recommendations **33**
5.1 Findings 33
5.2 Recommendations 35
5.2.1 Updates of the PEER 35
5.2.2 Institutional development and anchoring 35
5.2.3 Methodological development and applications 36

5.2.4 Link to 11th Five Year Plan 36
5.2.5 Policy relevance and effectiveness 36

Annex 1: Environmental Classification of PEE in Bhutan 38
Annex 2: Bhutan public finance budget codes 40
Annex 3: PEE Budget Code Functions 41
Annex 4: PEE Data Base Structure 42
Annex 5: Environmental Clusters and RGoB Programmes 43
Annex 6: PEER Summary Table 44
Annex 7: List of References 45

Text Boxes

Box 1: Environment in the 10th Five Year Plan 7
Box 2: Investing in environmental wealth for poverty reduction 9

Figures

Figure 1: Percentage change in total PEE 21
Figure 2: PEE in million Nu. 21
Figure 3: a: Composition of PEE by Environmental Clusters for FY 2010/11 23
b: Composition of PEE by Environmental Clusters for FY 2011/12 23
c: Composition of PEE by Environmental Clusters for FY 2012/13 23
Figure 4: RGoB programmes' share of PEE (2008/09 and 2012/13) 24
Figure 5: Percentage distributon of RGoB and External Funding against Budget and PEE Expenditure 27

Tables

Table 1: Public Environmental Expenditures 2010/11 to 2012/13 20
Table 2: PEE according to environmental clusters 22
Table 3: PEE by RGoB Programmes 24
Table 4: Public Environmental Expenditures by Central and Local Government 24
Table 5: Analysis of PE and PEE by Current and Capital Expenditure 26
Table 6: Public Environmental Expenditures by Type and Source of Funding 27
Table 7: Source of PEE Funding According to Environmental Clusters 28
Table 8: Budget Efficiency of Autonomous Agencies, Central and Local Government 30
Table 9: Share of PEE in Total Public Expenditure 31
Table 10: Change in PEE by agency, source and expenditure type 32

Abbreviations

ADB	:	Asian Development Bank
AFS	:	Annual Financial Statements
AU	:	Administrative Unit code in CBA
BAS	:	Budget and Accounting System
BEO	:	Bhutan Environment Outlook
CDM	:	Clean Development Mechanism
CBA	:	Central Budgeting and Accounting System
COFOG	:	Classification Of Functions Of Government
Danida	:	Danish International Development Assistance
DPA	:	Department of Public Accounts
DRR	:	Disaster Risk Reduction
EFRC	:	Environmentally Friendly Road Construction
EUSPS	:	Environment and Urban Sector Programme Support (Danida)
FIC	:	Financing Item Code
FY	:	Fiscal Year
FYP	:	Five -Year Plan
GEF	:	Global Environmental Facility
GNH	:	Gross National Happiness
GNHC	:	Gross National Happiness Commission
JSP	:	Joint Support Programme (Danida and UNDP/ UNEP)
JTF	:	Joint Task Force
LOD/ROD	:	Liaison Office of Denmark/Resident Office of Denmark
MoAF	:	Ministry of Agriculture and Forests
MoEA	:	Ministry of Economic Affairs
MoHCA	:	Ministry of Home and Cultural Affairs
MoWHS	:	Ministry of Works and Human Settlement

MYRB	:	Multi -Year Rolling Budget
NEC	:	National Environment Commission
NECS	:	National Environment Commission Secretariat
NGO	:	Non-Government Organisation
NSB	:	National Statistics Bureau
Nu	:	Ngultrum (currency of Bhutan)
OBC	:	Object Codes in CBA
PAC	:	Pollution Abatement and Control
PE	:	Public Expenditure
PEE	:	Public Environmental Expenditure
PEER	:	Public Environmental Expenditure Review
PEI	:	Poverty and Environment Initiative (UNDP/UNEP)
PEMS	:	Public Expenditure Management System
PER	:	Public Expenditure Review
R&D	:	Research and Development
RGoB	:	Royal Government of Bhutan
RSPN	:	Royal Society for Protection of Nature

Executive Summary

The Royal Government of Bhutan (RGoB) places overwhelming importance to the conservation of the environment through the overarching development philosophy of *Gross National Happiness* (GNH). A significant milestone reflecting Bhutan's commitment to environmental conservation and sustainable development is the inclusion of a separate Article on the environment in the Constitution of Bhutan. Therefore, environment conservation and sustainable use of natural resources is prioritized in all its developmental plans and policies.

The purpose of this Public Environmental Expenditure Review (PEER) is to ascertain the size and composition of the Public Environmental Expenditures (PEE) and thereby evaluate the government's environmental policies and priorities, as well as its environmental management as reflected in public expenditures.

The PEER covers the last three financial years of the 10th Five Year Plan (FYP) (FY 2010-2011, 2011-2012, and FY 2012-2013) and also draws on the experience from the 2009 PEER covering the 9th FYP and the 2011 PEER covering the initial two financial year of the 10th FYP.

A PEER methodology has been developed to assess PEE in Bhutan. The methodology is based on an environmental classification comprising of nine environmental clusters and 38 sub-clusters of PEE. Public environmental expenditure data for the last three years of the 10th FYP (2010-11, 2011-12, 2012-13) were screened, classified and analysed to get an estimate of the PEE. The data was retrieved from the Public Expenditure Management System (PEMS) and the screening was carried out with reference to all the budget codes at activity and sub-activity levels for the Autonomous agencies, 10 ministries, 20 Dzongkhags and 205 Gewogs.

The budget codes that were classified as PEE were compiled in the PEE database, which is developed in the PEMS system. It has 11,212 entries covering three fiscal years. The format of the database includes administrative unit codes, programme code, activity and sub-activity codes, source of finance, type of budget and expenditure - current and capital. Each budget code is then linked to an environmental cluster and sub-cluster and assigned a unique environmental code. The PEE reports are now developed and generated through the Public Expenditure Management System

(PEMS) although the mapping and tagging of activities and sub activities are done manually.

Total PEE includes all the nine environmental clusters and represents the broad public environmental expenditures that are relevant for assessing GNH objectives. The narrow estimate, referred to as core PEE is based on the first four clusters of public environmental expenditures and conforms to the internationally accepted definition of environmental expenditures viz. 'pollution abatement and control (PAC) expenditure plus protection of biodiversity and landscape, and research and development (R&D) in environment'. As such, the core PEE is more appropriate for the purpose of international comparison.

1. Introduction

The Royal Government of Bhutan (RGoB) has made concerted efforts towards the protection of the natural environment, conservation of the rich biodiversity and prevention of ecological degradation. These efforts have included national legislations, policies and practical guidelines. The Constitution of the Kingdom of Bhutan, mandates every Bhutanese citizen to act as a *"…. trustee of the Kingdom's natural resources and environment for the benefit of present and future generations… "* (Article 5). Conservation of the environment also constitutes one of the four pillars of Bhutan's unique development philosophy of Gross National Happiness (GNH)[1]. GNH is the framework for all development policy objectives in Bhutan, and efforts are being made to account for and monitor progress towards this ultimate goal. The 'Middle Path' has been the National Environment Strategy for sustainable development in Bhutan since 1998, and represents the initial step in this direction.

The RGoB's prioritization of environmental protection is reflected in the national public finance- budget and expenditure. Public expenditure is the primary means of achieving development objectives including protection and management of the environment and sustainable use of natural resources. In order to assess how the public budget is allocated and utilized to achieve the environmental targets in pursuit of GNH, *a Public Environmental Expenditure Review (PEER)* has been prepared. The main objective of the PEER is to provide information about the scale of the *Public Environmental Expenditures* (PEE) and its allocation and utilisation in the different environmental domains.

This PEER covers the last three fiscal years of the 10th Five Year Plan (FYP), i.e. FY 2010-2011, FY 2011-2012 and FY 2012-2013. A methodology was developed for the PEER, which is intended to facilitate future updates of PEE data. It is drawn, partly with reference to the PEER conducted for the 9th FYP in 2009 and the 10th FYP i.e. 2008-2009 and 2010-2011.

The PEER is not an assessment of the state of Bhutan's environment nor is it to be used as source of environmental statistics. Where relevant, reference was made

1 *For further information on Gross National Happiness in Bhutan see the website: www.grossnationalhappiness.com at the Centre for Bhutan Studies.*

to the Bhutan Environment Outlook (BEO) last published in 2008 by the National Environment Commission (NEC), and statistics from the National Statistics Bureau (NSB) including the Statistical Yearbook[2].

The PEER is divided into five Chapters. Chapter 2 gives an overview of the purpose and application of PEER in the context of Bhutan. Chapter 3 explains the methodology used and the data sources for the PEER. The aim was to develop a simple and structured approach that can be aligned with the public financial management system in Bhutan and make future updates feasible. In Chapter 4, analysis and results from the last three fiscal years of the 10th FYP are discussed, and in Chapter 5, the main findings and recommendations for further development of PEER in Bhutan are presented.

2 *With support from Danida from July 2011, NSB will develop its capacity for environmental statistics and 'green national accounting'. The aim is to move towards a full cost environmental accounting for GNH.*

2. Purpose and applications of PEER

2.1 The PEER approach

Public Expenditure Reviews (PERs) are carried out to assess how effectively the public sector allocates budgets and utilises public resources to achieve the country's development objectives. PERs are commonly applied to sectors such as health, education and transport.

A Public Environmental Expenditure Review (PEER) which examines resource allocations and assesses the efficiency and effectiveness of those allocations in the context of the environmental sector is somewhat more difficult, because the 'environment sector' being a composite of many themes from biodiversity conservation to waste management is not as well-defined. In addition, it identifies reforms needed to improve the effectiveness, efficiency and sustainability of public spending for environmental management.

The objectives of the PER and the PEER is to assess:

- **Effectiveness:** An appraisal of whether budgetary allocations are in keeping with the priorities of the 10thFYP, and the effectiveness of the public expenditure in relation to development priorities.

- **Efficiency**: An assessment of the cost efficiency of the public expenditure in delivering outputs and outcomes, i.e. how well the public agencies perform in the delivery of public services. A starting point is an estimation of 'budget efficiency' which can be gauged by the utilization of the allocated budget.

- **Accountability**: An assessment of whether expenditure of the public agencies is according to their mandated functions. The PER/PEER therefore, includes an assessment according to government functions and by agencies.

Public Environmental Expenditure (PEE) whether expressed as an absolute figure or as a percentage of the total public expenditure or professed in terms of GDP may not necessarily reflect the true state of the environment. As noted by Markandya et al. (2006) "a low level of public environmental spending is not in itself an argument for more expenditure; the question is whether government expenditures are effective in meeting environmental priorities". The PEER does not distinguish between

expenditures to repair or prevent environmental degradation, or investments in maintaining environmental quality. A country with a high level of pollution and environmental degradation may find it necessary to maintain a high level of PEE to ameliorate their effects while another country with a clean and pristine environment may also have a similarly high level of PEE to maintain the environmental quality. Variations in the level of PEE from year to year can reflect emerging issues or gaps (e.g. flood damage prevention) and changes in priorities. Relevant data and information can be derived if different environmental domains, institutions and functions examine the PEE, preferably for a period of two or more years.

The effectiveness of the PEE in Bhutan can be measured against the environmental objectives of the 10thFYP (see Box 1). **But for this the objectives need to quantifiable and measurable in order to assess progress.**

An operational measure of effectiveness of PEE is the state of the environment as monitored and documented in the Bhutan Environment Outlook (BEO). The BEO documents changes in the state of the environment in different domains, e.g. air quality and land use. The BEO can be linked to the PEER through a comparable environmental classification and be seen as a measure of the effectiveness of PEER.

Box 1: Environment in the 10th Five Year Plan

In the 10th FYP (July 2008–June 2013) the Royal Government of Bhutan has adopted the following six interrelated strategies that will constitute the core strategies and set of sub-objectives through which the overarching goal of poverty reduction will be addressed.

These six interrelated strategies are: (i) vitalizing industry, (ii) national spatial planning, (iii) synergizing integrated rural-urban development for poverty alleviation, (iv) expanding strategic infrastructure, (v) investing in human capital and (vi) fostering an enabling environment through Good Governance. Environment is strategized as a cross- cutting theme of the 10th FYP and is inherent in the mandatory requirement to mainstream environment in all policies, plans and programs.

Priorities related to environment as a cross-cutting theme and as a sector are included in the 10th FYP. The objectives of the environment sector for the 10th FYP are to:

- Ensure sustainable development in conservation of environment;
- Disseminate environmental information and raise awareness among the general public;
- Move towards a cleaner environment;
- Mainstream environment issues into development policies, plans and programs;
- Develop appropriate environmental legislation;
- Develop environmental standards;
- Fulfilling Bhutan's obligations of Multilateral Environment Agreements;
- Enforcement of Environmental laws/Acts; and
- Coordination for water resources management.

The above objectives for the environment sector will be addressed through the following strategies and initiatives:

- Development of appropriate policy and legal frameworks;
- Compliance monitoring;
- Provision of environmental services;
- Decentralizing environmental governance and networking;
- Strengthening environmental information management system to support and improve decision-making (SOE, EIMS, etc.);
- Public education and awareness on environmental issues;
- Utilizing environmental assessments as a tool for sustainable development;
- Building and strengthening institutional capacity;
- Mainstreaming environmental issues in sect oral plans, programmes and projects of all government agencies; and
- Development of appropriate legal and policy framework for water resources management.

There are also relevant priorities related to environment and natural resources in the agriculture and energy sectors.

Source: 10th FYP (2008), vol.1, p.84-86.

2.2 Definition of environmental expenditure

A methodological challenge in carrying out a PEER is the classification of what constitutes environmental expenditure and how the relevant data can be extracted ex post from the public expenditure accounts. 'Environment' is not well defined as a sector and as such there is potential for overlaps with the other sectors. Therefore, an initial exercise to classify environmental expenditures and collect data is required to establish the framework for the PEER (Markandya et al., 2006).

In general, PEERs have been carried out based on a narrow definition of the term 'environment' which includes only 'pollution abatement and control' (PAC). This definition was first developed by the OECD in the 1970s and later expanded to include 'PAC expenditure plus protection of biodiversity and landscape, and research and development (R&D) in environment'. By this definition protected area is included but not other forestry activities. There has been a debate on whether or not to consider drinking water supply as environmental expenditure. The definition of environmental expenditure in the context of climate change could also be expanded to include 'climate change risks' together with 'pollution'.

A definition of public environmental expenditure provided by the World Bank (2003)[3] includes: "Expenditures 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 exploration or production". This is more or less in line with the OECD's expanded definition of PEER cited above.

In the case of Bhutan, there is also a need to look into the PEER in relation to the overall environmental protection and natural resource management objectives in the context of the GNH philosophy. Therefore, a two-tier approach to PEER is proposed to be captioned as the "upper bound" and "lower bound". The upper bound covers total PEE and include broader environmental expenditures relevant in a GNH context. The lower bound or core PEE includes the environmental expenditures that are in accordance with the international definition of PEE.

The importance of environmental assets for poverty reduction is also a primary reason for evaluating environmental expenditures. The poverty- environment

3 *World Bank (2003): 'Public Environmental Expenditure Reviews (PEERS) Experience and Emerging Practice', A Country Environmental Analysis Publication, Environmental Strategy Paper No.7.*

nexus and the rationale for investing in the environment by the public sector are outlined in Box 2 below.

Box 2: Investing in environmental wealth for poverty reduction
Poverty, population change and environmental assets interact in complex ways that have come to be known as the poverty-environment nexus. The dependency of the poor on natural resources and the environment has brought attention not only to protection of existing resources but also the options from reducing poverty by investing in environmental assets for the poor. Investing in the environment and thus creating assets on which the poor depends can often make immediate economic impact. Policy measures aimed at improving the natural environment and investments in environmental assets have a critical role in improving the well being of the poor. The rationales are that: • Poor people are poor because their assets are few and often of low quality. Addressing the low quality and vulnerability of the environmental assets of the poor is an important objective for anti-poverty policies; • A significant fraction of those assets comprise natural and environmental resources that provide valuable ecosystem services. Poor households rely heavily on environ- mental assets as a source of wealth from which to generate income and improve their livelihoods; • Environmental assets are highly vulnerable to overuse and external appropriation; • it is extremely easy for local, national and global events and policies to trigger mechanisms that damage environmental assets, forcing the poor into 'vicious cycles' of poverty and further environmental loss; • Although rich people can often protect themselves against many of the effects of environmental degradation, the poorest usually cannot or at a higher cost; • When carefully managed, the return from investments in environmental assets can be very high and of particular benefits to the poor. Investments in protecting and restoring natural ecosystems can produce substantial net benefits, especially for the poor; • Such investments need a favourable policy context to make them effective and sustainable. Market-based environmental policies for pro-poor asset formation may be a longer-term goal for many developing countries, due to institutional capacity constraints; • Poverty reduction strategies must achieve a two-fold goal: expanding the asset base of the poor and increasing the efficiency with which those assets are converted into well-being for the poor;

Source: Pearce (2005)

The poverty-environment nexus can also provide some guidance on the definition of environmental expenditures from the perspective of investment Public Environmental Expenditure Review of the Royal Government of Bhutan in sustaining and enhancing environmental wealth. Policy interventions today can reduce future costs. For instance, the cost of cleaning up pollution or restoring lands

degraded by soil erosion can be attributed to the lack of investments in pollution control or soil conservation in the past.

2.3 Limitations of the PEER

The national budget only reflects the fiscal flows. Since it is based primarily on the national accounts, a serious limitation of PEER is that it does not take into account the depreciation of environmental and natural capital stock.

There are two main sources of natural and environmental capital in the public domain:

Endowment of wealth from natural resources. This includes renewable resources like forestry and hydropower, and exhaustible resource like minerals. Most of the natural resources are owned by the public and are the main sources of development finance through royalties etc.

Quality of the environment. This reflects the state of the ambient environment and access to environmental services. The costs of pollution and other environmental degradation, for example on health, can erode the achievements and sustainability of development. Maintaining a healthy environment is a public good that requires the involvement of the public sector.

The PEER provides only a partial view of the environmental expenditures by excluding environmental capital and expenditures of non-public sectors (World Bank, 1999). PEER is by definition limited to expenditures of the public sector while those incurred by the private sector, non-government organizations (NGOs), foundations, and households are not captured. The Government can shift some of the financial burden of environmental expenditures to the private sector and households through regulations and user fees. For instance, instead of using tax revenue for preventing pollution or clean-up, regulations could require manufacturers to apply the best available technology. The enforcement of the 'polluters pay principle' is another way to shift the burden of pollution control costs from the public to the private sector and households.

A complete accounting of environmental expenditures should include all such expenditures of the entire economy including the private sector, non- governmental organisations, foundations, and households. In addition, it should also include

the monetary value of depletion in the stock of natural capital and environmental assets. Furthermore, the contribution of the environment and natural resources to the economy, (e.g. protection of sources of hydropower, or the costs arising from externalities such as environmental degradation are not captured directly in the environmental expenditures. But indirectly, these could be captured through costs such as brought about by soil erosion or the impact of pollution on the health of the general population.

One example in Bhutan is the "Environmentally Friendly Road Construction" (EFRC) method that is supposed to be used for the construction of farm roads. Because the government's policy is to provide as many kilometres of farm roads as possible, there is a strong disincentive to use the EFRC methods because of the additional costs. Within the limitations of a fixed budget, the emphasis will always be on achieving more kilometres than meeting EFRC objectives. Consequently, there is little incentive for consideration for future maintenance costs, in the year of establishment. One approach would be to adopt full cost accounting method, where budget for a future road maintenance costs are paid up-front. Adoption of EFRC techniques is a good example for paying future cost up-front resulting reduced future maintenance costs.

2.4 The PEER of the 10th FYP for FY 2008-2009 and FY 2009-2010

The PEE of the initial two FYs of the 10th FYP was carried out in 2011 with support from 'Joint Support Program (UNEP/DANIDA)' and accordingly the analysis for the FY 2008-2009 & FY 2009-2010 found:

- The PEER reveals that RGoB allocates and utilises a substantial portion of public resources for environmental expenditures. About 6% of public expenditures are related to the achievement of the government's policy objective of preserving the country's environment and ecological heritage which constitutes one of the four pillars of the GNH philosophy.

- The total PEE for the FY 2009-2010 was Nu. 1,966 million, which is equal to 6.5% of the total public expenditure and 2.9% of the GDP. In contrast, the total PEE for FY 2008-2009 is Nu. 1,322 million, which is equal to 5.7% of the total public expenditure and 2.3% of the GDP.

- The core PEE consists of four out of the nine environmental clusters (Refer Table 2, Pg. 26). During the FY 2009-2010, Bhutan's core PEE amounted to Nu. 756 million, which is equal to 2.5% of the total public expenditure and 1.1% of the GDP. In FY 2008-2009 the core PEE was Nu. 491 million, which is equal to 2.1% of the total public expenditure and 0.8% of the GDP. The proportion of core PEE to the total PEE remained more or less constant at 38% in FY 2009-2010 and 37% in FY 2008-2009.The core PEE at 0.8% and 1.1% GDP is slightly higher in Bhutan as compared to estimates for some other countries and could be a reflection of Bhutan's strong commitment to environmental preservation.

- The PEE increased in both absolute and relative terms in FY 2009-2010 from FY 2008-2009. The total PEE increased by 49% in FY 2009-2010 from FY 2008-2009, which is more than the increase in public expenditure (30%), and GDP (15%). The 2009 PEER shows a constant nominal level of PEE at about Nu.1 billion per year, but there is a decline in relative terms due to the doubling of both public expenditure and GDP during the 9th FYP. The decline from the 2009 PEER is seen reversing in the first two years of 10thFYP. The 49% increase in the PEE is mainly due to the increase of external funding by Nu. 600 million (181%) from FY 2008-2009 to FY 2009-2010. The RGoB funded share of PEE increased by only Nu. 40 million (4%). The share of PEE in the RGoB public expenditures (without the external funding) decreased from 6% in FY 2008-2009 to 5.4% in FY 2009-2010. The reason for the increase is due to delay in release of investment budget during the first year of 10th FYP.

- About 70% of the PEE is recorded at the central level agencies and 30% at local government level. Three ministries (MoAF, MoEA and MoWHS) account over 60%, and the National Environmental Commission Secretariat (NECS) accounts 3.4% of the total PEE. The expenditures accounted at the central level can be actually incurred at local level, e.g. expenditures on national parks and infra-structure. In the 9thFYP only about 4% of the PEE was at the local government level. The increased local government share reflects an emerging fiscal decentralization in Bhutan. The increase is not due to the PEE on farm roads, as it constitutes only 3% of total PEE in FY 2009-2010 or about 10% of the PEE at local government level.

- ‘Forestry services’ is the RGoB programme having the largest share of PEE. But the share of PEE decreased by 10% point from 40.4% to 30.4%. On the other hand, the PEE for ‘Urban development and engineering services’ increased by 10% to 12.7% in FY 2009-2010.

- The PEE for ‘Soil conservation and land management’ cluster decreased by half from FY 2008-2009 to FY 2009-2010. This is mainly explained by a decline in external funding. In all other cluster the external funding increased. Environmental mainstreaming includes sub-clusters on Environmentally Friendly Road Construction (EFRC) of national roads and farm roads. 15% incremental cost (equal to 13% of the total road building expenditure). It is confirmed that EFRC incremental cost occurs for almost all national road construction projects while the level of EFRC for farm road projects is uncertain. The estimated PEE share of EFRC is 16% for roads and 3.2% for farm roads in FY 2009-2010.

- The PEE with respect to ‘Climate change’ cluster is unclear as the RGoB programme, activity and sub-activity budget codes do not capture climate change as a separate theme, except for specific climate change projects assisted by external funding. The climate cluster also includes investments in irrigation (as an adaptation measure), disaster risk reduction and mitigation projects. The climate change related expenditures is 13% and 16% of the total PEE in the two fiscal years.

- The PEER does not in itself provide further environmental mainstreaming. However, it does give insight to MoF and GNHC about the importance of environment for Bhutan’s economic development. The share of PEE for environmental mainstreaming (other than roads) is 1.6% and 3.7% in FY 2008-2009 and FY 2009-2010.

- The share of PEE on capital expenditures increased to 71% in FY 2009-2010 from 60% in FY 2008-2009. This increase is higher than total PE where capital and current expenditures ratio are 50% each. This reveals that environmental expenditures have higher proportion of capital investments and external funding than the overall public expenditure.

- The share of externally financed PEE is 48% of the total PEE budget in FY 2009-2010 (external finance share of current expenditure is 14% and 61% of capital expenditure) up from 25 % of the total PEE in FY 2008-2009 (share of current 11% and capital 35%). The external funding of PEE during the 9th FYP was 34%. The total external funding for PEE amounted to Nu. 1.271 million for FY 2008-2009 and FY 2009-2010. The Governments of India and Denmark provided 27% and 21% respectively constituting nearly half the external PEE funding. About a quarter (27%) is provided by multilateral organizations, such as ADB (9%), GEF (9%), World Bank (4%) and the UN agencies (5%). Another 2% is provided by number of other bilateral and multilateral development partners, international organisations and NGOs.

The 2011 PEER recommended:

- DPA, MoF should prepare an updated PEER for the 10thFYP (FY 2008-2009 - FY 2012-2013) in 2013. For the 11th FYP a mid-term PEER should be prepared after the first three fiscal years and a final PEER covering five years at the end of the FYP.
- An environmental expenditure review of the private sector, NGOs and foundations, and households should be developed in parallel with the PEER in 2013 (but not as part of the PEER itself). This will provide a full account of the environmental expenditures in Bhutan and contribute towards full cost accounting in the 'green national accounting' to be developed by National Statistics Bureau (NSB).
- The estimated expenditure for Environmentally Friendly Road Construction (EFRC) for farm roads should be validated in order to confirm the appropriate level of environmental expenditure according to mandatory environmental standards for environmental mainstreaming of road projects.
- The PEER should be expanded to include public revenues from natural resources (royalties) and environment related user fees.
- A focal person should be identified in DPA, MoF to maintain the PEE database and be responsible for preparing PEER updates.
- The PEER task force with MoF as the chair and members from NECS, NSB, GNHC and other relevant ministries should be maintained on an ad hoc basis.
- The PEE data base and other PEER relevant documentation should be posted on the website of DPA, MoF.

- The identified ‘green’ budget codes should be tagged in the RGoB budget and accounting system as far as possible and linked to the environmental classification in the 11th FYP. Alternatively the budget classification system should be reorganised to include the environmental classification in subactivities (e.g. a budget code for ‘waste management’). A customized extraction of PEE data should be possible as and when needed and not only when a PEER is being prepared.
- The PEER task force should revisit the environmental classification and integration of PEER with the RGoB budget and accounting systems for the 11th FYP.
- Case studies should be initiated by PEER task force for detailed assessment of the efficiency and effectiveness of environmental expenditures. This could be for crosscutting topics of policy relevance like climate change that are not captured well in the public accounting system.
- The PEER should be integrated with the Bhutan Environment Outlook (BEO) by linking PEE with the State of the Environment reporting, and by revising and harmonizing the environmental classification framework developed for the PEER. The NECS should take a lead in ensuring such linkage in coordination with the PEER task force.

3. Methodology and Data Sources

A methodology for the PEER including a classification of environmental expenditures has been developed. The emphasis of the methodology is to provide an accurate assessment of PEE while ensuring that the PEER process itself is kept manageable so that it will be feasible for subsequent updates.

The methodology developed for the PEER follows a three-step approach:

• **Step 1:** Screening for optional PEE from the RGoB expenditure data. At the screening stage a broad definition of environmental expenditures is applied

• **Step 2:** Organization of PEE database in accordance with the classification of environmental clusters. The classification of environmental data and organisation of the PEE data based on the data available in step 1.

• **Step 3:** Analysis of the PEE data. The depth of analysis is determined by the quality of data that can be retrieved from the budget and accounting system. Main emphasis is given to retrieve data at the activity and sub-activity level.

The three steps methodology of data retrieval process is explained below with a brief overview of the data sources for the PEER.

3.1 Data sources for the PEER

Accessibility to and the quality of the public financial information in Bhutan is good. This is one of the advantages of a well-organised and relatively small public sector. Thus, the scope for a PEER in Bhutan is good as compared to other countries. In most countries public expenditure data is available only at the institutional level, whereas in Bhutan such data can be extracted at activity and sub-activity levels across programmes and agencies.

The financial management system in Bhutan is structured with budget codes an outline of which is shown in Annex 2. Expenditure data was extracted from the Public Expenditure Management System (PEMS) used by the Department of Public Accounts (DPA).

3.2 Step 1: Development of webpage for PEE

The PEE webpage is developed under the 'Accounts Module' of the PEMS system designed to identify Public Environmental Expenditure relevant activity and sub-activity. The identification of the activities and sub-activities are carried out through the standard procedure of selecting from the designed parameter. The procedure involves selection of AU category, Administrative Unit, Department, Field Office, Program, Sub-Program, Activity and Sub- Activity which covers the Ministries, Autonomous Agencies, Constitutional Bodies, Dzongkhags and Gewogs. The user rights for accessing the PEE webpage in the PEMS system is specially designed only for the PEE focal person at the Department of Public Accounts.

3.3 Step 2: Screening and assigning to Public Environmental Expenditures

Next, the identified activities and sub-activities are assigned to the developed PEE classification and domains under the same webpage. The PE domain captures the related activities under the 9 clusters and the PE classification captures the 38 sub-clusters. This arrangement creates the data for the PEE within the PEMS database.

3.4 Step 3: System generated reports for PEE from PEMS applications.

The standard reports for the PEE are designed and developed under the 'Report Module' in the PEMS system. Currently, there are 16 reports available under the PEE reports. Selection of 'Fiscal Year', 'Report Group' and Selection of Reports' access the PEE reports through the designed parameter.

The clusters are:

1. Environmental protection
2. Urban, rural and industrial environmental management
3. Biodiversity conservation
4. Information and knowledge (R&D)
5. Natural resource management
6. Soil conservation and land management
7. Climate change
8. Environmental mainstreaming
9. Miscellaneous (other)

1-4 Core PEE

3.5 Step 4: Data analysis

The third step is the analysis of the PEE data. The PEE database includes the budgetary allocations and expenditures for each of the 'green' budget codes and

additional information related to several functions (see Annex 3). These functions are analysed for the expenditures incurred and the initial budget outlay:

- Institutions: Administrative Units for Autonomous agencies, Ministries, Dzongkhags and Gewogs.
- RGoB Programmes: Programme codes are used as a function since some of these cut across several institutions (e.g. programme code 18 for 'forestry services').
- Economic: Current and capital expenditures and budgets for each of the 'green' budget codes. Budget efficiency is measured as expenditure of allocated budget.
- Financing: Source of financing i.e. RGoB or External sources.
- Environment: The 'green' budget codes are linked with the environmental classification of PEE. Nine environmental clusters are used of which four clusters are the core environmental expenditures. The environmental classification captures the type of PEE with a classification code (e.g. 2.1 for 'waste management') included for each of the 'green' budget codes in the PEE database. (Further detail is provided in Annex 1 and 4).
- The analysis is presented in the form of tables and charts according to identified functions. The analysis includes the estimate of the total PEE both in absolute terms as well as a percentage of total public expenditure and GDP. A comparison is made with the PEER (2009) of the 9th FYP, though it has not been possible to verify whether the assumptions, methodology and PEE data were compatible. The analysis could be made according to Object Code (OBC) level similar to the Schedule 2 of the Annual Financial Statement (AFS). The OBC does not include a basis for selection of PEE like the sub-activity budget codes, but it would be possible to further itemize the PEE, e.g. to estimate what the PEE is for 'human resource development' (object code 45.01.) etc.

3.6 PEER updates and applications

It was assumed that the annual update of the PEER could be carried out between October and December. The DPA, MoF has expressed that it would be relevant to carry out a PEER at the end of every FYP as well as a mid-term PEER. The mid-term PEER for the 11th FYP at the end of the FY 2015-2016. It is suggested that the mid-term PEER cover the first three years of the Five Year Plan. This is because

during the initial year of a FYP the level of public expenditures is lower than in the later years. This PEER report can be used as a reference document for 10th FYP PEER. A revision of the methodology taking into account, lessons learned will be relevant for the 11thFYP from the FY 2013-2014.

4 Analysis of results

4.1 Total and core public environmental expenditures

Budgets and expenditures for the last three years of the 10thFYP (FY 2010-2011, FY 2011-2012 and FY 2012-2013) have been reviewed, classified and analysed to determine the total PEE.

As stated earlier, total PEE is a broader estimate of environmental expenditures covering all nine clusters. As shown in Table 1, the total PEE for the FY 2010-2011 is Nu. 2,110.42 million, which is equal to 7.15 % of the total public expenditure of Nu.29,521.91 million and 2.66% of the GDP of Nu.79,204.82 million. The total PEE for FY 2011-2012 is Nu. 2,429.82 million, which is equal to 6.97 % of the total public expenditure of Nu. 34842.76 million and 2.62% of the GDP of Nu.92,684 million. The total PEE for FY 2012-2013 is Nu. 2486.01 million, which is equal to 6.81% of the total public expenditure of Nu. 36,527.82 million.

Table 1: Public Environmental Expenditures 2010-2011 to 2012-2013[4]

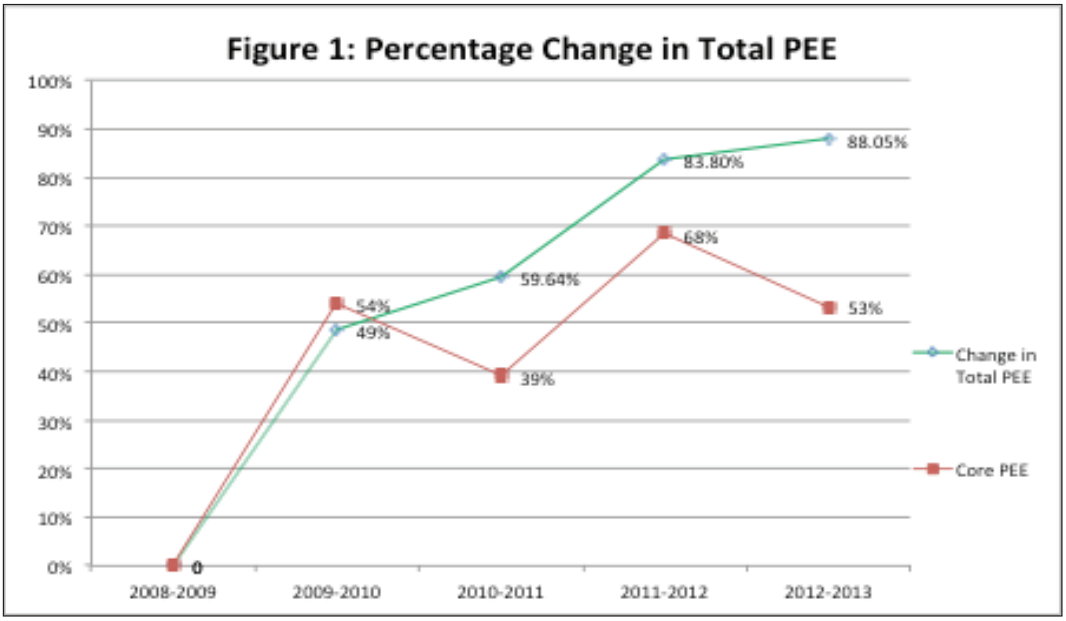
Million Nu.	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
GDP	**57981**	**66865**	**79204.82**	**92684.025**	**NA**
PE	23035	30039	29521.905	34842.762	36527.82
Total PEE	1322	1966	2110.42	2429.82	2486.01
Core PEE	491	756	683.14	827.02	753.31
PE % - of GDP	39.7%	44.9%	37.27	37.59	NA
Total PEE % of PE	5.7%	6.5%	7.15	6.97	6.81
Total PEE % - of GDP	2.3%	2.9%	2.7%	2.6%	NA
Core PEE % of PE	2.1%	0.1%	2.31	2.37	2.06
Core PEE %-of GDP	0.8%	14.6%	0.86	0.89	NA
Core PEE % of Total PEE	37.1%	38.5%	32.37	34.04	30.30

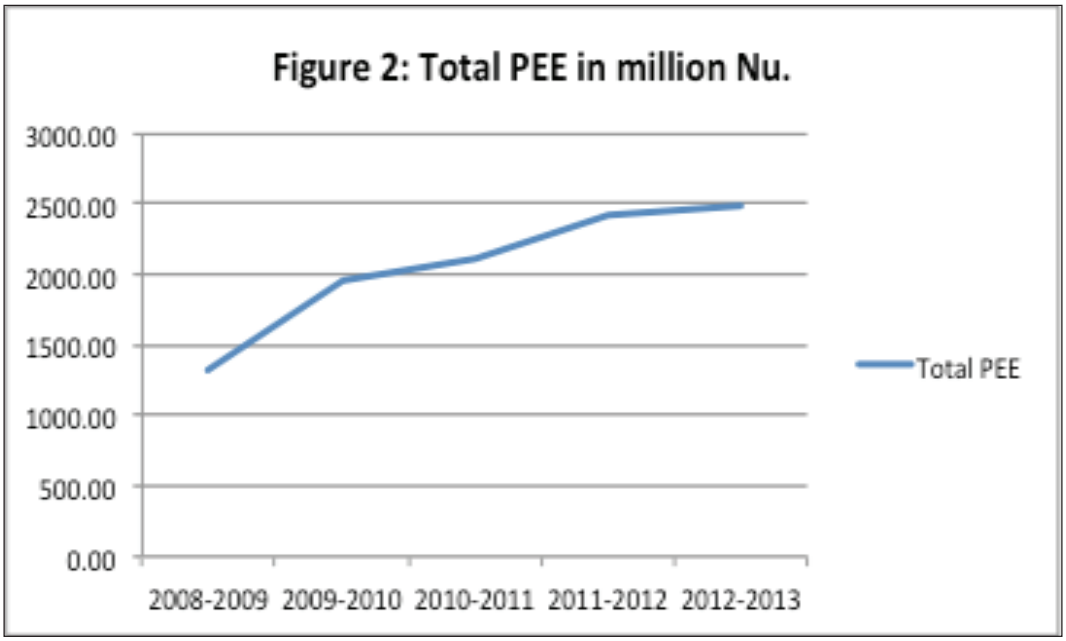
PE: Public expenditure; PEE: Public environmental expenditure

The total PEE percent of GDP for the FY 2012-2013 could not be ascertained since the data on the GDP for the Year 2013 is currently not available with the National Statistical Bureau of Bhutan. There is an increase of almost 49 % in total PEE from FY 2008-2009 and FY 2009-2010 (Source PEER 2011). Considering the baseline as FY 2008-2009, the total PEE increased by 59.64 % in FY 2010-2011 although the total Public Expenditure decreased by 1.72 % in the same FY (See figure 1, Pg. 21).

4 *Data for the FY 2008-2009 & FY 2009-2010 are from the 2011 PEER report. Data for Public Expenditure and GDP for the FY 2010-2011 till FY 2012-2013 are from the AFS of DPA, MoF and NSB respectively.*

The core PEE covers only first four clusters (Table 1) and is based on the international definition of PEE. The core PEE in the FY 2010-2011 is Nu.683.14 million, which is 2.31% of the total public expenditure and 0.86 % of the GDP. In FY 2011-2012, the core PEE is Nu. 827.02 million, which is 2.37 % of the total public expenditure and 0.89 % of the GDP. Over the 10th FYP, the total PEE has steadily increased from FY 2008-2009 from 1322 million to 2486.01 million in FY 2012-2013 both in absolute as well as in relative terms (Refer figure 1 below)





4.2 Analysis of PEE by environmental clusters

PEE is divided into nine environmental clusters and 38 sub-clusters by applying environmental classifications outlined in the methodology. The summary results of the nine environmental clusters are shown in Table 2 and Figure 3, and detailed analysis including the 40 sub-clusters is presented in Annexure 6.

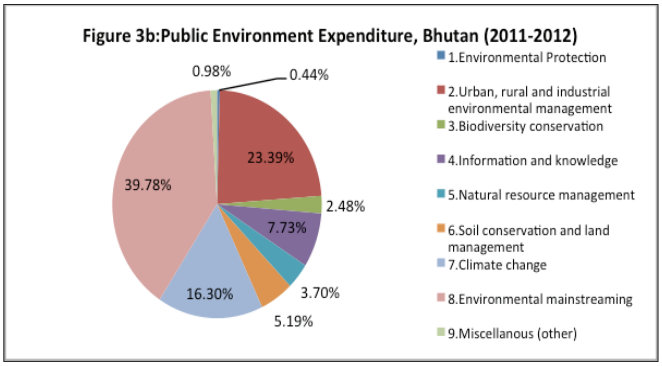
Table 2: PEE according to environmental clusters

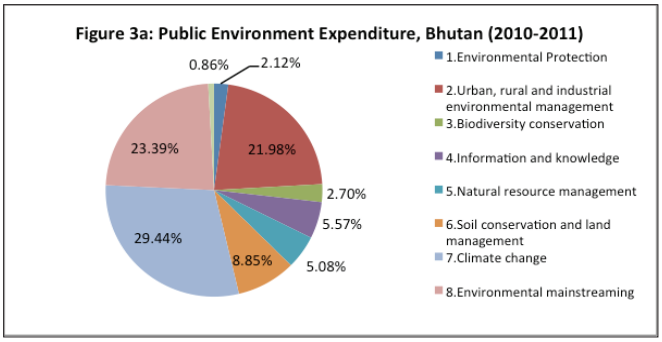
Environmental Clusters											2008/09-2009/10		2009/10-2010/11		2010/11-2011/12		2011/12-2012/13		2008/09-2012/13	
-- Million Nu. --	2008-2009		2009-2010		2010-2011		2011-2012		2012-2013		Absolute	Relative	Absolute	Relative	Absolute	Relative	Absolute	Relative	Absolute	Relative
1.Environmental Protection	18.0	1%	38.5	2%	44.8	2%	10.6	0%	33.0	1%	20.5	1%	6.3	0%	-34.2	-2%	22.4	1%	15.0	0%
2.Urban, rural and industrial environmental	201.1	15%	358.2	18%	463.9	22%	568.3	23%	574.4	23%	157.1	3%	105.7	4%	104.4	1%	6.2	0%	373.3	8%
3.Biodiversity conservation	158.4	12%	268.9	14%	57.1	3%	60.2	2%	50.4	2%	110.5	2%	-211.8	-11%	3.2	0%	-9.8	0%	-108.0	-10%
4.Information and knowledge	113.8	9%	90.7	5%	117.5	6%	187.9	8%	95.5	4%	-23.1	-4%	26.8	1%	70.5	2%	-92.5	-4%	-18.3	-5%
Total Core PEE(Cluster 1-4)	**491.3**	**37%**	**756.3**	**38%**	**683.1**	**32%**	**827.0**	**34%**	**753.3**	**30%**	**265.0**	**1%**	**-73.2**		**143.9**		**-73.7**		**262.0**	
5.Natural resource management	360.2	27%	383.8	20%	107.3	5%	89.8	4%	89.8	4%	23.6	-8%	-276.5	-14%	-17.4	-1%	0.0	0%	-270.4	-24%
6.Soil conservation and land management	96.8	7%	51.6	3%	186.7	9%	126.2	5%	266.9	11%	-45.2	-5%	135.1	6%	-60.6	-4%	140.7	6%	170.1	3%
7.Climate change	177.6	13%	313.1	16%	621.4	29%	396.2	16%	395.0	16%	135.5	2%	308.3	14%	-225.3	-13%	-1.1	0%	217.4	2%
8.Environmental mainstreaming	193.8	15%	460.2	23%	493.7	23%	966.7	40%	978.1	39%	266.4	9%	33.5	0%	473.0	16%	11.4	0%	784.3	25%
9.Miscellanous (other)	2.6	0%	0.9	0%	18.2	1%	23.9	1%	2.9	0%	-1.7	0%	17.3	1%	5.7	0%	-21.1	-1%	0.3	0%
Total PEE(Cluster 5-9)	**831.0**	**63%**	**1,209.6**	**62%**	**1,427.3**	**68%**	**1,602.8**	**66%**	**1,732.7**	**70%**	**378.6**	**-1%**	**217.7**	**6%**	**175.5**	**-2%**	**129.9**	**4%**	**901.7**	**7%**
Total PEE (Cluster 1-9)	**1,322.3**	**100%**	**1,965.9**	**100%**	**2,110.4**	**100%**	**2,429.8**	**100%**	**2,486.0**	**100%**	**643.6**		**144.5**		**319.4**		**56.2**		**1,163.7**	

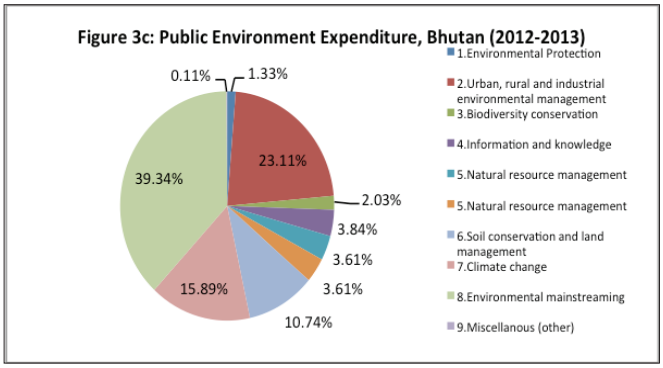
Out of the total PEE of Nu. **2,110.43** million in the FY 2010-2011, Nu. **2,429.81** million in the FY 2011-2012 and Nu. **2,486.01** million in the FY 2012-2013, the core PEE constitutes 32 % (Nu 683.14 million) in FY 2010-2011, 34 % (Nu 827.02 million) in the FY 2011-2012 and 30 % (Nu 753.31 million) in FY 2012-2013 . Within the core clusters, PEE on urban, rural and industrial environmental management registered the maximum increase of 7.9 % growing from Nu.201 million in FY 2008-2009 to Nu. 574.45 million in FY 2012-2013. In the case of PEE on biodiversity conservation, there was a decrease of 9.95 % from Nu.158.40 million in FY 2008-2009 to Nu. 50.42 million in FY 2012-2013, although this cluster was registered as the second highest in the core PEE in the initial two FYs of the 10th FYP.

Looking at the share of PEE among the nine clusters, the PEE on environmental mainstreaming has recorded a substantial increase in absolute terms from Nu. 266.40 million in FY 2008/09 -2009/10 to Nu 784.31 million in FY 2011/12-2012/13. Similarly, there is an increase of Nu 135.14 million to Nu. 217.42 million in climate change. On the other hand, while PEE on natural resource management registered a substantial decrease to 23.63% in FY 2011/12-2012/13 from FY 2008/09-2009/10.

Figure 3 (a,b,c): Composition of PEE by Environmental Clusters







4.3 Analysis of PEE by RGoB programmes

The PEE is analysed according to the RGoB programmes. Each programme is attached to a specific budget code classification in the budget and accounting system. It is to some extent, similar to the COFOG (Classification of Functions of Government) system used in other countries but there are no fixed sub-divisions. The IMF Functional Classification for the structure of the budget and accounting system is followed by MoF, but it does not cover all government functions and therefore, has some limitation in capturing the entire PEE data. An overview which is included in Annexure 5 reveals the share of the RGoB programmes of the PEE for each of the environmental clusters with several programmes contributing to each environmental cluster (Table 3).

The 'Forestry Services' accounted for the highest share of total PEE with 40.4% in FY 2008-2009 but towards the end of the 10th FYP (FY 2012-13) the maximum share to the PEE is contributed from the 'Road and Bridges Services' with Nu 914.58 million (Relative of 23.63%). This is followed by 'Agricultural Services' which accounted for 611.02 million in the FY 2012-13 although it was recorded as the third major contributor with 11.10% to the PEE in the FY 2008-2009. However, energy services accounted the lowest in the end of the 10th FYP with 0.44% share.

Table 3: PEE by RGOB Programmes

RGoB Programmes	2008-09		2009-10		2010-11		2011-12		2012-13		2008/09-2012/13	
	Mio. Nu.	%	Mio. Nu.	%	Mio. Nu.	%	Mio. Nu.	%	Mio. Nu.	%	Absolute	Relative
FORESTRY SERVICES	535	40%	598	30%	248	11%	306	13%	114	4.59%	-420.44	-35.85%
ROADS & BRIDGES SERVICES	173	13%	325	17%	443	20%	483	20%	915	36.72%	741.88	23.62%
AGRICULTURE SERVICES	157	11%	192	10%	309	14%	454	19%	611	24.53%	454.42	13.43%
URBAN DEVELOPMENT AND ENGINEERING SERVICES	27	2%	250	13%	269	12%	214	9%	271	10.87%	244.12	8.87%
GENERAL ADMINISTRATOR AND DIRECTION SERVICES	144	11%	246	13%	156	7%	102	4%	71	2.86%	-73.20	-8.04%
HEALTH SERVICES	123	9%	121	6%	126	6%	181	8%	151	6.05%	27.27	-3.25%
ENERGY SERVICES	46	4%	88	5%	188	9%	36	1%	11	0.44%	-35.27	-3.06%
OTHER PROGRAMMES	118	9%	147	8%	454	21%	620	26%	347	13.94%	229.50	5.04%
TOTAL	**1322.4**		**1966**		**2,192.22**		**2,396.03**		**2,490.67**		**1168.27**	

Comparative figures are shown in Figure 4

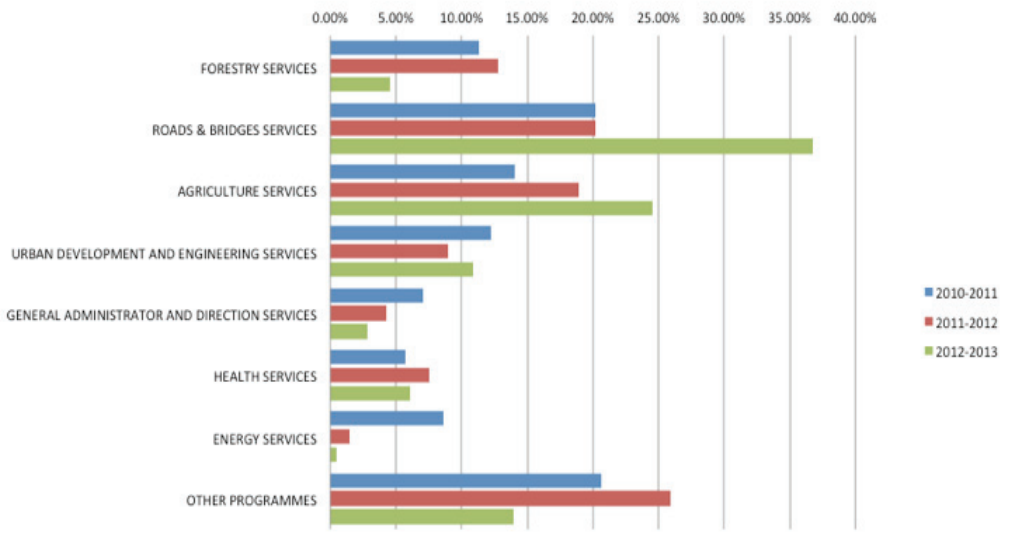


Figure 4: RGOB Programmes' share of PEE for FY 2010-11 to FY 2012-13

4.4 Analysis of PEE by agency

Table 4 shows the distribution of PEE by Government spending agencies further broken down at the central, Dzongkhags and Gewog levels in FY 2010-2011, 2011-2012 and 2012-2013. In the FY 2010-2011, 56%(Nu. 1,187.46 million) of the PEE was incurred at the central level with the Dzongkhags and Gewogs accounting for 28% and 15% (Nu. 596.90 million and 326.90 million) respectively. In the FY 2011-2012, 57%(Nu. 1,385.41 million) of the total PEE occurred at the central, 21% and 22%(Nu. 510.18 million and Nu. 534.23 million) at the Dzongkhag and Gewog Levels respectively. For the last FY of the 10th FYP 2012-2013, 67% (Nu. 1,669.69 million) of the total PEE was incurred at the central level, 18% (Nu.448.56 million) at the Dzongkhag Level and 15%(Nu. 367.76 million) at the Gewog Level.

More than 60% of the total PEE in FYs 2010-2011 and 2011-2012 and approximately 80% of total PEE in FY 2012-2013 are accounted for by three agencies namely Ministry of Works and Human Settlement, Ministry of Agriculture and Forest and the National Environment Commission. With respect to PEE distribution among the sectors, the Agriculture sector accounts highest with 29.88% and 36.88% in the FY 2010-2011 and 2011-2012 respectively. However in the FY 2012-2013 the Roads Sector accounted with highest PEE i.e. 36.79% of the total PEE.

Table 4: Public Environmental Expenditures by Central and Local Government

	2010/11					2011/12					2012/13				
Environmental Clusters	**Agency**			**Expenditure**		**Agency**			**Expenditure**		**Agency**			**Expenditure**	
-- Million Nu. --	**Cen.**	**Dzo.**	**Geo.**	**Total**	**Pct.**	**Cen.**	**Dzo.**	**Geo.**	**Total**	**Pct.**	**Cen.**	**Dzo.**	**Geo.**	**Total**	**Pct.**
1.Environmental Protection	42.5	1.5	0.7	44.8	2%	10.5	0.0	0.1	10.6	0%	26.3	6.7	0.0	33.0	1%
2.Urban, rural and industrial environmental management	133.8	271.2	58.9	463.9	22%	159.3	244.8	164.2	568.3	23%	253.9	199.1	121.4	574.4	23%
3.Biodiversity conservation	52.5	1.8	2.8	57.1	3%	55.3	2.9	2.0	60.2	2%	43.9	4.6	1.9	50.4	2%
4.Information and knowledge	100.6	10.7	6.1	117.5	6%	163.6	12.4	12.0	187.9	8%	61.3	26.9	7.3	95.5	4%
5.Natural resource	16.6	19.7	70.9	107.3	5%	36.0	24.7	29.2	89.8	4%	53.7	20.4	15.7	89.8	4%
6.Soil conservation and land management	175.1	4.2	7.4	186.7	9%	103.3	12.2	10.7	126.2	5%	258.8	5.7	2.4	266.9	11%
7.Climate change	354.8	214.1	52.5	621.4	29%	135.9	136.3	124.0	396.2	16%	198.8	96.8	99.4	395.0	16%
8.Environmental	294.0	72.1	127.5	493.7	23%	702.1	74.0	190.6	966.7	40%	770.2	88.2	119.7	978.1	39%
9.Miscellanous (other)	17.5	0.6	0.0	18.2	1%	19.6	2.9	1.5	23.9	1%	2.7	0.1	0.0	2.9	0%
Total environmental expenditure	**1,187.5**	**596.1**	**326.9**	**2,110.4**	100%	**1,385.4**	**510.2**	**534.2**	**2,429.8**	100%	**1,669.7**	**448.6**	**367.8**	**2,486.0**	100%
Percentage	56%	28%	15%			57%	21%	22%			67%	18%	15%		
*Cen.-Central, *Dzo.-Dzongkhag, *Geo-Gewog															

4.5 Analysis of PEE by economic activity

Table 5 shows the analysis of PE and PEE by economic activity. The analysis is carried out at the highest level of aggregation, i.e. *current* and *capital* budget and expenditure. In the FY 2010-2011, 43.24 % of the total budget outlay was for current expenditures and 56.76

% for capital expenditures. In contrast, the budgetary allocation for PEE was 7.58 % for current expenditures and 92.4 % for capital expenditures. In the FY 2011-2012 PE budget outlay, the allocation for current expenditure increased marginally to 43.74 %, while total budget provision for capital expenditure increased slightly to 56.26 %. In case of PEE, the budget allocations for current expenditure increased from 7.58 % to 7.91 % while the allocation for capital expenditure decreased from 92.42 % to 92.09 %. In the FY 2012-2013 PE budget outlay, the allocation for current expenditure increased by 3.43 % to 47.16 %, while total budget provision for capital expenditure decreased from 56.26 % to 52.84 %. In case of PEE, the budget allocations for current expenditure decreased from 7.91 % to 7.06 % while the allocation for capital expenditure increased from 92.09 % to 92.94 %. Over the 10th FYP, the allocations of total budget outlay from FY 2008-09 to 2012-2013 have remained consistently throughout in terms of PEE distribution.

Table 5: Analysis of PE and PEE by Current and Capital Expenditure

	2010-2011					2011-2012					2012-2013				
	Current		Capital		Total	Current		Capital		Total	Current		Capital		Total
Public Environmental Expenditure	Mio. Nu.	%	Mio. Nu.	%		Mio. Nu.	%	Mio. Nu.	%		Mio. Nu.	%	Mio. Nu.	%	
Budget	208.0	8%	2,534.8	**92%**	2,742.8	240.3	**8%**	2,797.3	**92%**	3,037.6	195.2	7%	2,568.4	93%	2,763.6
Expenditure	178.0	8%	1,932.4	**92%**	2,110.4	197.7	**8%**	2,232.2	**92%**	2,429.8	174.7	7%	2,311.3	93%	2,486.0
Public Expenditure															
Budget	15,632.5	43%	20,522.0	**57%**	36,154.4	17,285.1	**44%**	22,234.2	**56%**	39,519.3	18,621.6	47%	20,860.6	53%	39,482.2
Expenditure	14,735.1	50%	14,786.8	**50%**	29,521.9	16,705.6	**48%**	18,137.1	**52%**	34,842.8	18,431.3	50%	18,096.6	50%	36,527.8

4.6 Analysis of PEE by type and source of funds

Table 6 shows the analysis of PEE by source of funding. In FY 2010-2011, 87 % of the total PEE was funded by RGoB comprising of Nu. 127.79 million for current expenditures and Nu.852.31 million for capital expenditures. The ratio of RGoB funding increased marginally to 89.86 % in FY 2011-2012, although in absolute terms increased to Nu 1,277.82 million (Nu. 129.52 million and Nu. 1148.30 million) for current and capital expenditure.

In contrast, the share of externally financed PEE is 54 % (Nu. 1130.32 million) in FY 2010-2011, 47 % (Nu. 1152.01 million) in FY 2011-2012 and 59 % (Nu. 1472.04 million) in FY 2012-2013 of the total PEE. This consists of 28 % (Nu. 50.24 million) for current expenditure and 56 % (Nu. 1080.08 million) for capital expenditure in FY 2010-2011. In FY 2011-2012 ratio increased to 34% (Nu. 68.16 million) and 49 % (Nu. 1083.85 million) for current and capital expenditure respectively. In FY 2012-2013 ratio decreased to 26 % (Nu. 44.93 million) and 62 % (Nu. 1427.12 million) in current and capital expenditure respectively.

Over the 10th FYP, the average budget outlay for PEE from RGoB both in terms of current and capital is 49% while the average external budget is 51%. The average PEE from RGoB accounted for 53% and the external expenditure accounted for 47%. It was observed that the external funding is provided more for capital expenditure while RGoB has to meet recurrent expenditures from the internal revenue.

Table 6: Public Environment Expenditures by Type and Source of Funding

	2010-2011				2011-2012				2012-2013			
Million Nu.	**Total**	**Current**	**Capital**	**Ratio: Capital**	**Total**	**Cuurent**	**Capital**	**Ratio: Capital**	**Total**	**Current**	**Capital**	**Ratio: Capital**
Budget	2,742.8	208.0	2,534.8	92.4%	3,037.59	240.30	2,797.29	92.1%	2,763.57	195.19	2,568.37	92.9%
RGoB	1,165.1	140.2	1,024.9	88.0%	1,452.52	147.61	1,304.91	89.8%	**1,109.71**	136.29	973.42	87.7%
External	1,577.7	67.8	1,509.9	95.7%	1,585.07	92.69	1,492.38	94.2%	**1,653.86**	58.90	1,594.96	96.4%
External-%	**58%**	**33%**	**60%**		**52%**	**39%**	**53%**		**60%**	**30%**	**62%**	
Expenditure	2,110.4	178.0	1,932.4	91.6%	2,429.83	197.68	2,232.15	91.9%	2,486.01	174.71	2,311.30	93.0%
RGoB	980.1	127.8	852.3	87.0%	1,277.82	129.52	1,148.30	89.9%	**1,013.97**	129.78	884.18	87.2%
External	1,130.3	50.2	1,080.1	95.6%	1,152.01	68.16	1,083.85	94.1%	**1,472.04**	44.93	1,427.12	96.9%
External-%	**54%**	**28%**	**56%**		**47%**	**34%**	**49%**		**59%**	**26%**	**62%**	

Figure 5: Percentage distribution of RGoB and External Funding against Budget and PEE Expenditure

	2008-09	2009-10	2010-11	2011-2012	2012-13	Average
Budget External	35%	53%	58%	52%	60%	51%
RGOB	65%	47%	42%	48%	40%	49%
PEE External	25%	48%	54%	47%	59%	47%
RGOB	75%	52%	46%	53%	41%	53%

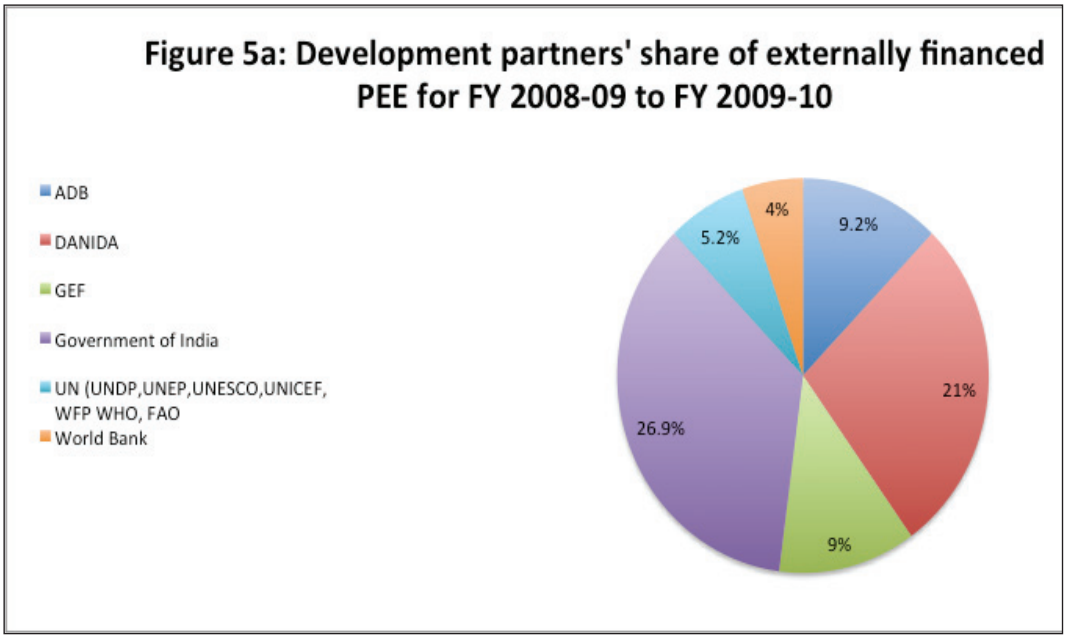
Table 7 shows the source of funding for each environmental cluster. The largest share of external funding is provided for 'climate change' with 66.48 % (Nu. 413.10 million) in FY 2010-2011 and in FY 2011-2012 maximum funding amounts to Nu. 7.91 million (74.73%) is provided for 'environmental protection'. The 'environmental mainstreaming' has the highest share of PEE in the FY 2012-2013 with 74 % amounting to Nu. 720.85 million.

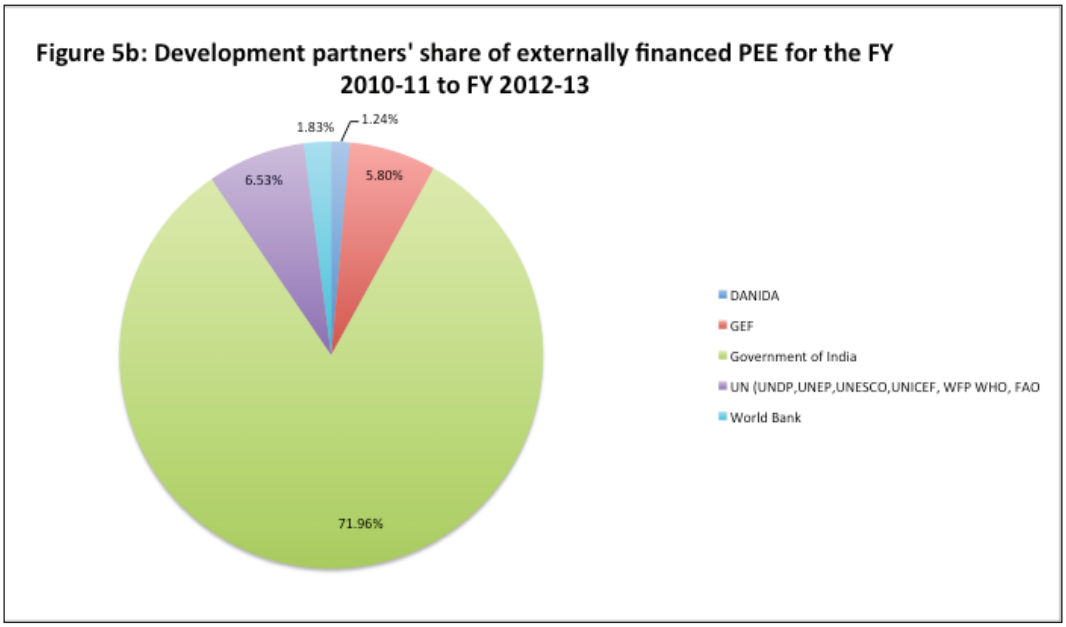
The external funding provided for 'soil conservation and land management' has consistently remained at the lowest throughout the last three FY's of the 10th FYP with 5.92 % (Nu.11.06 million) in FY 2010-2011, 12.20 % (Nu. 15.39 million) in FY 2011-2012 and 18% (Nu. 47.82 million) in FY 2012-2013respectively although the share of PEE in absolute terms has drastically increased to Nu. 36.76 million in FY 2012-2013 from FY 2010-2011.

Table 7: Source of PEE Funding According to Environmental Clusters															
	2010-2011					2011-2012					2012-2013				
Environmental Clusters	Source			External	RGOB	Source			External	RGOB	Source			External	RGOB
-- Million Nu. --	RGOB	External	Total	%	%	RGOB	External	Total	%	%	RGOB	External	Total	%	%
1.Environmental Protection	24.37	20.40	44.77	**45.57%**	**54.43%**	2.68	7.91	10.59	**74.73%**	**25.27%**	9.94	23.04	32.99	**70%**	**30%**
2.Urban, rural and industrial environmental management	261.58	202.28	463.86	**43.61%**	**56.39%**	270.96	297.30	568.26	**52.32%**	**47.68%**	281.66	292.78	574.45	**51%**	**49%**
3.Biodiversity conservation	29.46	27.60	57.06	**48.37%**	**51.63%**	33.25	27.00	60.25	**44.82%**	**55.18%**	19.74	30.68	50.42	**61%**	**39%**
4.Information and knowledge	54.01	63.44	117.45	**54.01%**	**45.99%**	107.29	80.64	187.93	**42.91%**	**57.09%**	33.98	61.47	95.45	**64%**	**36%**
5.Natural resource management	47.48	59.78	107.26	**55.73%**	**44.27%**	58.46	31.36	89.82	**34.91%**	**65.09%**	38.28	51.54	89.83	**57%**	**43%**
6.Soil conservation and land management	175.68	11.06	186.74	**5.92%**	**94.08%**	110.80	15.39	126.19	**12.20%**	**87.80%**	219.08	47.82	266.90	**18%**	**82%**
7.Climate change	208.31	413.10	621.41	**66.48%**	**33.52%**	137.22	258.94	396.16	**65.36%**	**34.64%**	153.09	241.93	395.02	**61%**	**39%**
8.Environmental mainstreaming	176.71	316.97	493.68	**64.21%**	**35.79%**	541.40	425.30	966.70	**44.00%**	**56.00%**	257.26	720.85	978.11	**74%**	**26%**
9.Miscellanous (other)	2.49	15.69	18.18	**86.28%**	**13.72%**	15.75	8.18	23.93	**34.18%**	**65.82%**	0.92	1.93	2.85	**68%**	**32%**
Total Environmental expenditure	**980.10**	**1,130.32**				**1,277.80**	**1,152.02**				**1,013.96**	**1,472.05**			

The RGoB funding provided for 'soil conservation and land management' has consistently remained at highest throughout the last three FY's of the 10th FYP with 94.08 % (Nu.175.68 million) in FY 2010-2011, 87.80 % (Nu. 110.80 million) in FY 2011-2012 and 82 % (Nu. 219.08 million) in FY 2012-2013 respectively similarly the share of PEE in absolute terms has substantially increased to Nu. 43.40 million in FY 2012-2013 from FY 2010-2011.

While in the last three FY's of the 10th FYP, the share of PEE contribution for 'climate change' was lowest in the FY 2010-2011 with 33.52 % amounting to Nu. 208.31 million. Similarly in the FY 2011-2012, the 'environmental protection' has recorded at the lowest with 25.27 % (Nu. 2.68 million) and in the FY 2012-2013, the 'environmental mainstreaming' accounted the lowest with 26 % (Nu. 257.26 million).





4.7 PEE and budget efficiency

Budget efficiency is gauged by the ratio of actual expenditure to budget allocation. Table 8 shows the overall budget efficiency for three years of the total public expenditure and for PEE. During the FY 2010-2011, the PEE budget absorption rate was 57.61 % with expenditure totaling to Nu. 2110.41 million out of a total budget allocation of Nu. 3663.28 million. During the FY 2011-2012, the ratio increased

significantly to 79.99 % with expenditure amounting to Nu. 2429.73 million against the budget allocation of Nu. 3037.54 million. In the FY 2012-2013, the PEE budget absorption rate further increased to 89.96 % with expenditures amounting to Nu.2,486.01 million against the total budget allocation of Nu 2,763.57 million.

In contrast, the budget efficiency in case of total public expenditure is 83.48 %, 91.71% and 62.74 % in FY 2010-2011, 2011-2012 and 2012-2013 respectively. The PEE budget efficiency is lower than the PE by 25.7 % and 11.72 % respectively for the FY 2010-2011 and 2011-2012. However, during the FY 2012-2013, the PEE budget efficiency is higher than the PE 27.21 %. A comparative analysis of budget efficiency among central ministries, autonomous agencies and local governments, indicates that the PEE efficiency of local government is the highest in the FY 2010-2011 and 2012-2013 with 81.82 % and 91.73 % respectively, however, during the FY 2011-2012, the Ministries showed the highest in PEE efficiency with 81.45%.

Table 8: Budget Efficiency of Autonomous Agencies, Central and Local Government

	2010-2011				2011-2012				2012-2013			
million Nu.	**Autonomous Agencies**	**Ministries (10)**	**Dzongkhags (20) & Gewogs**	**Total**	**Autonomous Agencies**	**Ministries (10)**	**Dzongkhags (20) & Gewogs**	**Total**	**Autonomous Agencies**	**Ministries (10)**	**Dzongkhags (20) & Gewogs**	**Total**
AU Codes	**100.01-134.01**	**201.01-212.01**	**401.01-420.09**		**100.01-134.01**	**201.01-212.01**	**401.01-420.09**		**100.01-134.01**	**201.01-212.01**	**401.01-420.09**	
Public Environmental Expenditure												
Budget	124.98	2,410.32	1,127.98	**3,663.28**	184.50	1,570.44	1,282.60	**3,037.54**	143.93	1,729.75	889.89	**2,763.57**
Expenditure	92.59	1,094.86	922.96	**2,110.41**	106.35	1,279.07	1,044.31	**2,429.73**	113.51	1,556.18	816.32	**2,486.01**
Efficiency	74.08%	45.42%	**81.82%**	**57.61%**	57.64%	**81.45%**	81.42%	**79.99%**	78.86%	89.97%	**91.73%**	**89.96%**
Public Expenditure												
Budget	5,226.26	24,378.23	10,316.55	**39,921.05**	5,273.55	29,479.54	12,066.26	**46,819.35**	4,255.80	40,159.03	8,696.98	**53,111.81**
Expenditure	4,246.27	19,858.95	9,219.40	**33,324.63**	4,443.99	27,510.26	10,983.54	**42,937.79**	3,800.71	21,149.11	8,374.54	**33,324.36**
Efficiency	81.25%	81.46%	**89.37%**	**83.48%**	84.27%	**93.32%**	91.03%	**91.71%**	89.31%	52.66%	**96.29%**	**62.74%**
Efficiency difference %- point	-7.16%	-36.04%	-7.54%	**-25.87%**	-26.63%	-11.87%	-9.61%	**-11.72%**	-10.44%	37.30%	-4.56%	**27.21%**

4.8 Changes in PEE from FY 2008-2009 to FY 2012-2013

As can be seen from Table 9 below, the ratio of PEE in total public expenditure slightly increased from 6.5% in FY 2009-2010 to 7.14 % in FY 2010-2011. However the ratio of PEE in total public expenditure slightly decreased to 6.97 % and further decreased to 6.81 % in the FY 2012-2013. The percentage of PEE that was funded by the RGoB decreased from 5.4% in FY 2009-2010 to 4.8 % in FY 2010-2011, while the share of PEE increased to 5.20 % in FY 2011-2012 and It further decreased to 4.01 %.

Table 9: Share of PEE in Total Expenditure

	2009-2010			2010-2011			2011-2012			2012-2013		
million Nu.	PE	PEE	%	PE	PEE	%	PE	PEE	%	PE	PEE	%
External Funded	11,118	937	**8.43%**	9,163.64	1,130.32	**12.33%**	10,262.73	1,152.02	**11.23%**	11,246.32	1,472.05	**13.09%**
RGOB(domestic)	18,921	1,029	**5.44%**	20,378.41	980.10	**4.81%**	24,580.17	1,277.81	**5.20%**	25,280.85	1,013.96	**4.01%**
Total	**30,039**	**1966**	**6.54%**	**29,542.06**	**2,110.42**	**7.14%**	**34,842.90**	**2,429.83**	**6.97%**	**36,527.17**	**2,486.01**	**6.81%**

In terms of external funding, the ratio of PEE In total public expenditure increased from 8.4 % to 12.33 % in FY 2010-2011 but decreased to 11.23 % in FY 2011-2012. However, during the FY 2012-2013, the ratio of PEE In total public expenditure increased to 13.09 %.

The change in PEE by agency, source and expenditure type is presented below in Table 10. It is noted that in the FY 2010-11, the central agency were allocated the maximum of PEE representing 56.27 % of the total PEE, while the Dzongkhag and Gewog sharing 28.4% and 15.49 % respectively in the same fiscal year. The PEE funding contributed from the RGoB and External are 46.44% and 53.56 % respectively. In terms of the PEE, the share of capital is 91.56 % against the current expenditure of 8.44%.

Similarly in FY 2011-12, the central agency were allocated the maximum of PEE representing 57.02 % of the total PEE, while the Dzongkhag and Gewog sharing almost equal of 21 % and 21.99 % respectively in the same fiscal year. The PEE funding contributed from the RGoB and External are 52.59 % and 47.41 % respectively. In terms of the PEE, the share of capital is 91.86 % against the current expenditure of 8.14%.

In FY 2012-13, the central agency were allocated the maximum of PEE representing 67.16 % of the total PEE, while the Dzongkhag and Gewog sharing 18.04 % and 14.79 % respectively in the same fiscal year. The PEE funding contributed from the RGoB and External are 40.79 % and 59.21 % respectively. In terms of the PEE, the share of capital is 92.97 % against the current expenditure of 7.03 %.

Table 10: Change in PEE by agency, source and expenditure type.								
	Agency			Source		Expenditure		Total PEE
	Central	Dzongkh	Gewog	RGOB	External	Current	Capital	
2010-2011								
Total(Million Nu.)	1,187.46	596.06	326.90	980.10	1,130.32	178.03	1,932.39	2,110.42
Percentage(%)	56.27	28.24	15.49	46.44	53.56	8.44	91.56	100.00
2011-2012								
Total(Million Nu.)	1,385.41	510.18	534.23	1,277.81	1,152.02	197.67	2,232.15	2,429.82
Percentage(%)	57.02	21.00	21.99	52.59	47.41	8.14	91.86	100.00
2012-2013								
Total(Million Nu.)	1,669.69	448.56	367.76	1,013.96	1,472.05	174.71	2,311.30	2,486.01
Percentage(%)	**67.16**	**18.04**	**14.79**	**40.79**	**59.21**	**7.03**	**92.97**	**100.00**

4.9 International comparison: Bench marking

One of the conclusions drawn from the 2009 PEER was that PEE in Bhutan is much higher than other countries and recommended that PEE be maintained at 2.8% of GDP. However, this was probably based on total PEE which includes expenditures which are not included in the international definition of PEE. Table 11 shows a comparison of Bhutan's core PEE with that of some other developing countries. In the first two years of the 10th FYP Bhutan's total PEE and PE as percentage of GDP was 2.1% and 2.9% respectively. As of FY 2010-2011, the total PEE of GDP in term of percentage is 2.7 % and 2.6 % in FY 2011-2012. The percentage of total PEE for the FY 2012-2013 remains unknown due to the unavailability of GDP for the year 2013.

5. Findings and Recomendations

5.1 Findings

1. The PEER indicates that Bhutan allocates a substantial portion of public expenditure related to the environment. About 7% of the public expenditures go towards the achievement of the government's environment related policy objectives within the context of GNH over the last three FYs of the 10th FYP.

2. The total PEE during the FY 2010-2011 amounted to Nu. 2110.42 million, which is equal to 7.15% of the total public expenditure, and 2.7% of the GDP. The total PEE during the FY 2011-2012 was Nu. 2,429.82 million, or 6.97% of the total public expenditure, and 2.6 % of the GDP. The PEE during the FY 2012-2013 amounted to Nu. 2,486.01 million, which is equal to 6.81 % of the total public expenditure, and the contribution for the same FY is not known due to the unavailable data on GDP for the year 2013.

3. The core PEE for the FY 2010-2011 was Nu. 683.14 million, which is equal to 2.3% of the total public expenditure. In FY 2011-2012 the core PEE was Nu. 827.02 and in the FY 2012-2013, the core PEE was Nu. 753.31 million. The core PEE percentage in terms of GDP remained consistently at 1 % in all the three FYs. The ratio of core PEE to total PEE remained at more or less the same level in all the three years with 32 % in FY 2010-2011, 34 % in both the FY 2011-2012 and FY 2012-2013.

4. The core PEE in Bhutan is relatively higher when compared with the estimates of other countries. The conclusion of the 2009 PEER shows that the PEE in Bhutan, estimated to be 2.8 % of GDP is significantly higher than other countries with could not be confirmed. It appears that the 2009 PEER may have included more categories of expenditures in the PEE than those covered by the international definition.

5. Within the core clusters, PEE on urban, rural and industrial environmental management registered the maximum increase of 7.9 % growing from Nu.201 million in FY 2008-2009 to Nu. 574.45 million in FY 2012-2013. In the case of PEE on biodiversity conservation, there was a decrease of 9.95 % from Nu.158.40 million in FY 2008-2009 to Nu. 50.42 million in FY

2012-2013, although this cluster was registered as the second highest in the core PEE in the initial two FYs of the 10th FYP.

6. Considering the baseline as FY 2008-2009, the total PEE increased to 88.05 % in FY 2012-2013 from 49 % in FY 2008-2009 although the total Public Expenditure increased by 58 % in FY 2012-2013 from FY 2008-2009.

7. For the last FY of the 10th FYP 2012-2013, 67% (Nu. 1,669.69 million) of the total PEE was incurred at the Central, while 18% was incurred (Nu.448.56 million) at the Dzongkhag Level and 15% of total PEE accounted at the Gewog Level with Nu. 367.76 million.

8. The 'Forestry Services' accounted for the highest share of total PEE with 40.4% in FY 2008-2009 but towards the end of the 10th FYP (FY 2012-13) the maximum share to the PEE is contributed from the 'Road and Bridges Services' with Nu 914.58 million (Relative of 23.63%). This is followed by 'Agricultural Services', which accounted for 611.02 million in the FY 2012-13 although it was recorded as the third major contributor with 11.10% to the PEE in the FY 2008-2009. However, energy services accounted the lowest in the end of the 10th FYP with 0.44% share.

9. More than 60% of the total PEE in FYs 2010-2011 and 2011-2012 and approximately 80% of total PEE in FY 2012-2013 are accounted for by three agencies namely Ministry of Works and Human Settlement, Ministry of Agriculture and Forest and the National Environment Commission.
10. The PEE on environmental mainstreaming has recorded a substantial increase in absolute terms from Nu. 266.40 million in FY 2008/09 -2009/10 to Nu 784.31 million in FY 2011/12-2012/13. Similarly, there is an increase of Nu 135.14 million to Nu. 217.42 million in climate change.

11. In the FY 2012-2013 PE budget outlay, the allocation for current expenditure increased by 3.43 % to 47.16 %, while total budget provision for capital expenditure decreased from 56.26 % to 52.84 %. In case of PEE, the budget allocations for current expenditure decreased from 7.91 % to 7.06 % while the allocation for capital expenditure increased from 92.09 % to 92.94 %. Over the 10th FYP, the allocation of total budget outlay from FY 2008-09 to 2012-2013 has remained consistently throughout in terms of PEE distribution.

12. The external funding provided for 'soil conservation and land management' has consistently remained at the lowest throughout the last three FY's of the 10th FYP with 5.92 % (Nu.11.06 million) in FY 2010-2011, 12.20 % (Nu. 15.39 million) in FY 2011-2012 and 18% (Nu. 47.82 million) in FY 2012-2013respectively although the share of PEE in absolute terms has drastically increased to Nu. 36.76 million in FY 2012-2013 from FY 2010-2011.

13. As of FY 2010-2011, the total PEE of GDP in term of percentage is 2.7 % and 2.6 % in FY 2011-2012. The percentage of total PEE for the FY 2012-2013 remains unknown due to the unavailability of GDP for the year 2013.

14. A comparative analysis of budget efficiency among central ministries, autonomous agencies and local governments, indicates that the PEE efficiency of local government is the highest in the FY 2010-2011 and 2012-2013 with 81.82 % and 91.73 % respectively, however, during the FY 2011-2012, the Ministries showed the highest in PEE efficiency with 81.45%.

5.2 Recommendations

5.2.1 Updates of the PEER

- A mid-term PEER for the 11th FYP covering the first two fiscal years should be prepared in 2017 and a final PEER covering all five years at the end of the FYP.

- A review of environmental expenditures of the private sector including CSOs should be prepared at the same time as the next PEER scheduled to be prepared in 2013. This will provide a full account of the environmental expenditures in Bhutan and supplement the development of 'green national accounting' system by the National Statistics Bureau (NSB).

5.2.2 Institutional development and anchoring

- A dedicated focal person should be designated at the DPA, MoF to continuously maintain PEE database in PEMS and also to take a lead in coordinating with the relevant agencies to enhance the mainstreaming of PEE at the budget level.
- The PEER task force with MoF as the chair and members from NECS, NSB, GNHC and other relevant ministries and agencies should be maintained on

a permanent basis so that it can take up any PEER related issue as and when necessary.

- The PEE database and other PEER relevant documentation should be posted on the website of DPA, MoF as and when published.

- The identification and the assigning of the activities and sub-activities to the PEE classification is carried out by a focal person at DPA. However, the inclusion of the PEE related activities of assigning to PEE are found challenging because of the lack of comprehensiveness on the aspects of domain and clusters. Therefore, the data available for the PEER is a sole representation of the focal person's understanding and interpretation of the overall PEE classifications. For this, it is imperative that the focal person is well versed with the PEE classification for maintaining consistency while conducting PEER.

5.2.3 Methodological development and applications

- At the Public Environmental Expenditure level, although the identified 'green' budget codes are tagged with the activities and sub-activities manually in the system and the reports are developed and generated through the PEMS, the tagging of green codes should be done through the MYRB system from Department of National Budget as and when the spending agency propose budgets.

5.2.4 Link to 11th Five Year Plan

- The mid-term PEER must be carried out towards the mid of the 11th FYP.

5.2.5 Policy relevance and effectiveness

- The PEE status must be reflected in the Budget Report while presenting to the Parliament as well as in the 11th FYP Mid-Term Review documents and further include the documents published through the relevant agencies like NEC.

- An efficient mainstreaming of the environment will make it more difficult to separate the environmental expenditures. This is because the PEE data are extracted ex-post and the budget codes are not made to reflect mainstreamed PEE. It is not feasible to use the PEE data as a policy tool for a normative

assessment of how much the PEE should be. It is also difficult to apply the PEE data to assess carbon neutrality in Bhutan (as suggested in the PEER concept paper), budget allocation to local government, or to make assessments of the expenditures for emerging topics, such as climate change.

Annex 1: Environmental Classification of PEE in Bhutan

Environmental clusters and sub- clusters	Comments
1. Environmental protection	*** Core environmental expenditure ***
1.1 Ambient air quality	Monitoring and regulation for ambient air quality
1.2 Ambient water quality	Monitoring and regulation for ambient water quality
1.3 Clean technology and environmental clearances	Clearances for infrastructure, industry and mining
1.4 Vehicle emission reduction	Enforcement and monitoring of vehicle emission standards
1.5 Regulation of ozone depleting substances	Activities to phase out ozone depleting suubstances
1.6 Other pollution regulation and control	Other ambient emission regulation to water, air and soils
2. Urban, Rural and Industrial Environmental Management	*** Core environmental expenditure ***
2.1 Waste management	Regulation and management of waste
2.2 Water supply services	Access to clean water.
2.3 Sanitation services / drainage	Toilet facilities and sewage systems.
2.4 Other environmental management services	Other management of solid waste and waste water; provision of services (other than water resources and sanitation)
3. Biodiversity conservation	*** Core environmental expenditure ***
3.1 Protected areas and parks management	Management of protected areas
3.2 Protected species / plants and wildlife	Management of protected species. Human wildlife conflicts
3.3 Other biodiversity management, giudelines and support	Other biodiversity
4. Information and knowledge	*** Core environmental expenditure ***
4.1 Research and higher education	Universities and colleges.
4.2 Primary environmental education	Environmental education.
4.3 Environmental awareness and campaigns	Awareness, e.g. world environment day.
4.4 Information and statistics	Environmental related information, e.g. publications, databases and monitoring
4.5 Human resource development	Activities to enhance knowledge and skills of farmers and professionals
4.6 Other environment information and knowledge	Activities not covered above, e.g. conferences.
5. Natural resource management	
5.1 Forestry and forest products	Forestry (management, planting, nurseries)

5.2 Forest fires prevention and control	Equipment and training for forest fire prevention and control; fire break establishment and maintenance
5.3 Community level NRM	Community level activities on NRM, e.g. community forest.
5.4 Watershed management and water resources	Protection and management of spring sources and watersheds.
6. Soil conservation and land management	
6.1 Soil conservation and erosion control	Protection against soil erosion (also a large activity under road construction) and soil conservation activities.
6.2 Sustainable land management	Planning and sustainable use of land
7. Climate change	Some overlap with natural resource management, e.g. in water resource management.
7.1 Climate change adaptation	Measures to reduce climate change risks, e.g. river bank protection
7.2 Disaster risk reduction	GLOF monitoring and risk avoidance. Other Disaster Risk Reduction (DRR).
7.3 Meteorological services and early warning	Hydro-meteorological services and flood warning
7.4 Climate change mitigation	Renewable energy (except large scale hydro power). Energy efficiency and CDM projects
7.5 Weather related damage	Monsoon and other flood damage compensation. Damage from storms.
7.6 Irrigation (adaptation and resilience	Rehabilitation and construction of irrigation (water supply to crops). Could also have been included under natural resource management or climate change adaptation. It is assumed that irrigation rehabilitation and construction is located where the alternatively would be large climate vulnerability.
7.7 Other climate change	Any other not included above. E.g. national communications to UNFCC
8.1 Mainstreaming in plans and policies	Efforts to mainstream environment in procedures including capacity development.
8.2 Mainstreaming in farm roads	Estimated 15 % additional costs of environmental related expenditures for farm road construction.
8.3 Mainstreaming in road projects	Estimated 15 % additional costs of environmental related expenditures for road construction by RGoB, but not for DANTAK.
8.4 Other environmental mainstreaming	Any other not included above.
9. Miscellaneous (other)	If several similar PEEs are included here there will be an option to include these specifically in the classification.
9.1 Eco-tourism	Public investments in eco-tourism. Could also include other private sector related activities.
9.2 Environmental and occupational health	Environmental health related topics.
9.3 Other environmental topics	Other issues not covered in any of the above.

Annex 2: Bhutan public finance budget codes

Accounting Unit AU code	Programme PR code	Sub-programme SP code	Activity / Sub-Activity. AC code	Object OB code
Autonomous agencies: 101.01 102.01 1xx.01 Etc.	Two digit codes for each programme: 01 0x Etc.	Three digit codes: 001 00x Etc. Not all programmes may have also SP codes.	Three digit codes and .00 for activity name: 001.00 002.00 00x.00 Etc. Sub-activity codes two digits after AC code: 00x.01 00x.02 Etc.	Four digits: xx.zz Current expenditure: 1x.zz to 3x.zz Capital expenditure: 4x.zz to 9x.zz Same code template is used for all accounts. This enables a summary by objective class in the Annual Financial Statements (AFS) report, e.g. for rental of property (13.01) or purchase of vehicles (53.01)
Ministries (10 ministries): 201.01 202.01 2xx.01 Etc.				
Dzongkhag administrations (total of 20): 401.01 402.01 4xx.01 Etc. The two digit code continues from 02 for each geog of the Dzongkhag				
Geogs under each Dzongkhag (total of 205): 4xx.02 4xx.03 4xx.0y Etc. First three digits the Dzongkhag.				
Example, for sub-activity budget code: 205.01.18.003.001.03				
Ministry of Agriculture: AU 205.01	Forestry Services: PC 18	Conservation and Afforestation Services: SPC 003	Social Forestry Division: AC 001.00 Sub-Activity: Watershed management section: SAC 001.03	Computers and peripherals: 54.03

The public environmental expenditures (PEE) are identified at activity/subactivity level. Some can be identified at accounting unit (AU) level (e.g. for NEC the AU is 114.01) and programme level when all activities are included. But each activity/sub-activity code still has to be reviewed according to specific environmental classification and the source of finance. The source of external financing (development partner) can be identified through the Finance Item Codes (FIC) where each programme has a unique four digit code (e.g. for the Danida support to NECS under the EUSPS the FIC is 1784).

Annex 3: PEE Budget Code Functions

For each activity/sub-activity budget codes selected for PEE information is collected on the following dimensions.

Dimensions	Source of information	Comments
Institutions	AU codes	Available from CEBA / PEMS. It will also be possible to assess PEE according to programmes, e.g. PC 18 ('Forestry services').
Economic	Recurrent / capital budget and expenditure	Available from CEBA/ PEMS
Financing	FIC codes RGOB sources and External finance (grants and loans)	Available from CEBA / PEMS FIC codes will make it possible to identify if the source of financing is RGoB or external, and the specific external sources.
Environmental clusters / sub-clusters	Based on classification of environmental expenditure developed for the PEER. Nine environmental clusters and 40 environmental sub-clusters.	To be added manually for each of the selected activity budget lines. Not yet available in PEMS (for further development). The environmental classification can be linked to the Bhutan Environment Outlook (BEO) format.

The activity budget codes selected for inclusion in PEE are a subset of all activity budget codes of the public finance system. The selection of activity budget codes for PEE is based on the initial screening and refined with the definition of environmental expenditures that were validated with the relevant institutions.

Annex 4: PEE Data Base Structure

#	Data	Data	Source / Comment
0	ID number	No. 1 - xxx	Number added in PEE data base
1	Accounting Unit	AU code (xxx.xx)	PEMS
2	Institutional name	Text	AU corresponding institution (corresponding to AU code)
3	Institutional cluster	1, 2, 3 or 4	1: Autonomous agencies (AU 100), 2: Ministries (AU 200), 3: Dzongkhags (AU 4xx.00), and 4: Geogs (AU 4xx.0z)
4	Programme code	PC (xx)	PEMS
5	Programme name	Text	Corresponding to PC
6	Sub-programme code	SPC (xxx)	PEMS
7	Sub-programme name	Text	If applicable. Corresponding to SPC
8	Activity code	AC (xxx.xx)	PEMS
9	Activity name	Text	PEMS
10	Sub-activity code	SAC (xxx.xx)	PEMS
11	Sub-activity name	Text	PEMS
12	Finance information code	FIC (xxxx)	PEMS
13	Funding source	B / F	From FIC the funding sources is identified either as RGOB (B) or external (F)
14	Funding source	Text	RGOB or development partner (donor agency)
15	Budget: Current	Nu.	PEMS
16	Budget: Capital	Nu.	PEMS (Primary Source MYRB)
17	Budget: Sum	Nu.	PEMS
18	Expenditure: Current	Nu.	PEMS
19	Expenditure: Capital	Nu.	PEMS
20	Expenditure: Sum	Nu.	PEMS
21	Budget Variance	Nu.	PEMS
22	Environmental classification	Double digit code: 1-8.1-7, e.g. 5.3	PEMS (Parameter designed to tagged clusters against activity and sub-activity)
23	Environmental cluster.	Text	Environmental cluster according to first digit (1 to 9) of the environmental classification code.
24	Environmental sub-cluster.	Text	Second level of environmental classification (sub-cluster) corresponding to double-digit code.

Annex 5: Environmental Clusters and RGoB Programmes

	1.Environmental Protection	2.Urban, rural and industrial environmental management	3.Biodiversity conservation	4.Information and knowledge	5.Natural resource management	6.Soil conservation and land management	7.Climate change	8.Environmental mainstreaming
2010-2011	*(Million Nu.)*							
AGRICULTURE SERVICES	14.0	8.0	2.8	4.7	2.7	7.6	84.8	184.0
ENERGY SERVICES	0.0	0.0	0.0	0.6	0.0	0.0	187.6	0.0
FORESTRY SERVICES	9.9	84.0	43.1	31.1	39.8	32.1	0.6	4.1
GENERAL ADMINISTRATOR AND DIRECTION SERVICES	5.7	49.2	9.3	9.8	3.9	0.6	76.6	0.7
HEALTH SERVICES	0.3	56.7	0.0	6.0	54.7	0.0	7.5	0.3
OTHER PROGRAMMES	9.1	195.5	11.1	37.3	7.5	0.6	184.5	5.2
ROADS & BRIDGES SERVICES	0.0	0.8	0.0	0.0	0.0	143.1	9.5	284.9
URBAN DEVELOPMENT AND ENGINEERING SERVICES	2.7	109.0	0.0	2.3	0.0	3.3	138.9	12.4
2011-2012								
AGRICULTURE SERVICES	0.0	17.5	3.4	22.3	11.4	11.1	136.7	251.7
ENERGY SERVICES	0.0	0.0	0.0	0.7	0.0	0.0	34.9	0.0
FORESTRY SERVICES	0.1	117.5	43.5	71.4	59.7	4.7	2.5	0.9
GENERAL ADMINISTRATOR AND DIRECTION SERVICES	0.0	21.7	0.0	22.1	2.8	3.6	51.0	1.1
HEALTH SERVICES	0.0	166.3	0.9	2.4	5.0	0.0	5.8	0.3
OTHER PROGRAMMES	4.7	158.9	0.0	30.3	3.3	11.0	122.8	278.9
ROADS & BRIDGES SERVICES	0.0	0.6	0.0	4.1	0.0	98.6	5.7	374.2
URBAN DEVELOPMENT AND ENGINEERING SERVICES	0.0	103.6	0.0	4.1	6.0	0.0	53.2	45.0
2012-2013								
AGRICULTURE SERVICES	2.6	24.3	2.9	23.8	4.7	77.4	254.5	220.8
ENERGY SERVICES	0.0	0.0	0.0	0.3	0.0	0.0	10.7	0.0
FORESTRY SERVICES	0.9	19.2	33.9	8.1	44.9	5.0	0.2	0.5
GENERAL ADMINISTRATOR AND DIRECTION SERVICES	0.4	45.5	0.0	14.3	1.2	1.5	7.1	1.0
HEALTH SERVICES	4.9	122.3	0.0	3.6	8.4	0.0	10.5	0.3
OTHER PROGRAMMES	2.1	195.0	0.0	38.1	20.0	7.9	78.7	4.7
ROADS & BRIDGES SERVICES	0.0	0.4	0.0	0.0	0.0	170.2	6.6	737.4
URBAN DEVELOPMENT AND ENGINEERING SERVICES	2.6	211.4	1.9	1.0	4.6	3.9	31.8	13.6

Annex 6: PEER Summary Table

Environmental Cluster	Agency			Source		Expenditure			Pct.
-- Million Nu.--	CENTRAL	DZONGKHAG	GEWOG	RGOB	External	CURRENT	CAPITAL	Total	
1.Environmental Protection	**23.35**	**0.86**	**0.00**	**36.99**	**51.36**	**3.20**	**21.01**	**24.21**	
1.1.Ambient air quality	0.00	0.00	0.00	1.02	2.31	0.00	0.00	0.00	0.00%
1.2.Ambient water quality	6.42	0.00	0.00	3.92	9.72	2.15	4.27	6.42	0.30%
1.3.NUClean Technology and environmental clearancesLL	0.79	0.00	0.00	25.30	2.57	0.69	0.10	0.79	0.04%
1.4.Vehicle emission reduction	0.50	0.00	0.00	0.00	1.93	0.00	0.50	0.50	0.02%
1.5.Regulation of ozone depletion substances	6.79	0.00	0.00	0.00	13.40	0.00	6.79	6.79	0.32%
1.6.NULLOther pollution regulation and control	8.86	0.86	0.00	6.75	21.43	0.36	9.36	9.72	0.45%
2.Urban, rural and industrial environmental management	**253.33**	**187.87**	**121.44**	**814.20**	**792.36**	**11.52**	**551.13**	**562.65**	
2.1.Waste management	20.59	9.40	0.47	20.40	43.10	0.01	30.45	30.46	1.42%
2.2.Water supply services	208.27	91.47	78.25	341.12	470.30	2.86	375.12	377.98	17.61%
2.3.Sanitation services / drainage	17.08	55.95	36.58	295.90	161.84	1.22	108.39	109.60	5.11%
2.4.Other environmental management services	7.40	31.05	6.15	156.78	117.12	7.43	37.18	44.61	2.08%
3.Biodiversity conservation	**36.64**	**4.59**	**1.88**	**82.45**	**85.28**	**9.51**	**33.60**	**43.11**	
3.1.Protected areas and parks management	28.80	3.86	0.00	28.99	30.21	7.18	25.48	32.66	1.52%
3.2.Protected species / plants and wildlife	6.41	0.60	1.88	37.16	27.09	1.14	7.75	8.89	0.41%
3.3.Other biodiversity management, guidelines and support	1.43	0.13	0.00	16.30	27.98	1.18	0.38	1.56	0.07%
4.Information and knowledge	**33.49**	**8.95**	**7.26**	**195.28**	**205.55**	**3.98**	**45.72**	**49.70**	
4.1.Research and higher education	3.92	0.75	0.00	61.29	20.75	0.00	4.67	4.67	0.22%
4.2.Primary environmental education	0.00	0.00	0.00	0.83		0.00	0.00	0.00	0.00%
4.3.Environmental awareness and campaigns	1.51	0.96	0.03	11.24	10.84	0.98	1.52	2.51	0.12%
4.4.Information and statistic	4.57	0.77	0.11	35.75	29.06	1.34	4.11	5.45	0.25%
4.5.Human resource development	21.21	5.66	7.05	74.28	135.20	0.78	33.14	33.92	1.58%
4.6.Other environment information and knowledge	2.28	0.82	0.07	11.90	9.71	0.88	2.28	3.17	0.15%
5.Natural resource management	**50.45**	**19.66**	**15.71**	**144.22**	**142.69**	**20.86**	**64.96**	**85.82**	
5.1.Forestry and forest products	26.66	11.53	5.65	69.91	33.77	17.26	26.58	43.83	2.04%
5.2.Forest fires prevention and control	18.85	0.15	0.19	16.35	22.07	0.46	18.74	19.20	0.89%
5.3.Community level NRM	0.10	6.02	1.21	15.65	20.29	0.12	7.21	7.33	0.34%
5.4.NULWatershed management and water resourcesL	4.84	1.96	8.66	42.31	66.56	3.02	12.44	15.46	0.72%
6.Soil conservation and land management	**180.71**	**5.41**	**2.40**	**505.56**	**74.26**	**1.79**	**186.72**	**188.51**	
6.1.Soil conservation and erosion control	179.46	4.22	0.69	435.96	25.94	0.93	183.45	184.37	8.59%
6.2.Sustainable land management	1.25	1.19	1.70	69.60	48.32	0.86	3.28	4.14	0.19%
7.Climate change	**50.00**	**92.88**	**99.41**	**498.62**	**913.97**	**21.35**	**220.94**	**242.28**	
7.1.Climate change adaptation	4.73	24.49	10.60	59.58	264.53	0.79	39.04	39.83	1.86%
7.2.Disaster risk reduction	10.05	0.00	0.00	19.58	58.46	1.19	8.86	10.05	0.47%
7.3.Meteorological services and early warning	2.26	0.00	0.00	7.35	27.89	0.97	1.28	2.26	0.11%
7.4.Climate change mitigation	32.96	45.53	6.72	220.71	209.54	18.39	66.82	85.21	3.97%
7.5.Weather related damage	0.00	1.07	5.14	36.26	7.50	0.00	6.21	6.21	0.29%
7.6.Irrigation (adaptation and resilience)	0.00	21.77	76.94	141.51	310.03	0.00	98.72	98.72	4.60%
7.7.Other climate change related activities	0.00	0.01	0.00	13.63	36.02	0.00	0.01	0.01	0.00%
8.Environmental mainstreaming	**741.75**	**86.14**	**119.67**	**318.40**	**1,463.12**	**27.41**	**920.15**	**947.56**	
8.1.Mainstreaming in plans and policies	2.96	0.06	0.00	8.01	18.14	0.09	2.93	3.02	0.14%
8.2.Mainstreaming in farm roads	21.16	71.31	119.31	0.00	525.33	0.66	211.11	211.78	9.87%
8.3.Mainstreaming in road projects	402.40	13.55	0.36	0.00	626.99	26.66	389.65	416.30	19.39%
8.4.Other environmental mainstreaming	315.23	1.23	0.00	310.39	292.65	0.00	316.46	316.46	14.74%
9.Miscellanous (other)	**2.72**	**0.00**	**0.00**	**19.17**	**25.79**	**0.72**	**1.99**	**2.72**	
9.1.Eco-tourism	2.04	0.00	0.00	18.59	5.56	0.72	1.31	2.04	0.09%
9.2.Environmental and occupational health	0.68	0.00	0.00	0.58	20.23	0.00	0.68	0.68	0.03%
Total	**1,372.45**	**406.36**	**367.76**	**2,614.89**	**3,754.38**	**100.34**	**2,046.23**	**2,146.57**	
Percentage	**63.94%**	**18.93%**	**17.13%**	**41.05%**	**58.95%**	**4.67%**	**95.33%**		

Note: *The above indicated figure in Annex 6 PEER Summary Table is the total of Fiscal Year 2010-2011 till Fiscal Year 2012-2013.*

Annex 7: List of References

Department of Public Accounts (2010): 'Annual Financial Statements of the Royal Government of Bhutan for the year ended 30 June 2009', Ministry of Finance, May 2011.

Department of Public Accounts (2010): 'Annual Financial Statements of the Royal Government of Bhutan for the year ended 30 June 2009', Ministry of Finance, May 2011.

Ministry of Finance (2009): Report of Public Environment Expenditures of the RGoB for the 9th Plan (in Bhutan), Department of Public Accounts with support from UNDP/UNEP PEI.

RGoB (2008): 10th Five Year Plan for Bhutan, vol.1

World Bank (1999): " Public expenditure reviews (PEERS): progress and potential", PREM Notes No.20

Ministry of Finance (2011): Public Environmental Expenditure Review of the Royal Government of Bhutan, Department of Public Accounts with support from UNDP/UNEP & LoD/RoD JSP.

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