



Trends of Disaster Related Public Fund Allocation in Bangladesh

An analysis of ADPs during 6th Five Year Plan period (FY 2011- FY 2015)



Programming Division
Planning Commission
Government of the People's Republic of Bangladesh



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The People's Republic of Bangladesh

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(Where you have a dream)

Message

I am very happy to learn that the Programming Division of Bangladesh Planning Commission is going to publish the report "Trends of Disaster Related Public Fund Allocation in Bangladesh: An analysis of ADPs during 6th Five Year Plan period (FY 2011- FY 2015)".

Bangladesh is committed to implement the objectives of the international commitments to increase resilience and reduce risks from disaster and to take necessary steps to protect the people through managing disasters in a holistic manner by engaging the entire government machinery. Bangladesh is also committed to ensure the attainment of the Vision 2021 and the associated Perspective Plan, which will reinforce our efforts to attain the goals of Agenda 2030.

This study is a timely initiative considering the background of world development and our leadership position at the critical intersection of global and national policies. It is imperative to look back at our success in the past and how we can take lessons so that future investments on Disaster Risk Reduction (DRR) and Disaster Preparedness (DP) can be more effective. I hope this study will give all concerned stakeholders fruitful insights and directions to improve the planning and budgeting for DRR Investments in Bangladesh. The publication of this report, I am sure, will be beneficial for the policy makers, researchers, academia, planners and development partners tracking the expenditure on DRR and DP.

Finally, I would like to express thanks to all concerned for their efforts in various capacities in preparing the report.

AHM Mustafa Kamal, FCA, MP



Message from NARRI Consortium

NARRI (National Alliance for Risk Reduction and Response Initiatives) is excited and at the same time feeling humble to be part of ground breaking study that attempts to promote risk informed project planning. This bold initiative was driven by the understanding of the salience of comprehensive risk informed planning for national development. We appreciate the opportunity to work with Programming Division of Bangladesh Planning Commission as well as relevant ministries of the Government of Bangladesh and other stakeholders in this endeavor.

In our journey of humanitarian response, disaster preparedness, management and resilience, it became evident that there is a missing link between practices on the ground and the policy instrument at the centre. With the mandate of increasing community resilience in Bangladesh, the Community Based Disaster Preparedness (CBDP) Model of NARRI was well received and adopted by the Department of Disaster Management (DDM) and the Ministry of Disaster Management and Relief (MoDMR). However, it was not possible to remain static at this critical juncture given the vulnerability of Bangladesh in face of growing risks due to hazards, shocks and stresses induced by climate change. Therefore, it became imperative to undertake a study to deepen the understanding and come up with effective and meaningful recommendations as way forward. Bangladesh has already adopted 7th Five Year Plan, it was considered to be the right moment to analyze the 6th Five Year Plan.

This joint study commissioned by Programming Division and NARRI Consortium has paved the way to explore the avenues to make national level development plan risk informed. NARRI strongly believes the study findings and the recommendations will contribute to the development of significant indicators and update the guidelines for Annual Development Programme of GoB.

NARRI subscribes to the value of working collectively (recognized by the UNISDR for such value and practice and awarded UN SASAKAWA Award 2013) and it comprises of ten INGOs- ActionAid Bangladesh, CARE International, Concern Universal, Concern World Wide, Handicap International, HelpAge International, Islamic Relief Bangladesh, OXFAM, Plan International and Soliderites International.

We hope the study will open up the opportunities for risk informed planning at national and international level and again set an example from Bangladesh of its futuristic thinking for implementation of Agenda 2030.

Farah Kabir
Country Director
ActionAid Bangladesh
and Chair, NARRI Consortium

PREFACE

Bangladesh is moving ahead to become a middle income nation by making the 'Vision 2021' a reality. The Government of Bangladesh (GoB) formulated Perspective Plan in 2010 that enshrined solid development targets for the country. The 6th Five Year Plan (2011-2015) and the 7th Five Year Plan (2016-2020) have been prepared as tools to implement the goals and objectives of Perspective Plan. Successful achievement of the targets shall transform the socio-economic environment of Bangladesh to the first stage of a middle income economy. This will usher in a new era for Bangladesh with a higher per capita income and better conditions of human development and the whole nation will be more resilient against hazards and disasters.



The 7th Five Year Plan (2016-2020) under implementation has adopted a sustainable development pathway that "is resilient to disaster and climate change; entails sustainable use of natural resources; and successfully manages the inevitable urbanization transition" as one of the development themes. The different but coherent international and national policy instruments including the Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030, Sustainable Development Goals (SDG), Paris Agreement 2015, World Humanitarian Summit (WHS) outcome document, Disaster Management Act 2012, and National Plan for Disaster Management 2010-2015 will influence this pathway.

The 6th Five Year Plan was the first policy document to endorse the mainstreaming of the resilience nexus of poverty, environment, disaster and climate change into development project planning. The midterm review of the 6th FYP revealed that the disaster management programmes have generally performed well in the recent years but further efforts are needed to minimize the adverse impacts of natural disasters on the livelihood of people. The Disaster Management Act 2012 and Standing Orders on Disaster (Revised in 2010) give clearly defined roles for relevant ministries and agencies in reducing disaster risk and mitigating effects of climate change.

Against this policy background, it is imperative that the "resilience nexus", i.e. the intersections of poverty, environment, disaster and climate change, is adequately addressed in the development project planning and budgeting system of the government. Still, the planning of development projects require the inclusion of Disaster Risk Reduction (DRR) & Disaster Preparedness (DP) in the core of considerations to make it risk informed. Hence the urgency in Bangladesh at this particular development juncture requires a synergy of DRR & DP investment within regular public sector investments to ensure sustainability and value for money of development projects.

For this reason, Programming Division and NARRI entered into a MoU to formalize the collaborative efforts to conduct a study to assess the extent of DRR and DP integration into Annual Development Programmes (ADP). The first of its kind study made a rigorous analysis of previous public spending through ADPs and thoroughly reviewed 164 DRR sensitive projects implemented during the 6th Five Year Plan period. It came up with a measurable calculation that was indeed challenging due to the time and resource constraints. The absence of relevant literature on this research topic was another issue of concern for the researchers. The research subject has therefore been entirely new and this report presents the results of what could be termed as 'preliminary investigation'. Nevertheless, there are scopes for further work on this subject in Bangladesh.

The investigation found that DRR was not adequately understood by the implementing agencies while the lessons from past disasters were not properly incorporated in project designs as well as its implementation. It also found the insufficiency of development investments from multi-hazard perspectives. The study appropriately pointed out the missing link between policy and activities, which should be addressed to meet challenges in the changed scenario of global warming and climate change. The Programming Division formed a Technical Advisory Committee (TAC) led by Chief, Programming Division to provide technical guidance and supervision. TAC engaged continuously with the consultants' team led by the Department of Disaster Science and Management, University of Dhaka on various aspects of the study namely, defining the methodology, fieldwork and completion of the research within the stipulated time.

NARRI has made significant contribution in national disaster preparedness and humanitarian response. It was recognized by the UNISDR through the UN SASAKAWA Award in 2013 for its contribution in the humanitarian sector of Bangladesh. The European Humanitarian Aid and Civil Protection (ECHO)¹ has financed NARRI to carry out the study through the project titled "Enhancing Inclusive Disaster Resilience in Bangladesh" was approved by the NGO Affairs Bureau in 2015.

Programming Division envisions that the research findings and recommendations will be incorporated into the ADP Formulation Guidelines as well as the result based monitoring framework of the 7th Five Year Plan. It is highly expected that this report will provoke discussion on both analytic and policy issues and stimulate others to undertake further investigations in this unfolded field.



(Md. Ziaul Islam)
Member
Programming Division

¹<http://ec.europa.eu/echo/>

Acknowledgement



Public sector investment in Bangladesh plays a key role in addressing Disaster Risk Reduction (DRR) & Disaster Preparedness (DP). The Annual Development Program (ADP) of the government is the main source of funding Disaster Management (DM) related development activities. Till now, there is no such available information regarding the amount and extent of public expenditure in this area. In order to identify and determine the extent Disaster Risk Reduction (DRR) and Disaster Preparedness (DP) have been integrated in the projects implemented with the public money through the ADPs, Programming Division and NARRI Consortium have completed the study titled "**Trends of Disaster Related Public Fund Allocation in Bangladesh: An analysis of ADP's during 6th Five Year Plan period (FY 2011- FY 2015).**"

This study, first of its kind, has taken enormous effort to be completed within a short period of time and limited resources. A Technical Advisory Committee (TAC) comprised of members from different Ministries and Sector Divisions of Planning Commission, led by the Programming Division was formed to provide guidance for carrying out the research. The TAC members gave valuable advice and directives for the successful completion of the study and deserve special thanks for their contribution. Thanks also goes to the TAC members who took the time to conduct field visits to the selected project areas in Rangpur and Barisal to validate the preliminary findings.

The Center for Urban Resilience Studies of the Department of Disaster Science and Management, Dhaka University (DU) recruited by NARRI undertook the responsibility to conduct the study. The authors have combined their subject matter expertise with the Institute of Policy and Budget Studies, DU to produce an analytical report following the guidelines from the TAC. Their effort in completing the research and drafting the report is greatly acknowledged.

I thankfully acknowledge all the government officials in the relevant Ministries and their Departments who provided support through Key Informant Interviews and other information on selected projects. Project staff both at field and central level had provided enormous support to conduct field visits and data collection. At Programming Division, all the officers including the Focal Person supported the study process with great enthusiasm. Their contribution is gratefully acknowledged.

I highly appreciate the technical and logistic support provided by NARRI for the fruitful conduction of the study, in particular ActionAid Bangladesh and Islamic Relief Bangladesh. Thanks also goes to European Humanitarian Aid and Civil Protection (ECHO) who financed the study through the project titled "Enhancing Inclusive Disaster Resilience in Bangladesh" as well as to NGO Affairs Bureau for approving this project.

Representatives from different Development Partners, INGOs provided their voluntary support to improve quality of the report. The independent reviewer did commendable work on proof-reading to make the report readerfriendly. Their efforts are highly appreciated.

I also acknowledge the guidance and support of Mr. Tariq-Ul-Islam, former Secretary, Planning Division and Member, Programming Division for giving the opportunity to undertake this study. I express my gratitude to Mr. M A Mannan, MP the Hon'ble State Minister, Ministry of Finance and Ministry of Planning, for gracing the national sharing workshop held on 26th December 2016.

Finally, I extend my sincere thanks to the Hon'ble Planning Minister Mr. A H M Mustafa Kamal, FCA, MP for his kind and generous support towards conducting the study and publish the report. I hope, this report will serve as a benchmark for risk informed planning and resource allocation at the national level.

Md. Syeedul Haque
Chief, Programming Division
and
Chair, Technical Advisory Committee (TAC)

Executive Summary

Introduction

This study was initiated with the objective of understanding the extent of integration of Disaster Risk Reduction (DRR) and Disaster Preparedness (DP) into Annual Development Programs (ADP) of Government of Bangladesh (GoB). The study also aims to identify the share of resources of the country's development budget allocated for DRR and DP during the 6th Five Year Plan (FY 2011- FY 2015) period. Vulnerability of Bangladesh to risks induced by natural hazards and climate change is a challenge for sustainable development. The study is one of its kind in Bangladesh as no such dedicated research has explored the public resource allocation in terms of DRR & DP in the country.

Policy Analysis

One of the key entry points to understand the DRR allocation was the analysis of policy and institutional framework for disaster management in Bangladesh. Disaster management has long remained an insignificant concern in development sectors. However trends of professionalism in this field started since 2004 with a paradigm shift from relief dependent disaster management to disaster risk reduction and the adoption of Hyogo Framework of Action (HFA) in 2005. The initiation of Comprehensive Disaster Management Programme (CDMP) and the HFA during 2004-2005 contributed to changes in institutional and policy framework, which has been briefly overviewed in this study. Disaster Management Act (2012) of Bangladesh, National Policy of Disaster Management (2015), improvement of the Standing Orders on Disasters (2010) and a tailwind towards the Sendai Framework for DRR (2015) as well as the Sustainable Development Goals (2015) for 2030 & onwards have marked the period of analysis a significant and eventful one. Persistent focus in this line and fine tuning of policies and institutions for disaster management can lead towards the achievement of vision 2021 of the GOB in this sector.

Ministry and Project Selection

Trend analysis revealed several findings of the DRR public investment during the 6th FYP period (2011-2015). During these five years GoB has implemented, grossly modo, 2125 development projects through 39 ministries. The identified six ministries had implemented a total number of 699 projects during the 6th FYP period. Analysis of the Revised Annual Development Programs (RADP) of six selected ministries revealed that 164 projects out of 699 from these ministries were to various extent relevant for the purpose of achieving DRR & DP objectives. These six ministries were namely Ministry of Agriculture (MoA); Ministry of Environment and Forest (MoEF); Ministry of Local Government, Rural Development and Co-operatives (MoLGRDC); Ministry of Housing and Public Works (MoHPW); Ministry of Disaster Management and Relief (MoDMR); Ministry of Water Resources (MoWR). There might be several other ministries that are implementing projects with explicit or implicit components of disaster risk reduction and disaster preparedness. These six identified ministries were chosen as these institutions represent the major stakeholders in disaster management of Bangladesh as per the rules and regulations enshrined in Standing Order on Disasters (SoD) and other policy instruments of GoB with respect to disaster management.

A countercheck by the Technical Advisory Committee (TAC) formed by the Programming Division also suggested this ministerial boundary for analysis. This also revealed that 23.4 percent of the project fund allocation of these 6 ministries was related to DRR & DP. ADP allocations were classified into 17 broad sectors that Bangladesh's development planning is currently practicing. These relevant 164 projects fell

under five different sectors, namely Agriculture; Physical planning, Water supply and Housing; Public administration; Rural development and rural institutions; and Water resources.

Relevance Criteria Determination

Accuracy of findings and relevance of projects were further tested by a questionnaire survey among project officials of these six ministries. The survey ensured a cross checking of selected 699 projects by ministry officials who had knowledge of implementation of these projects. Interviewees identified the percentage of allocation for DRR among all the projects. Some projects had 100 percent allocation for DRR while others had relatively smaller allocation. This assigned weight¹ has been used to broadly classify the 164 projects into three categories: high, medium and low. Any project with more than 70 percent of total allocation for the purpose of DRR was identified as high relevance project. Medium relevance projects had DRR related allocation of 40-69 percent from the total allocation. Rest of the projects which target less than 40 percent of allocation for DRR were identified as low relevance projects². This categorization emphasizes the extent to which DRR & DP have been addressed by the projects, not merely its monetary allocation. For example, “Teesta Barrage Project” had apportioned an amount of 34 crore Taka for DRR which was only 20% of the total allocation for this project. According to the relevance criteria, this is a low category project. But, “Climate Resilient Infrastructure Improvement in Coastal Zone” project had a total allocation of 4.42 crore Taka which was entirely used to address DRR. Despite having a lower amount of allocation than the former project, it was identified as a highly relevant project because DRR was the sole objective of the project. Based on the categorization of the 164 projects, 94 projects were considered to have high relevance, 53 projects had medium relevance and 17 projects had Low relevance with DRR & DP.

Source of Resource Allocation

Total amount of resource allocated for the 164 projects was 15097 crore Taka. Out of this allocation, 68.5 percent was ultimately spent for DRR & DP, which equals to 10346 crore Taka. GoB contributed 63.4 percent of the cost from its own funds while rest of the share was funded by project aid. Over the five consecutive years of ADP, the GoB contribution did not fall below 60 percent which signifies the fact that GoB is committed to investing in DRR & DP of the country as a priority development concern.

Paradox of DRR Investment

One paradoxical aspect of DRR projects in Bangladesh is the concern of fund diversion leading to the change of title of projects by some agencies. Projects having the flavor of disaster risk reduction in the title are almost managed by the MoDMR. On the other hand, several government agencies do not prefer using the word DRR in their documents due to the concern of fund diversion from that particular agency to other agencies. Project title itself might work as a hurdle in inter-ministerial coordination for DRR which should be looked into by the policy makers and relevant stakeholders.

Hazard Based Investment

Development allocations in Bangladesh have addressed 12 types of hazards during the 6th FYP period. 37.2 percent of the 164 projects had a multi-hazard focus while 57.3 percent had single hazard focus. Flood hazard has been the biggest center of attention and 74 projects have addressed this hazard. 56 projects have addressed erosion and 53 projects have addressed cyclone. The other hazards include water logging, environmental hazards, salinity, arsenic, earthquake, landslide, soil erosion and drought.

¹Percentage of allocation for DRR & DP from the total budget

²Decimal Values have been adjusted as Integer Numbers

Ministry of Housing & Public Works and the Ministry of Agriculture did not have any project addressing multi-hazard while rest of the 4 ministries had multi-hazard focused projects. The statistics indicates vulnerability of Bangladesh to hydro meteorological hazards. Floods, especially flash floods, riverbank erosion and cyclones have been frequent incidents in the country which put the lives and livelihoods at serious risk. Planned actions with scientific measures need to be taken to address these problems.

Spatial Distribution of Investment

The spatial distribution of the development projects significantly demonstrates the fact that Bangladesh has been a disaster prone country and there has not been any district of Bangladesh that remains unaffected by or unexposed to any hazard. Southern region of Bangladesh has been the major attention for development investment to address hazards as the region has been affected by multiple hazards over the years. The Chittagong Hill Tracts (CHT) has got relatively less attention in terms of public allocation for DRR & DP during the 6th FYP period.

Field Investigation

The research findings have also deployed the techniques of field study to authenticate its data and enrich the content. Six different projects from the hazard prone areas were identified which was then followed by Focus Group Discussion (FGD) and Key Informant Interview (KII) in order to collect data from the field. Some insights that came out from field visit during this study regarding the project implementation can be very important for the policy makers. There were various problems in the implementation phase, along with a few success stories. It is noteworthy that people have some awareness about DRR & DP. Both the implementation agencies and project beneficiaries understand the meaning of disaster risk reduction, participatory and inclusive approach, gender sensitiveness, alternative livelihood generation etc. However, A major setback in the successful implementation of development projects is the insufficiency of human resources in the implementing agencies. This problem is mitigated to some extent by the involvement of NGOs in the implementation process. NGOs work as bridging entities between the government agencies and the community. Also, market economy is found to be an essential factor for achieving desired success of a project. Sometimes the final outcome of a project is a market product. If the price of the new product does not comply with the market, the whole project becomes unsustainable.

Limitations

The findings of this research have been laid out by acknowledging several limitations. Time and resource constraints, unavailability of required data and data extraction complexities were among the major bottlenecks for in-depth analysis. The research had to depend on the information provided by interviewed ministry officials for relevance criteria determination. Besides, several FGDs and KIIs were conducted during the fieldwork. For this reason some of the findings of this research are subjective in nature.

Conclusion and Recommendations

There exist ample scopes of in-depth research to find out the details of development allocation for DRR in Bangladesh. The government has consistently increased the gross allocation for DRR during the 6th FYP period to comply with the 3rd priority action of Sendai framework for DRR. The Sendai framework states that, "Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment". There is an insufficient understanding regarding structural and non-structural vulnerability in the project formulation as well as

project implementation phases. This can be a barrier to DRR investment towards maximizing benefit. The understanding between implementation agencies and the beneficiaries need more bridging. Therefore, the following points are recommended for the stakeholders concerned about DRR at the policy making level.

- National policies need to carefully integrate the global policy documents (e.g. Sendai Framework, Sustainable Development Goals) to determine the objective, vision and mission.
- There should be an official focal point in the relevant ministries to provide climate change and disaster management related financial information.
- Disaster perspective plan for 2030 could be formulated in accordance with the global policy instruments and national development priorities. This will provide strategic guidance to address the upcoming challenges in DRR and safeguard the public investment for the same purpose.
- The projects should be designed following a standardized technique to objectively address the DRR components and increase the visibility of the embedded investments for DRR. In addition, project titles, wherever possible, should precisely reflect the DRR objectives as per Development Project Proforma (DPP).
- DRR/DP expenditures could be integrated into the existing classification of economic codes/sub-codes.
- At present the DPP includes the provision of Environmental Impact Assessment (EIA), which is not a comprehensive approach to assess hazard risk of development projects. Disaster Impact Assessment (DIA) should be added as an item in DPP of the DRR sensitive projects.
- The database of Programming Division, IMED and the Ministry of Finance could be interlinked to exchange digital data and information on development projects. A central database management system will help to preserve the clean data and remove the digital data extraction complexities.
- Sometimes the lag time¹ becomes a constraint, as it lessens the project efficiency. The time gap between the inception of a project and its implementation puts the relevance of some projects at risk. This gap should be reduced to ensure project efficiency.
- Smart indicators for monitoring and evaluation should be developed and applied to review the extent of DRR being addressed by a particular project.



Dissemination Seminar at Planning Commission. Photo: NARI

¹Difference between project approval date and actual start date

Table of Contents

List of Figures	xvii
List of Tables	xx
List of Acronyms	xi
Chapter-1: Introduction	1
1.1 Introduction	2
1.2 What is DRR	4
1.3 Scope and Objectives of the Study	6
Chapter-2: Methodology	8
2.1 Sixth Five Year Plan Review	9
2.2 Relevant Policy Analysis	9
2.3 Review of National Budget	10
2.4 Selection of Ministries	10
2.5 Selection of Projects	10
2.6 Key Informant Interview (KII)	11
2.7 Determination of Relative Weightage of the Projects	11
2.8 Budgetary Aanalysis	11
2.9 Case Study	11
2.10 Validation Workshop	12
2.11 Limitations	12
2.12 Challenges	12
Chapter-3: Legal and Institutional Framework for Disaster Management in Bangladesh: Developments during 6th FYP Period	13
3.1 Disaster Management Strategy in the 6th FYP	14
3.2 Perspective Plan (2010-2021)	14
3.3 National Plan for Disaster Management (2010-15)	14
3.4 The Comprehensive Disaster Management Programme (2010-2014)	15
3.5 Standing Orders on Disaster (2010)	15
3.6 Cyclone Shelter Construction, Maintenance and Management Policy (2011)	15
3.7 Disaster Management Act (2012)	15
3.8 Draft National Disaster Management Policy (2015)	16
3.9 The Sendai Framework for Disaster Risk Reduction:	16
3.10 Disaster Policy Trends during Sixth Five Year Plan	16

Chapter-4: Key Findings	17
4.1 Development Investment Portfolio During 6th FYP Period	18
4.2 Disaster Sensitive Investment in 6th FYP Period	22
4.2.1 Aggregate Data Analysis	22
4.2.2 Year-wise Trend in Allocation	30
4.3 Detailed Trend Analysis of Selected DRR Relevant Projects	33
4.3.1 Ministry of Local Government, Rural Development and Co-operatives	37
4.3.2 Ministry of Disaster Management and Relief (MoDMR)	41
4.3.3 The Ministry of Water Resources	45
4.3.4 Ministry of Housing and Public Works (MoHPW)	50
4.3.5 Ministry of Environment & Forest (MoEF)	55
4.3.6 Ministry of Agriculture (MoA)	59
4.4 Addressed Hazards	63
Chapter-5: Case Studies	67
5.1 Bank Protection of Ja.muneswary, Chickly and Charalkata River at Kishoregonj, Taragonj of Badargonj Upazila	68
5.2 Construction of Flood Shelters in the Flood-Prone and River Erosion Areas (Phase-2)	71
5.3 Climate Resilient Participatory Afforestation and Reforestation (CRPARP)	74
5.4 Emergency 2007 Cyclone & Restoration Project (ECRRP): Recovery of Agriculture Sector (Crops) and Improvement Programme.	79
5.5 Project Design Advance (PDA) for Coastal Town Improvement Project	82
5.6 Capacity Development on Natural Disaster Resilient Techniques of Construction and Retrofitting for Public Buildings	85
Chapter-6: Conclusions and Recommendations	87
Annex I: Aims and Objectives of MTBF	91
Annex II: List of Identified DRR sensitive 164 Projects	97
Annex III: Terminology	109
Annex IV: Questionnaire	112
References and Bibliography	115

List of Figures

Figure 1.1	Multi-hazard map of Bangladesh	3
Figure 1.2	Disaster management cycle	4
Figure 1.3	Components of disaster risk and its consequences	5
Figure 2.1	Activity Flow Chart of the Research	9
Figure 4.1	Trends in budgetary allocation during 6th FYP period (FY 2011- FY 2015)	18
Figure 4.2	Trend of development and non-development budget allocation during 6th FYP period	19
Figure 4.3	Budget allocation in different ADP sectors during 6th FYP period	20
Figure 4.4	Top 10 ministries/ divisions in terms of total ADP allocation during 6th FYP Period	21
Figure 4.5	Year-wise ADP allocation of top 10 ministries/ divisions during 6th FYP period	22
Figure 4.6	Sector-wise distribution of ADP allocation for the identified DRR sensitive projects during 6th FYP period	23
Figure 4.7	Budget trends of disaster relevant ministries/ divisions during 6th FYP period	24
Figure 4.8	Frequency of DRR sensitive projects in selected ministries during 6th FYP period (FY 2011- FY 2015)	25
Figure 4.9	Distribution of DRR sensitive projects of different ministries during 6th FYP period	26
Figure 4.10	Ministry-wise distribution of ADP allocation for the identified DRR sensitive projects and total ADP allocation for the selected ministries during 6th FYP period	27
Figure 4.11	Ministry-wise distribution of ADP allocation (DRR sensitive and Weighted DRR Sensitive) for the identified DRR sensitive projects during 6th FYP period	27
Figure 4.12	Ministry-wise ratio of financial contributions for the identified projects during 6th FYP period	29
Figure 4.13	Ministry-wise allocation of capital vs. revenue components percentages for the identified projects during 6th FYP Period	29
Figure 4.14	Year-wise distribution of financial contributions for the identified projects during 6th FYP period	30
Figure 4.15	Year-wise trends of GoB contributions and project aid for the identified projects during 6th FYP period	30
Figure 4.16	Year-wise trends of identified DRR sensitive projects for the selected ministries during 6th FYP Period (FY 2011- FY 2015)	31
Figure 4.17	Annual trend of overall allocation and expenditures as well as allocation and expenditures for the selected ministries during 6th FYP period (FY 2011 - FY 2015)	31
Figure 4.18	Spatial distribution of categorized DRR sensitive Projects during 6th FYP period	36
Figure 4.19	Allocation percentage for DRR relevant project categories within MoLGRDC during 6th FYP period	37
Figure 4.20	Allocation Percentage for DRR relevant project Categories within MoLGRDC during 6th FYP period	38
Figure 4.21	Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoLGRDC during 6th FYP period	38
Figure 4.22	Financial contributions to DRR sensitive ADP allocation for MoLGRDC during 6th FYP period	39

Figure 4.23	Revenue and capital components of DRR sensitive allocation for MoLGRDC during 6th FYP period	39
Figure 4.24	Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoLGRDC with a breakdown of resource allocation	40
Figure 4.25	Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoLGRDC during 6th FYP period	41
Figure 4.26	Categorization of DRR relevant project in MoDMR during 6th FYP period	42
Figure 4.27	Allocation percentage for DRR relevant project categories within MoDMR during 6th FYP period	42
Figure 4.28	Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoDMR during 6th FYP period	43
Figure 4.29	Financial contribution to DRR sensitive ADP allocation for MoDMR during 6th FYP period	43
Figure 4.30	Revenue and capital components of DRR sensitive allocation for MoDMR during 6th FYP period	44
Figure 4.31	Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoDMR with a breakdown of resource allocation	44
Figure 4.32	Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoDMR during 6th FYP period	45
Figure 4.33	Categorization of DRR relevant project in MoWR during 6th FYP period	45
Figure 4.34	Allocation percentage for DRR relevant project categories within MoWR during 6th FYP period	46
Figure 4.35	Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoWR during 6th FYP period	47
Figure 4.36	Financial contribution to DRR sensitive ADP allocation for MoWR during 6th FYP period	48
Figure 4.37	Revenue and capital components of DRR sensitive allocation for MoWR during 6th FYP period	49
Figure 4.38	Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoWR with a breakdown of resource allocation	49
Figure 4.39	Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoWR during 6th FYP period	50
Figure 4.40	Categorization of DRR relevant project in MoHPW during 6th FYP period	51
Figure 4.41	Allocation Percentage for DRR relevant project Categories within MoHPW during 6th FYP period	52
Figure 4.42	Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoHPW during 6th FYP period	52
Figure 4.43	Financial contribution to DRR sensitive ADP allocations for MoHPW during 6th FYP period	53
Figure 4.44	Revenue and capital components of DRR sensitive allocation for MoHPW during 6th FYP period	53

Figure 4.45	Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoHPW with a breakdown of resource allocation	54
Figure 4.46	Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoHPW during 6th FYP period	55
Figure 4.47	Categorization of DRR relevant projects in MoEF during 6th FYP period	56
Figure 4.48	Allocation percentage for DRR relevant project categories within MoEF during 6th FYP period	56
Figure 4.49	Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoEF during 6th FYP period	57
Figure 4.50	Financial contribution of DRR sensitive ADP Allocation for MoEF during 6th FYP period	57
Figure 4.51	Revenue and capital components of DRR-sensitive ADP allocation for MoEF during 6th FYP period	58
Figure 4.52	Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoEF with a breakdown of resource allocation	58
Figure 4.53	Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoEF during 6th FYP period	59
Figure 4.54	Categorization of DRR relevant projects in MoA during 6th FYP period	60
Figure 4.55	Allocation percentage for DRR relevant projects categories within MoA during 6th FYP period	60
Figure 4.56	Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoA during 6th FYP period	61
Figure 4.57	Financial contribution to DRR sensitive ADP allocations for MoA during 6th FYP period	61
Figure 4.58	Revenue and capital components of DRR sensitive ADP allocations for MoA during 6th FYP period	62
Figure 4.59	Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoA with a breakdown of resource allocation	62
Figure 4.60	Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoA during 6th FYP period	62
Figure 4.61	Number of Projects addressing specific hazards during the 6th FYP period	63
Figure 4.62	Percentage of Projects addressing specific hazards during the 6Fth YP period	64
Figure 4.63	Percentage of Projects addressing multiple hazards during the 6th FYP perio (FY 2011 – FY 2015)	64
Figure 4.64	Figure 4.64: Percentage of projects (in each of the identified ministries) addressing multiple hazards during the 6th FYP period (FY 2011 – FY 2015)	65
Figure 4.65	Annual ADP allocation trends for projects addressing multiple hazards during the 6th FYP period (FY 2011- FY 2015)	66

List of Tables

Table 4.1	Budget during 6th FYP period	18
Table 4.2	Development and Non-development Budget Allocation During 6th FYP Period	19
Table 4.3	Frequency of DRR sensitive projects during 6th FYP period (FY2011- FY2015) in selected ministries	25
Table 4.4	Allocation, source of finance & its components for the selected DRR sensitive projects (164 in Total) during 6th FYP Period (FY 2011- FY 2015)	28
Table 4.5	Annual trend of overall Allocation and Expenditures of individual (selected) ministries during 6th FYP Period (FY 2011- FY 2015)	32
Table 4.6	Frequency and categorization of DRR sensitive projects implemented during 6th FYP period (FY 2011- FY 2015) in selected ministries	34
Table 4.7	Weighted DRR-Sensitive Investments for the Identified DRR sensitive projects (164 in Total) during 6th FYP Period (FY 2011- FY 2015) and their equivalency to the percentage (shown in bracket) of the total initial DRR sensitive project Investments tabulated in Table 4.4	35
Table 4.8	Types of BWDB projects and their relevance to DRR	46
Table 4.9	Percentage of projects (for each ministry) addressing multiple hazards during the 6th FYP period (FY 2011 – FY 2015)	65
Table 5.1	Financial trend analysis of the project during 6th FYP period (financial figures in Lakh Taka)	70
Table 5.2	Financial Trend Analysis of the Project during 6th FYP period (Financial figures in Lakh Taka)	73
Table 5.3	List of plantations under CRPAR project during 6th FYP period	75
Table 5.4	Number of beneficiaries of the project	76
Table 5.5	Financial trend analysis of the project during 6th FYP period (financial figures in Lakh Taka)	78
Table 5.6	Financial trend analysis of the project during 6th FYP period (financial figures in Lakh Taka)	81
Table 5.7	Financial trend analysis of the project during 6th FYP period (financial figures in Lakh Taka)	84

List of Acronyms

6th FYP	:	Sixth Five Year Plan
ADP	:	Annual Development Programme
ADPC	:	Asian Disaster Preparedness Center
AF	:	Arannayk Foundation
AIS	:	Agricultural Information Services
BADC	:	Bangladesh Agricultural Development Corporation
BARC	:	Bangladesh Agricultural Research Council
BARI	:	Bangladesh Agricultural Research Institute
BCAS	:	Bangladesh Centre for Advance Studies
BCCSAP	:	Bangladesh Climate Change Strategy and Action Plan
Taka	:	Bangladeshi Taka
BFD	:	Bangladesh Forest Department
BINA	:	Bangladesh Institute of Nuclear Agriculture
BIRTAN	:	Bangladesh Institute of Research and Training on Applied Nutrition
BJRI	:	Bangladesh Jute Research Institute
BMDA	:	BARIND Multi Purpose Development Authority
BRRI	:	Bangladesh Rice Research Institute
BSRI	:	Bangladesh Sugarcrop Research Institute
BUET	:	Bangladesh University of Engineering and Technology
BWDB	:	Bangladesh Water Development Board
CDB	:	Cotton Development Board
CDMP	:	Comprehensive Disaster Management Programme
CEGIS	:	Center for Environmental and Geographic Information Services
CPP	:	Cyclone Preparedness Programme
CRPARP	:	Climate Resilient Participatory Afforestation and Reforestation
CSO	:	Civil Society Organization
DAE	:	Department of Agricultural Extension
DoE	:	Department of Environment
DAM	:	Department of Agricultural Marketing
DIA	:	Disaster Impact Assessment
DM	:	Disaster Management
DMA	:	The Disaster Management Act
DMRD	:	Disaster Management & Relief Division
DP	:	Disaster Preparedness
DPP	:	Development Project Proforma
DRP	:	Disaster Risk Preparedness
DRR	:	Disaster Risk Reduction
ECNEC	:	Executive Committee of the National Economic Council
ECRRP	:	Emergency 2007 Cyclone Recovery and Restoration Project
EIA	:	Environmental Impact Assessment
FY	:	Fiscal Year

FYP	:	Five Year Plan
GDP	:	Gross Domestic Product
GED	:	General Economics Division
GoB	:	Government of Bangladesh
HBRI	:	House Building and Research Institute
HFA	:	Hyogo Framework for Actions
IAP	:	Indoor Air Pollution
IWM	:	The Institute of Water Modelling
KII	:	Key Informant Interview
LGD	:	Local Government Division
MDG	:	Millennium Development Goals
MoA	:	Ministry of Agriculture
MoDMR	:	Ministry of Disaster Management and Relief
MoEF	:	Ministry of Environment & Forest
MoF	:	Ministry of Finance
MoHPW	:	Ministry of Housing and Public Works
MoLGRDC	:	Ministry of Local Government, Rural Development and Co-operatives
MoWR	:	Ministry of Water Resources
MTBF	:	Medium-Term Budgetary Framework
NARRI	:	National Alliance for Risk Reduction and Response Initiative
NEC	:	National Economic Council
NGO	:	Non-Government Organization
NPDM	:	National Plan for Disaster Management
NSDS	:	National Sustainable Development Strategy
PDA	:	Project Design Advance
PWD	:	Public Works Department
RADP	:	Revised Annual Development Programme
RAJUK	:	Rajdhani Unnayan Kartripakkha
RDCD	:	Rural Development and Co-operatives Division
SCA	:	Seed Certification Agency
SDG	:	Sustainable Development Goals
SFDRR	:	Sendai Framework for Disaster Risk Reduction
SOD	:	Standing Orders on Disaster
SRDI	:	Soil Resource Development Institute
TAC	:	Technical Advisory Committee
UDD	:	Urban Development Directorate
UNDP	:	The United Nations Development Programme
UNISDR	:	The United Nations Office for Disaster Risk Reduction
US\$:	United States Dollar
WARPO	:	Water Resources Planning Organization

Chapter 1

Introduction

1.1 Introduction

Bangladesh, because of its geo-physical location, topography and high population density, is at risk from recurring natural and human induced hazards where an average 10 million people are affected every year (6th FYP, 2011-2015). Frequent floods, cyclones, river bank erosion, waterlogging, drought and tornadoes significantly disrupt Bangladesh's economy, the lives and livelihoods of its population. Bangladesh is one of the 10 most disaster-prone countries. . According to UNDP, between 1980 and 2008, Bangladesh experienced 219 natural disasters, causing over US\$16 billion of damage (UNDP, 2016¹). UNISDR calculations revealed that 14 percent of national GDP is vulnerable to disasters every year. Estimates by Ministry of Finance also showed that, government suffered losses of US\$2189 million due to natural disasters during 1990-2008 (Nahar & Sajjad, 2013).

Many of such hazard-related losses might be attributed to climate induced events. Recent analyses suggest that such losses and damages will most likely be exacerbated under climate change (MOEF, 2012). Climate change is adding a new dimension to the current risk environment with global predictions suggesting that the country could expect more intense cyclones, storm surge and flooding and that a rise in sea levels could have a significant impact on the lives and livelihoods of up to 30 million people. Adverse impacts of climate change are likely to wipe out economic progress made through development programs and projects. Based on global level estimation of damages due to climate change induced hazards and disasters, it has been inferred that the corresponding cost for Bangladesh may potentially be in the order of US\$4 to 14 billion per annum (Haque, 2009). This however is subject to several caveats on greenhouse gas emission scenarios, the lack of complete knowledge on the feedback of the land-ocean-atmosphere system to climate forcings. Compared to current level of investments in development by means of Annual Development Programme (ADP), such cost appears equivalent to at least 40% per annum.

Government of Bangladesh (GoB) has been involved in disaster management related activities since its independence by initiating Cyclone Preparedness Program (CPP) in 1973. Because of a large, densely settled population, low income and widespread poverty, the impacts of disasters have been the focus of considerable international attention (World Bank, 2002). As a result, international development organizations and NGOs started their operations jointly with the government very shortly after independence. Over this long period, there have been changes in approaches of disaster management as the previous attention to recovery & relief has been replaced by greater emphasis on preparedness and mitigation activities. Despite our ongoing efforts it seems there is still a long way to go in disaster management for Bangladesh. The threats arising from disasters remain high due to an unstable Bangladesh economy and the society. Alam (2013) writes, "Development of Bangladesh could be slowed down due to frequent disasters resulting in large economic losses, reduced economic growth and little progress in poverty reduction." Vulnerability of lives and assets to disaster requires strategic formulation and implementation of government policies and programs for Disaster Risk Reduction (DRR) and Disaster Preparedness (DP).

Hazards and climate change are likely to affect overall functioning of many of these projects. If planned well, both adaptation and mitigation co-benefits may also be accrued from many of these development projects. Integration of adaptation as well as mitigation into project design is therefore extremely critical towards enhancing project functioning or safeguarding development investments. GoB executes development activities by formulating the Annual Development Programme (ADP) every year where allocation is provided for a number of development projects. On an average, about 900-1,000 projects are proposed per annum under ADP and are implemented after approval of ECNEC and concerned authorities/ministries. In general, the Ministry of Planning approves development projects under ADP, categorized under 17 different sectors (Haque, 2009): (i) agriculture, (ii) rural development & institutions,

¹http://www.undp.org/content/undp/en/home/ourwork/crisispreventionandrecovery/projects_initiatives/Bangladesh-drr-casestudy-transformational-change.html



Multi-Hazard Map Bangladesh

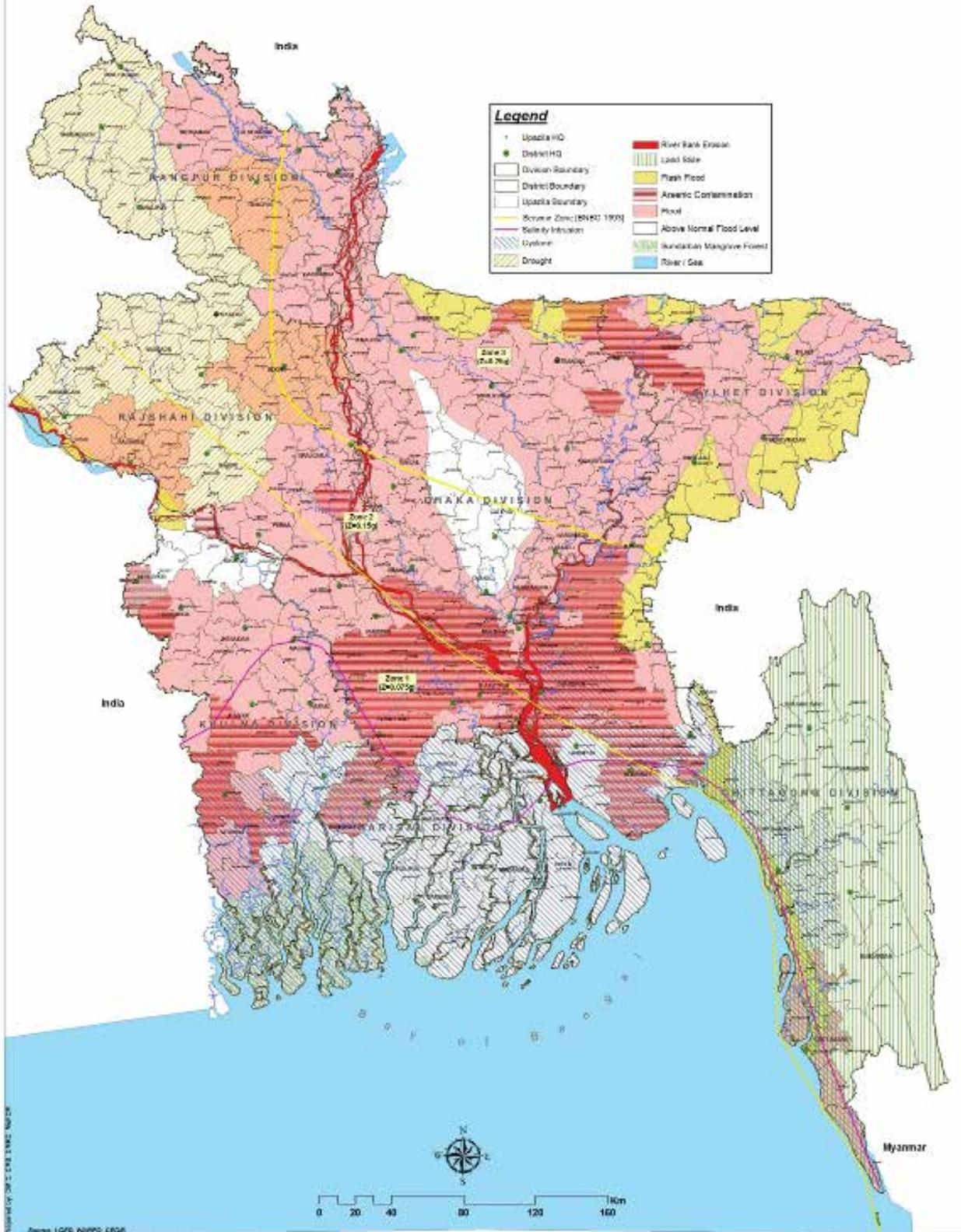


Figure 1.1 : Multi-hazard map of Bangladesh (Source: CDMP-II)¹

¹Collected From CDMP-II website: <http://www.cdmp.org.bd>

(iii) water resources, (iv) industries, (v) power, (vi) oil, gas and natural resources, (vii) transport, (viii) communication, (ix) physical planning, water supply and housing, (x) education and religious affairs, (xi) sports and culture, (xii) health, population and family welfare, (xiii) mass media, (xiv) social welfare, women affairs and youth development, (xv) public administration, (xvi) science and technology research, (xvii) labor and employment, and (xviii) block allocation.

In the study conducted by Haque (2009), an effort was made to analyze a total of 1,901 projects under ADP for fiscal years 2004-05 and 2008-09. Disaster adaptation and mitigation possibilities were found in about 41% and 6% projects, respectively. It was found that the most promising sectors where hazard and climate change adaptation appeared feasible, are water resources, agriculture, rural development and institutions, physical planning, water supply and housing, and transport. Out of an overall minuscule opportunity for mitigation projects, the maximum opportunity lied in power sector, followed by industries and agriculture sectors. It is inferred that an additional 10-30% fund may be needed to retain the current level of benefits of the projects. In other words, if such measures are not considered, an overwhelming proportion of annual development investment might not accrue desirable outcomes in future under climate change.

Therefore, disaster management has assumed an important role for the government and the people. The GoB has set the Disaster Management Vision as “to reduce the risk of people, especially the poor and the disadvantaged, from the effects of natural, environmental and human induced hazards, to a manageable and acceptable humanitarian level, and to have in place an efficient emergency response system capable of handling large scale disasters” in the Sixth Five Year Plan (GED, 2011).

1.2 What is DRR

Disaster Risk Reduction (DRR) is one of the highly referred jargons in the contemporary development discourse. Due to the global context of climate change induced hazards and the risk exposed by the unsustainable practices of human being, DRR has been a common focus in the media as well as the

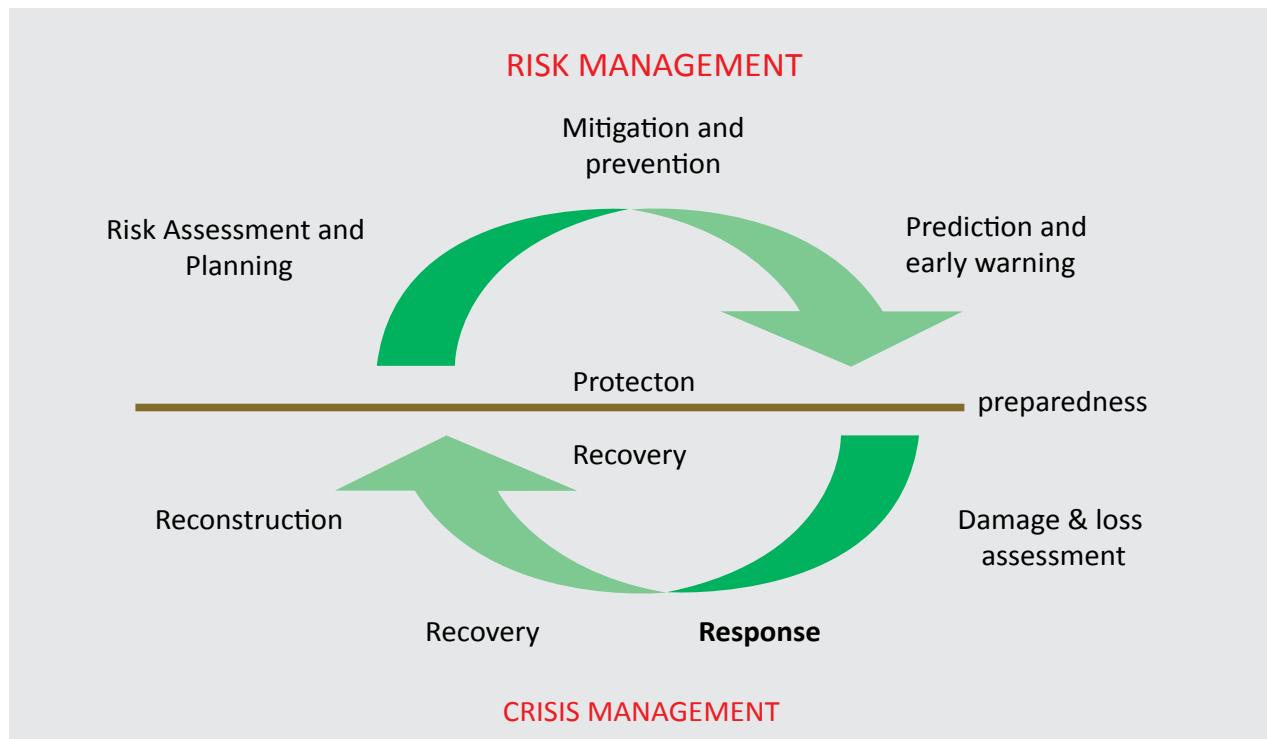


Figure 1.2: Disaster management cycle

academia. The original usage and the meaning of DRR have lost its control in face of the popular meaning. Therefore, defining the concept of DRR appears as something like defining the color of water. The commonly cited reference for ideal definition of the concept of DRR is the UNISDR documents, particularly “UNISDR Terminology on Disaster Risk Reduction (2009)” worth mention.

In 1990s, the modern concept of DRR was first developed through the declaration of “International decade of disaster risk reduction”. In 1995 the “Yokohama Strategy and Plan of Action for a Safer World: guidelines for natural disaster prevention, preparedness and mitigation” gave a conceptual knowledge and framework for DRR. After that, “The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (HFA)” and the “Sendai Framework for Disaster Risk Reduction” of 2015 have been the contemporary global policy papers that define and clarify the arena of the concept of DRR.

UNISDR (2009) defines disaster risk reduction as “the concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events”. The definition of UNISDR is holistic and it has been adopted in the 6th Five Year Plan (FYP). It focuses on the activities of reducing exposure, reducing vulnerability and improving preparedness. All these activities are implemented in the pre-disaster activities of mitigation, prevention and preparedness.

This disaster management cycle as depicted in figure 1.1 is used extensively in the works of academia as well as the government, NGOs and other organizations. DRR aims at tackling the fundamental elements of disaster risk: vulnerability, hazards (or shocks) and exposure. Reducing disaster risk is not just about additional investments – it is also about ensuring that development interventions are sound. Ensuring appropriate construction of critical infrastructure in highly vulnerable areas is a reference in this point.

The following figure shows the components of disaster risk and its consequences. Disaster risk is determined by the occurrence of a natural hazard, which may impact exposed populations and assets. Vulnerability is the characteristics of the population or asset making it particularly susceptible to damaging effects. Poorly planned development, poverty, environmental degradation and climate change are drivers that can increase the magnitude of this interaction, leading to larger disasters.

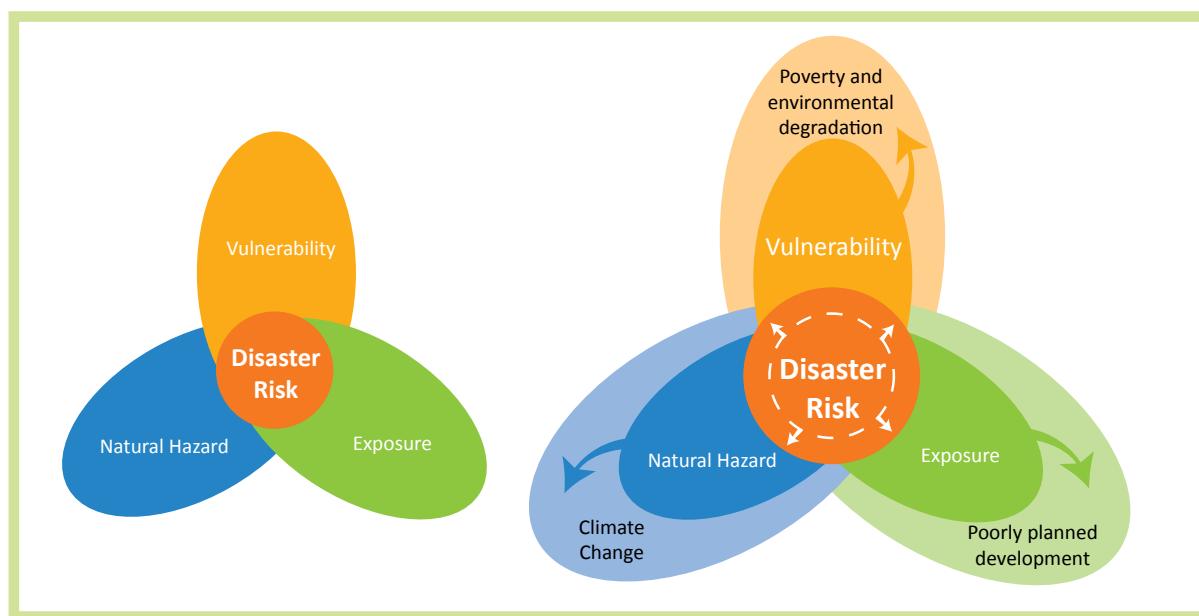


Figure 1.3: Components of disaster risk and its consequences (Source: IPCC, 2012)

Based on the review of existing literature, we could enlist the following activities under the umbrella of Disaster Risk Reduction (DRR).

1. Preparedness, effective response and sustainable recovery
2. Risk sharing and risk transfer
3. Building resilience, promotion of innovation, knowledge and education
4. Technical and physical risk mitigation
5. Risk identification, monitoring, early warning and public awareness
6. Sustainable institutional structures and good governance

1.3 Scope and Objectives of the Study

The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030 has set out four priorities of actions for the development of safe and resilient communities around the world. Second and third priorities of the framework are, respectively, strengthening disaster risk governance to manage disaster risk and investing in disaster risk reduction for resilience. To accomplish these priorities, objectives have been set “to mainstream and integrate disaster risk reduction within and across all sectors, review and promote the coherence and further development, as appropriate, of national and local frameworks of laws, regulations and public policies”. Moreover, during the third World Conference on Disaster Risk Reduction (WCDRR)-2015, “States also reiterated their commitment to address disaster risk reduction and the building of resilience to disasters with a renewed sense of urgency within the context of sustainable development and poverty eradication, and to integrate, as appropriate, both disaster risk reduction and the development of resilience into policies, plans, programs and budgets at all levels”. This renewed sense of urgency on the issues related to disaster risk reduction and the development of resilience among the communities at risk has prompted the GoB to formulate and execute national policies that aim to achieve the targets of disaster risk reduction, resilience and sustainable development as enshrined in the global guidelines.

Against this background, it is imperative that the “resilience nexus”, i.e. the intersections and meeting point of poverty, environment, disaster and climate change, is adequately addressed through the mainstreaming of the poverty, environment, disaster and climate change in the development project planning. This is the only way the development programmes and projects and the associated allocation of resources in the national budget will be predictable. Furthermore, the accountable development project activities will bring about results at national and local levels.

To this end, the mainstreaming of the resilience nexus in the development project planning requires a regulatory framework that set the parameters for and assures the systemic compliance to the purpose of the resilience nexus mainstreaming. As per the government decision, the Development Project Pro-forma (DPP) has been recently revised¹ to ensure that each and every development project adequately takes on board the resilience nexus. A set of indicators and protocols has been developed for this purpose. Now there is a scope of incorporating the directives and promises of SFDRR, SDG and other global policy instruments as well as the 7th Five Year Plan.

The other prerequisite of a successful mainstreaming of the resilience nexus is the availability of skilled planning professionals in the national development planning process. Admittedly, increased capabilities and establishment of mechanisms at the Ministry of Planning and Planning commission as well as the planning wings of line ministries are prerequisites to integrate the resilience nexus into the planning of development projects. This would require the inclusion of DRR & DP in the core process to make it risk informed. The urgency in Bangladesh at this particular development juncture requires synergy of DRR &

¹www.plancomm.gov.bd/publications

DP investment with regular development programme to ensure sustainability and value for money in development project planning as well as in the regular revenue funded development activities from macro to micro level.

The Vision 2021 and the associated Perspective Plan (2010-2021) have set solid development targets for Bangladesh by the end of 2021. Two Five Year Plans (FYP), namely: 6th FYP (2011-2015) and 7th FYP (2016-2020) have been formulated to implement the goals of Perspective Plan. For the first time, Poverty-Environment-Climate-Disaster nexus has been mainstreamed in the national planning process and as a result disaster management has been integrated in the 6th FYP. This plan has given strategic and inclusive guidelines for disaster management in Bangladesh.



MoU Signing Ceremony at the office of Secretary, Planning Commission. Photo: NARRI

The present study, henceforth, aims to evaluate the public fund allocation for DRR & DP during the Sixth Five Year (2011-2015) plan period in Bangladesh. Although the private sector investment for DRR & DP consists of a large share of total investment in the disaster management of Bangladesh, the concern of this study has been to exhaustively focus on the analysis of the development activities of the GoB. The government expenditure is mainly distributed over two key components: development and non-development. The non-development expenditure is also referred to the revenue expenditure which mainly consists of the remuneration of the public servants and other officials. This expenditure, however, does not generate further resource from the allocated amount. Therefore it appears to demonstrate very little influence on improving DRR & DP in a larger scale. Development expenditure has far reaching influence over the investments and growth of the economy. The current study has kept out the non-development expenditure of GoB and the private investment for DRR & DP in Bangladesh from its scope.

Overall objective of the study is to find out the gaps in ADP allocation against the targets for disaster risk reduction and disaster preparedness in the national development plan-6th FYP and scope of integration of DRR & DRP in Development Project Pro-forma (DPP) and development planning and budgeting guidelines. National Alliance for Risk Reduction and Response Initiatives (NARRI) has facilitated the whole study including costs, while Programming Division of Planning Commission provided technical guidance and support through the Technical Advisory Committee (TAC).

Chapter 2

Methodology

A well-developed methodology helps to delimit the area of any research and keep it on the right track. Trend analysis of disaster related development expenditure covers a wide horizon of activities that requires tailoring for fitting into a conceivable and pragmatic shape. This research has been conducted in several stages. Most of the primary level activities dealt with literature review and data analysis on secondary sources which was followed by field interviews and another series of data analysis on primary sources. Following flow chart depicts the stages throughout the whole time period of the research.

Review of 6th FYP

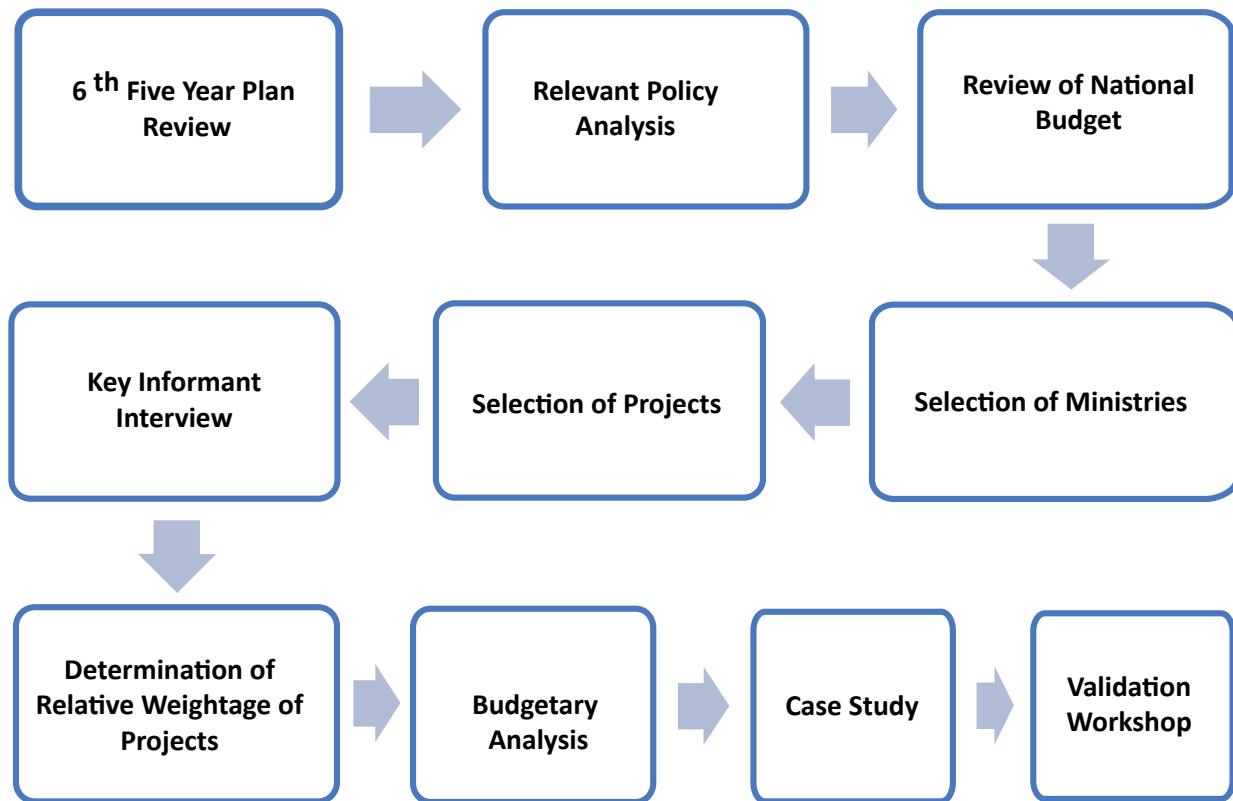


Figure 2.1: Activity flow chart of the research

2.1 Sixth Five Year Plan Review

The research started with the analysis of 6th Five Year Plan of the Government of Bangladesh. The Five Year Plan is the major development plan of the government that dictates the formulation of development programmes every year. Bangladesh was shaken by the cyclone Sidr and Aila in 2007 and 2009, respectively. The climate change talks in Copenhagen in 2009, imminent deadline for the implementation of Kyoto Protocol as well as concurrent environmental issues during the years, had put forward the issue of natural hazards and sustainable development as the focal point of development debate in Bangladesh. To face such challenges in a period of economic take off, Bangladesh government formulated its 6th Five Year Plan (2011-2015). 6th FYP provided directions for investments to make the optimum outcome for achieving sustainable development through the ADP. The initial stage of this research focused on a thorough analysis of the 6th FYP (2011-2015) and the priorities it dictated with regard to disaster related issues.

2.2 Relevant Policy Analysis

After the investment priorities of 6th FYP (2011-2015) and the nuts and bolts with regards to disaster management have been identified and scrutinized, the research team moved on to analyze disaster related public policies during as well as before the 6th FYP (2011-2015) period.

The FYP was not any isolated document as Bangladesh was already within the track to achieve Millennium Development Goals (MDG) targets. The GoB had also started formulating the country status report on the implementation of Hyogo Framework of Action (HFA) since 2007. MDG and HFA had linear relationship with disaster management and sustainable development of Bangladesh. 6th FYP was a development in the continuum and any analysis of the plan needs to focus on its tail to understand the significance of the activities prioritized in the plan.

Therefore, several documents such as, National Plan for Disaster Management (2010-2015), Sendai Framework for Disaster Risk Reduction (2015), Comprehensive Disaster Management Programme (2010-2014), Cyclone Shelter Construction, Maintenance and Management Policy (2011), Disaster Management Act of Bangladesh (2012), Standing Orders on Disasters (SoD, 1997) were studied. These documents provided directions for public investment for Disaster Risk Reduction. Before starting the trend analysis of budgetary allocation, it was important to know the directions stated in the public policies to support the public investment for DRR. After the analysis of the relevant policies had been finished, the research team moved towards the analysis of development expenditure in the national budget.

2.3 Review of National Budget

Every year, the GoB formulates a budget to maintain the balance of income and expenditure of the government. Budgetary expenditures could be grossly categorized into two areas: Development and Non Development. The research team analyzed the budgetary allocations of government during the 6th FYP period. It covered the budgets from the fiscal year 2010-11 to 2014-15. This general analysis of national budget helped to develop a clear idea of the overall economic conditions during the period. Some patterns in the revised budget allocation for development as well as non-development sector became apparent after this analysis. Reviewing the Revised Annual Development Programmes (RADP) gave indications of the priority areas of public investment and the place of disaster management within the overall allocation.

2.4 Selection of Ministries

There were a total number of 39 Ministries/Divisions whose projects were included in the ADPs. During these five successive years, GoB has, grosso modo, implemented 2125 development projects through these 39 Ministries/Divisions. While looking at the activities of these Ministries/Divisions as mandated by the Rules of Business (Revised up to December, 2014) and Allocation of Business it appeared that there are six Ministries of the GoB who undertake projects for disaster risk reduction and disaster preparedness. The six Ministries are the followings:

- Ministry of Agriculture
- Ministry of Environment and Forests
- Ministry of Local Government, Rural Development and Co-operatives
- Ministry of Housing and Public Works
- Ministry of Disaster Management and Relief
- Ministry of Water Resources

These six Ministries implemented a total number of 699 projects during the 6th FYP period in Bangladesh.

2.5 Selection of Projects

Afterwards, the research team started analyzing the projects of the six Ministries. The absence of standard criteria for DRR related project selection was dealt with pursuing the UNISDR terminology of DRR and other relevant concepts. After the concept of DRR & DP had been operationalized, a manual searching of the development projects of these identified Ministries during the 6th FYP (2011-2015) was started.

¹<http://www.plancomm.gov.bd/mdg-report-final-layout-07-11-2016/>

²http://cabinet.portal.gov.bd/sites/default/files/files/cabinet.portal.gov.bd/legislative_information/13237291_40e2_4538_84ab_37ec65fe11ea/Allocation%20of%20Business%20R-20140001.pdf

The project selection was made on the basis of three activities, namely title analysis, DPP analysis and expert opinion. Firstly, the relevance of the projects was being scrutinized based upon their title. If the title did not provide any clear idea about the activities of the projects, the DPP, where available, was studied to check the relevance. For some of the completed projects the DPP was not available. In such cases expert opinion of the TAC was used for the selection of projects for the study purpose. The relevance criteria are to some extent subjective which was influenced by the wisdom and experience of the people involved during the whole research period. Through this mechanism of project selection the research team found that 164 projects were relevant for the study purpose.

2.6 Key Informant Interview (KII)

Although some projects were selected, questions remained among the researchers regarding the relevance of projects with the research objectives. Chakrabarti and Prabodh (2012)¹, in his analysis of the disaster related budgetary allocation in India, showed that most of the disaster related expenditures are embedded or hidden in non-disaster related projects. Therefore, only searching from the deliberate expenditures on disaster risk reduction will not be enough as the hidden investment remains huge. The research team carried out KII with Ministry officials and disaster management experts of Bangladesh. The list of the selected 164 projects was counter checked through the interviewing process of the corresponding Ministry officials in order to ensure that only relevant projects get selected.

2.7 Determination of Relative Weightage of the Projects

During the interviewing, the Ministry officials were asked to rate the selected projects into three categories: high, medium and low, according to the relevance of the selected projects with DRR. In addition, they also provided the information regarding how much of the expenditure of a particular project is related to DRR. For example, some of the projects had 100% expenditure for DRR, while some projects spent 10% of the total allocation for DRR. The research team collected this information by conducting intensive interviews with the Ministry officials. In addition to the quantitative information, the officials were also asked about the problems and challenges in the disaster related project implementation in Bangladesh. Activities during this phase were almost new and challenging as no such weightage assigning on DRR projects had been done previously. Therefore, it was important to interview people who had vast experience and wisdom regarding the projects of a particular Ministry.

2.8 Budgetary Analysis

After the weightage had been assigned to all of the selected projects, the research team carried out trend analysis of disaster related development allocations as given in the ADPs. The analysis focused on several aspects of the projects, such as the nature of the projects, implementing agencies, sector-wise expenditure, inter-sectoral comparison, benefits of the projects, contribution of project aid and challenges in implementation. Finally suggestions were made for future projects.

2.9 Case Study

Small scale case studies were conducted on six selected projects out of total 164 projects on DRR during 6th FYP (2011-2015) period. It helped to verify the findings from budgetary analysis and interviews. ADP data does not always reflect the reality on the ground. Local perceptions and opinions with regard to the DRR activities of government need to be explored to develop a critical assessment of the ADP and integrate the opinions of the community in the development projects. The cases were purposefully selected from all the selected Ministries with the DRR projects.

¹Chakrabarti D. & Prabodh G. 2012. Understanding Existing Methodologies for Allocating and Tracking Disaster Risk Reduction (DRR) Resources in India. Commissioned by UNISDR in collaboration with ADPC under the IAP project —Regional Stocktaking and Mapping of Disaster Risk Reduction Interventions for Asia and the Pacific.

2.10 Validation Workshop

Six validation workshops were held with Technical Advisory Committee (TAC) regarding the activities and findings from the research. TAC had provided guidelines and suggestions from the beginning of the research. TAC opinions were very much important in developing the framework of the research, removing bias of the data and making the findings much more justified.

2.11 Limitations

The findings of this research are not without limitations. Time and resource constraints, unavailability of required data and data extraction complexities were among the major setbacks for in-depth analysis. The research had to depend on the secondary information provided by interviewed Ministry officials for relevance criteria determination. Besides, several FGDs and KIIs were conducted during the fieldwork. As a result some of the findings of the research are subjective in nature.

2.12 Challenges

As mentioned above, the study team identified 164 projects that met the study objectives. Within the short period of time, the printed copies of all the DPPs could not be collected and it was found that there was an absence of a depository system for the DPPs in the Ministries. Besides, the study team could not interview a sufficient number of officials at the department level to derive further information for in-depth analysis. As the focus of the study was upon the trend of ADP allocations, the project-wise data was mainly derived from the ADP books formulated by Planning Commission. Due to time limitation, the expenditure data of IMED could not be used. Also the study could get a more holistic picture of the trend of public fund allocation had this mentioned data been integrated in the analysis. The need for a central database on government development activities was deeply felt.



Technical Advisory Committee (TAC) Meeting. Photo: NARRI

Chapter 3

**Legal and Institutional
Framework for
Disaster Management
in Bangladesh:
Developments
during 6th FYP Period**

The long term vision of Bangladesh Government for Disaster Management is to reduce the vulnerability of people, especially the poor, to natural, environmental and manmade disasters, to a tolerable and humanly reasonable level. In order to make disaster management system operative in an effective and efficient manner, the Government of Bangladesh has formulated several policy instruments and integrated them with national development policies.

Article 15 of the Constitution of the People's Republic of Bangladesh requires that the country should follow the path of a planned economic growth for realizing its development objectives. Accordingly, between FY 1973 and FY 2002 Bangladesh implemented five successive Five Year Plans (FYPs) and an interim Two Year Plan (1979–80). Between 2002 and 2008, however, the country discontinued the FYPs, instead opting for two three-year Poverty Reduction Strategy Papers (PRSP). Later in 2009, the National Economic Council (NEC) chaired by Honorable Prime Minister reverted to the five - years planning system by preparing 6th FYP for the period of 2010-11 to 2014-15. In accordance with this decision, the General Economics Division (GED) of the Planning Commission, which is mandated to prepare the country's national development plans, taking inputs from different stakeholders prepared the 6th FYP, which was approved by the NEC on 22nd June 2011. The priorities of the National Plan for Disaster Management (NPDM) 2010-2015 endorsed by the National Disaster Management Council in 2010 have been embedded in all the government high level policy and operation documents. The current government's 'Vision 2021' sets 'Effective Disaster Management' as one of the sub-goals and puts emphasis on seasonal flood and drought mitigation, establishing an effective early warning and evacuation mechanism, and development of a natural disaster insurance scheme to compensate the physical and property damage. The Bangladesh Perspective Plan 2010-2021, Sixth Five Year Plan 2011-2015 and National Sustainable Development Strategy (NSDS) have provisions and emphasis to implement NPDM.

3.1 Disaster Management Strategy in the 6th FYP

The 6th FYP has carried forward the implementation of the approved National Disaster Management Plan 2010 - 2015. It continued the comprehensive all-hazard, all-risk and all-sector approach and built on the foundations laid in the last several years and took lessons from the positive experiences. The Bangladesh Disaster Management Model, which made the basis for revising the disaster management policy and planning documents, is mainly comprised of two inter-related elements: Disaster Risk Reduction and Emergency Response. The plan focused more on Disaster Risk Reduction (DRR) in order to reduce the relief and recovery needs as well as to remain prepared to deal with any emergencies.

3.2 Perspective Plan (2010 - 2021)

The Government of Bangladesh (GoB) formulated the Perspective Plan of Bangladesh with the aim of achieving 'Vision 2021'. The document starts with the quote "a nation without a vision is a nation gone astray." Perspective plan outlines the targets of government in multiple sectors to make the vision 2021 a reality. The growth centered approach of development completely neglected the issue of environmental protection and sustainability. Bangladesh is on the track to take off towards a self-sustaining economic growth, which, however, should be based on sustainable development activities. According to the perspective plan, the major DRR activities of Bangladesh should focus on utilization of the available land, conservation and enhancement of the country's biodiversity, improved navigability and water discharge to reduce flood risks, afforestation in coastal areas, policy of crop diversification, integrated coastal zone management etc. It has also been mentioned that, "In adaptation activities both structural and non-structural measures, as appropriate, will be undertaken to protect the people and equip them at the same time to respond better."

3.3 National Plan for Disaster Management (2010 - 15)

According to the National Plan for Disaster Management 2010 - 15, the vision of the government was to reduce the risk of people, especially the poor and the disadvantaged, from the effects of natural,

environmental and human induced hazards, to a manageable and acceptable humanitarian level, and to have in place an efficient emergency response system capable of handling large scale disasters. The Plan envisaged a group of broad-based strategies:

1. Disaster management would involve the management of both risks and consequences of disasters that would include prevention, emergency response and post-disaster recovery.
2. Community involvement for preparedness programmes for protecting lives and properties would be a major focus. Involvement of local government bodies would be an essential part of the strategy. Self-reliance should be the key for preparedness, response and recovery.
3. Non-structural mitigation measures such as community disaster preparedness training advocacy and public awareness must be given a high priority. This would require an integration of structural mitigation with non-structural measures.

3.4 The Comprehensive Disaster Management Programme (2010 - 2014)

The Comprehensive Disaster Management Programme (CDMP) is a product of this change in approach. It has two goals: to facilitate a paradigm shift in disaster management in Bangladesh away from relief and rehabilitation towards risk reduction, and to foster a holistic, multi-hazard approach to reducing the nation's risks and vulnerabilities to human-induced and natural hazards.

CDMP II (2010 - 2014) was a vertical and horizontal expansion of its Phase I activities designed based on the achievements, lessons learned and the strong foundation laid during CDMP I by continuing the processes initiated, deriving actions from the lessons learned, utilizing knowledge resources generated and knowledge products published. The approach of CDMP II was to channel support through government and development partners, civil society and NGOs into a people-oriented disaster management and risk reduction partnership.

CDMP II offered an outstanding opportunity to improve linkages with, and synergies between, disaster risk reduction and adaptation to climate change. This was applied both at the community and at the general stakeholder level.

3.5 Standing Orders on Disaster (2010)

The Standing Orders on Disaster (SOD) was first issued in 1997. However, successive governments did not take any action in this regard and the SOD continued as merely a government approved policy document. When the present government first came to power, several measures were taken on SOD and the draft SOD was approved in 2010. The SOD has been revised with the avowed objective of making the concerned persons understand and perform their duties and responsibilities regarding disaster management at all levels. This provides a detailed institutional framework for disaster risk reduction and emergency management. It outlines detailed roles and the responsibilities of ministries, divisions, departments, various committees at different levels, and other organisations involved in disaster risk reduction and emergency management.

3.6 Cyclone Shelter Construction, Maintenance and Management Policy (2011)

The Cyclone Shelter Construction, Maintenance and Management Policy 2011 was formulated by the Disaster Management & Relief Division (DMRD) to ensure proper use of the multi-purpose cyclone shelters that have already been constructed, are under construction and are to be constructed in the coastal areas.

3.7 Disaster Management Act (2012)

The Disaster Management Act (DMA) 2012 was approved by the Parliament on September 2012 after a long collective effort by the government, development partners and civil society actors to create a legislative tool under which disaster and emergency management will be undertaken.

It has placed mandatory obligations and responsibilities on ministries and committees, and ensures transparency and accountability in the overall disaster management system.

The objectives of the DMA Act are substantial reduction of the overall risks of disasters to an acceptable level with appropriate risk reduction interventions; effective implementation of post disaster emergency response; rehabilitation and recovery measures; provision of emergency humanitarian assistance to the most vulnerable community people; strengthening of institutional capacity for effective coordination of disaster management involving government and non-government organisations and establishing a disaster management system capable of dealing with all hazards for the country.

3.8 National Disaster Management Policy (2015)

The National Disaster Management Policy provides that the Disaster Management Vision of the Government of Bangladesh is to reduce the risk of people, especially the poor and the disadvantaged, from the effects of natural, environmental and human induced hazards, to a manageable and acceptable humanitarian level, and to have in place an efficient emergency response system capable of handling large scale disasters. The mission is to bring a paradigm shift in disaster management from conventional response and relief practice to a more comprehensive risk reduction culture. The Overall objective is to strengthen the capacity of the disaster management system of Bangladesh to reduce unacceptable risk and improve response and recovery management at all levels.

The national policy instruments of GoB for disaster management during the 6th FYP period were heavily influenced by the Sendai Framework which was declared in 2015. It was, however, a preplanned activity and the decision of the Sendai meeting of the world communities was taken in 2005.

3.9 The Sendai Framework for Disaster Risk Reduction

The United Nations Office for Disaster Risk Reduction (UNISDR) organized the World Conference on Disaster Risk Reduction in Sendai, Japan on 14-18 March, 2015. Through a marathon round of negotiations, representatives from 187 countries adopted the Sendai Framework as the first major agreement on the post 2015 development agenda on Disaster Risk Reduction for 2015-2030.

3.10 Disaster Policy Trends during Sixth Five Year Plan

The common trends of the analyzed policies are:

- ✓ The policies aimed to articulate the long-term strategic focus of disaster management in Bangladesh.
- ✓ The policies demonstrate a commitment to address key issues: risk reduction, capacity building, information management, climate change adaptation, livelihood security, issues of gender and the socially disadvantaged etc.
- ✓ These key policies show the relationship between the government vision, key result areas, goals and strategies, and national drivers for change.
- ✓ In detail, the policies show us a road map for the development of disaster management plans by various entities.
- ✓ The policies illustrate the relationship among ministries, NGOs, civil society and the private sector regarding how their work can contribute to the achievements of the strategic goals and government vision on disaster management.
- ✓ The policies provide a framework regarding the performance and success in achieving goals and strategies.

Chapter 4

Key Findings

4.1 Development Investment Portfolio During 6th FYP Period

After its independence, Bangladesh has seen major progress with a strong flexible economy and has become much more resilient to handle disasters with minimum loss of life (GED-GoB, 2011). This is in addition to the solid development targets on the basis of Vision 2021 and associated Perspective Plan 2010-2021 for Bangladesh. Along with higher per capita income, Vision 2021 lays down a development scenario with a higher standard of living; improved education, social justice and equality; equitable socio-economic environment and the ensured sustainability through better protection from climate change and natural disasters. The implementation of Vision 2021 will be carried out through two medium term development plans, with the first being the 6th Five Year Plan (2011 - 2015) that envisaged accelerating growth and reducing poverty. Bangladesh has recently completed the 6th FYP and is, at present, moving forward according to the 7th FYP.

The 6th Five Year Plan period marked the end of the Millennium Development Goals (MDG), which had been reflected in the trends of the 6th FYP Period. Bangladesh achieved most of the MDGs with remarkable progress in the areas of poverty alleviation, food security, primary school enrollment, gender parity in primary and secondary level education, lowering the infant and under-five mortality rate and maternal mortality ratio, improving immunization coverage, and reducing the incidence of communicable diseases (GED-GoB, 2015) against the backdrop of increasing hazards. The Government now needs to properly address disaster related issues that are a constant threat to growth and development.

Table 4.1: Budget During 6FYP period (FY 2011- FY 2015)

Year	Revised Budget (Taka in Crore)
2010-11	130011
2012-12	161213
2012-13	161213
2012-14	216221
2014-15	239668

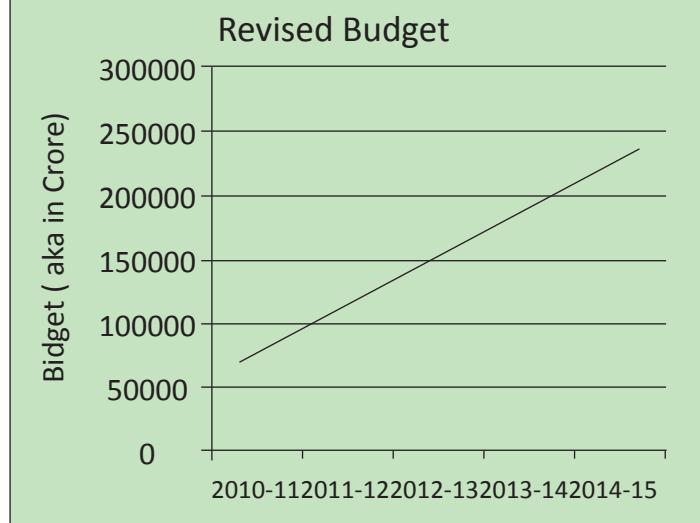


Figure 4.1: Trends in allocation during 6FYP period (FY 2011- FY 2015)

Strong and continuous growth of the economy has led Bangladesh to recently achieve the status of middle-income country. The growth of the country is marked by increased budget and, consequently, increased development work every year. The growing budgetary trend during national 6th FYP period is also clearly visible, as illustrated in Table 4.1 and Figure 4.1.

Table 4.2: Trend of development and non-development budget allocation during 6th FYP period

Year	Revised Budget (in Crore TAKA)	
	Development	Non- Development
2010-11	37173	92838
2011-12	42364	118849
2012-13	53859	135467
2013-14	61194	155028
2014-15	76372	163296

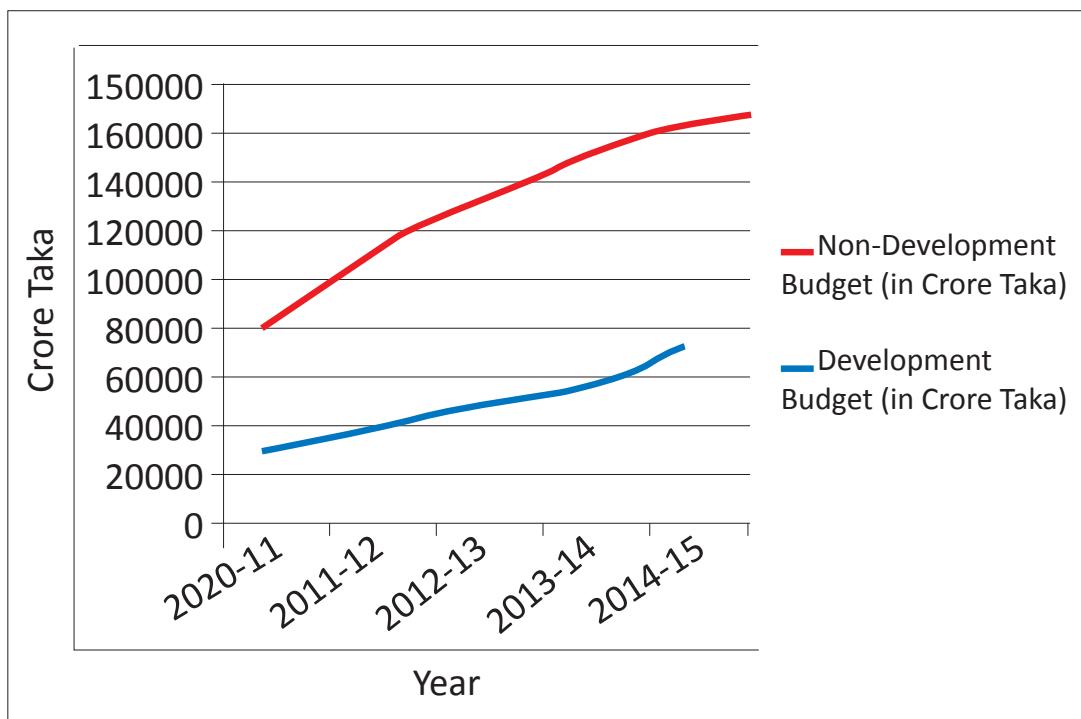


Figure 4.2: Trend of development and non-development budget allocation during 6th FYP period

The focus of the present study is the development budget. Figure 4.3 shows distribution of total ADP allocation among different sectors during the 6th FYP Period. The sectoral distribution of the total ADP allocation shows most investment in the transport sector followed by power, education and religious affairs, rural development & rural institutions, physical planning, water supply, housing and health, nutrition, population and family affairs and agriculture respectively. The sectoral trend shows the development budget investments to achieve the targets of Millennium Development Goals as well as Perspective Plan and Vision 2021.

Total Allocation in Different Sectors During 6 FYP Period (in Crore Taka)

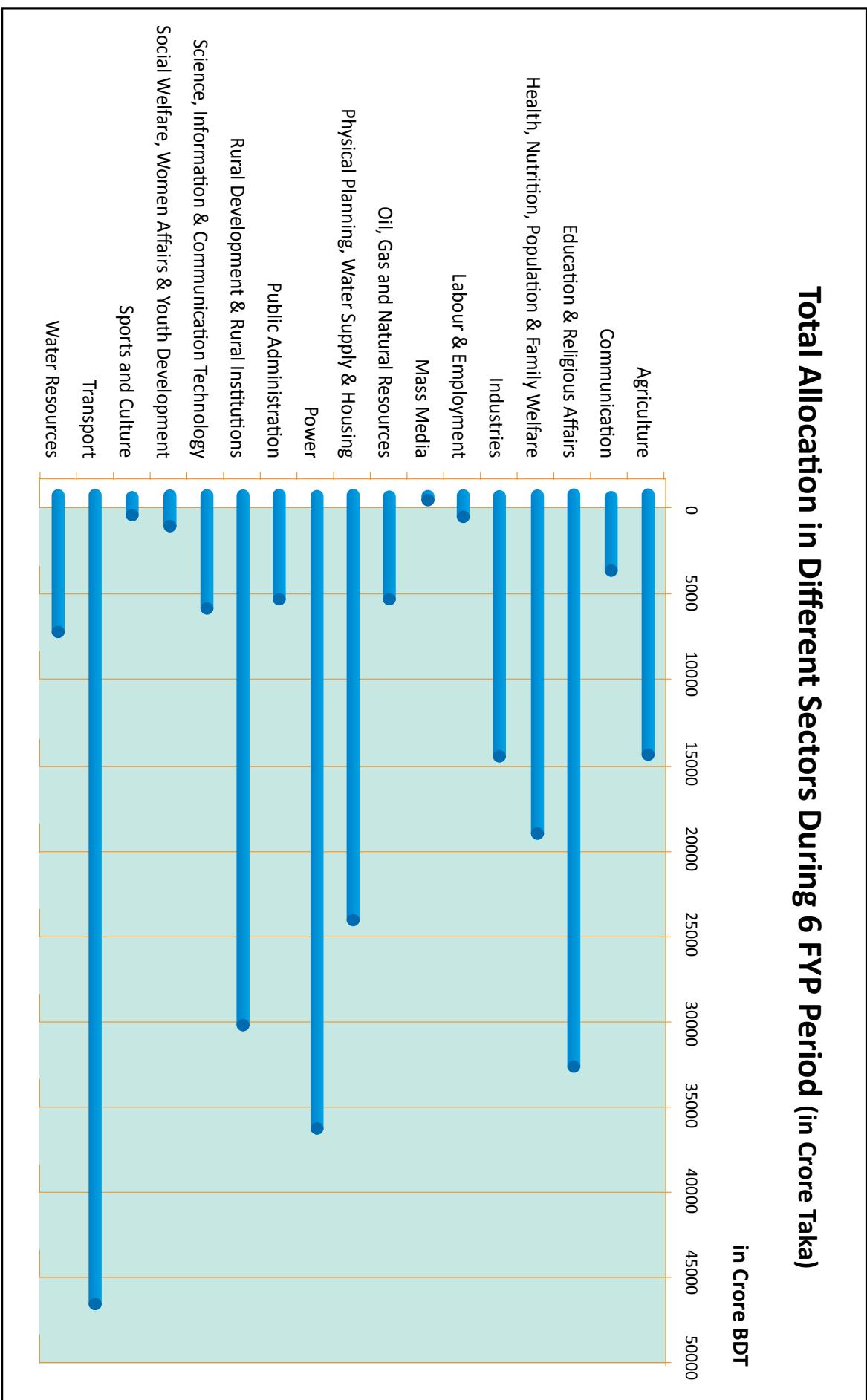


Figure 4.3: Budget allocation in different ADP sectors during 6th FYP period

Top10 Ministries/Divisions in terms of ADP Allocation during 6FYP

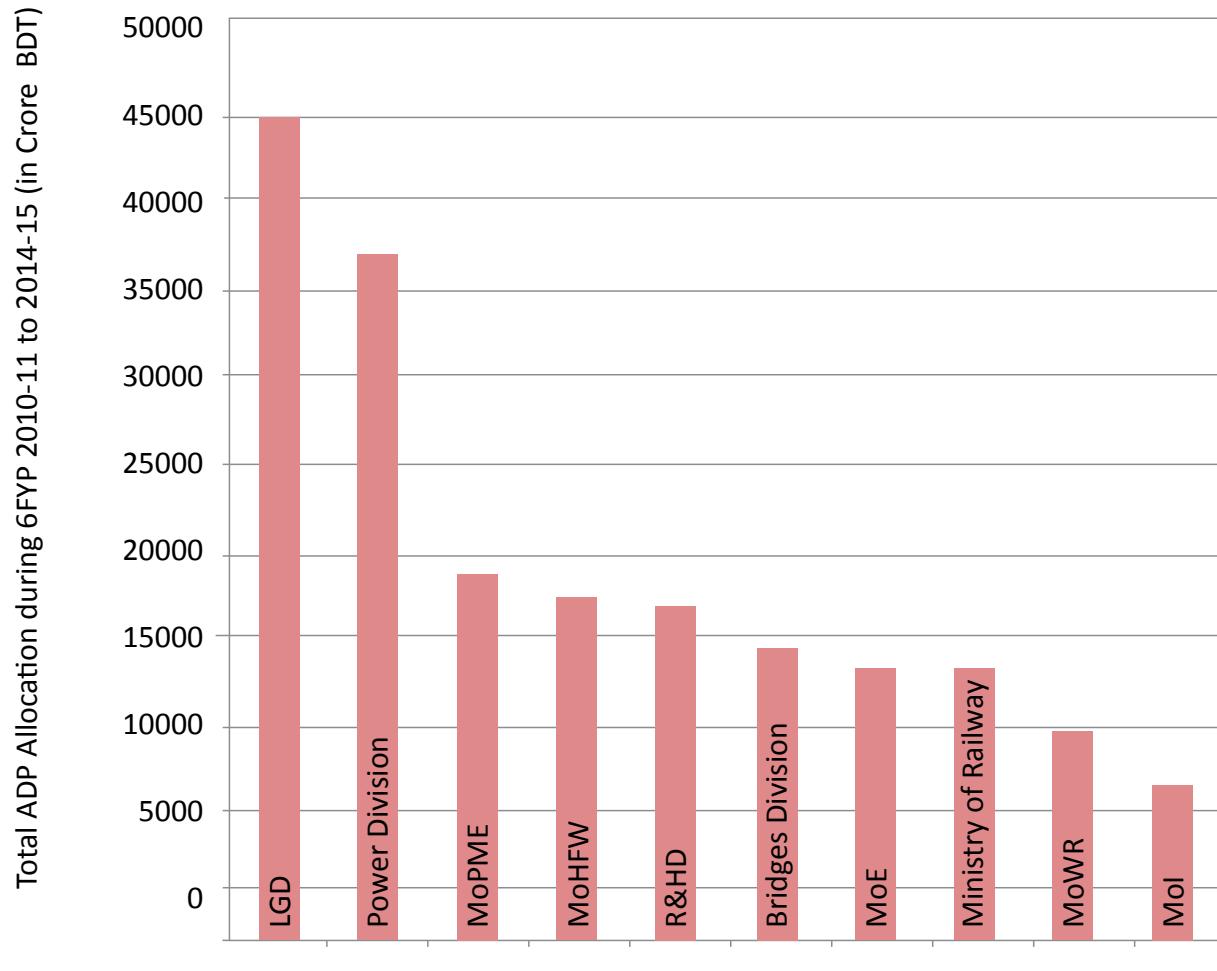


Figure 4.4: Top 10 Ministries/Divisions in terms of total ADP allocation during 6th FYP Period

Figure 4.4 shows top 10 Ministries/Divisions as per the amount of ADP allocation received during 6th FYP period. Local Government Division received the maximum ADP allocation followed by Power Division, Ministry of Primary and Mass Education, Ministry of Health and Family Welfare, Roads and Highway Division, Bridges Division, Ministry of Railway (Formerly Railway Division), Ministry of Water Resources and Ministry of Industries respectively. Whereas, figure 4.5 illustrates year-wise ADP allocation among these Ministries/Divisions. Bridges Division saw a major change in trend in the FY 2015 and received the second highest ADP allocation in FY 2015 for the construction of the Padma Multipurpose Bridge.

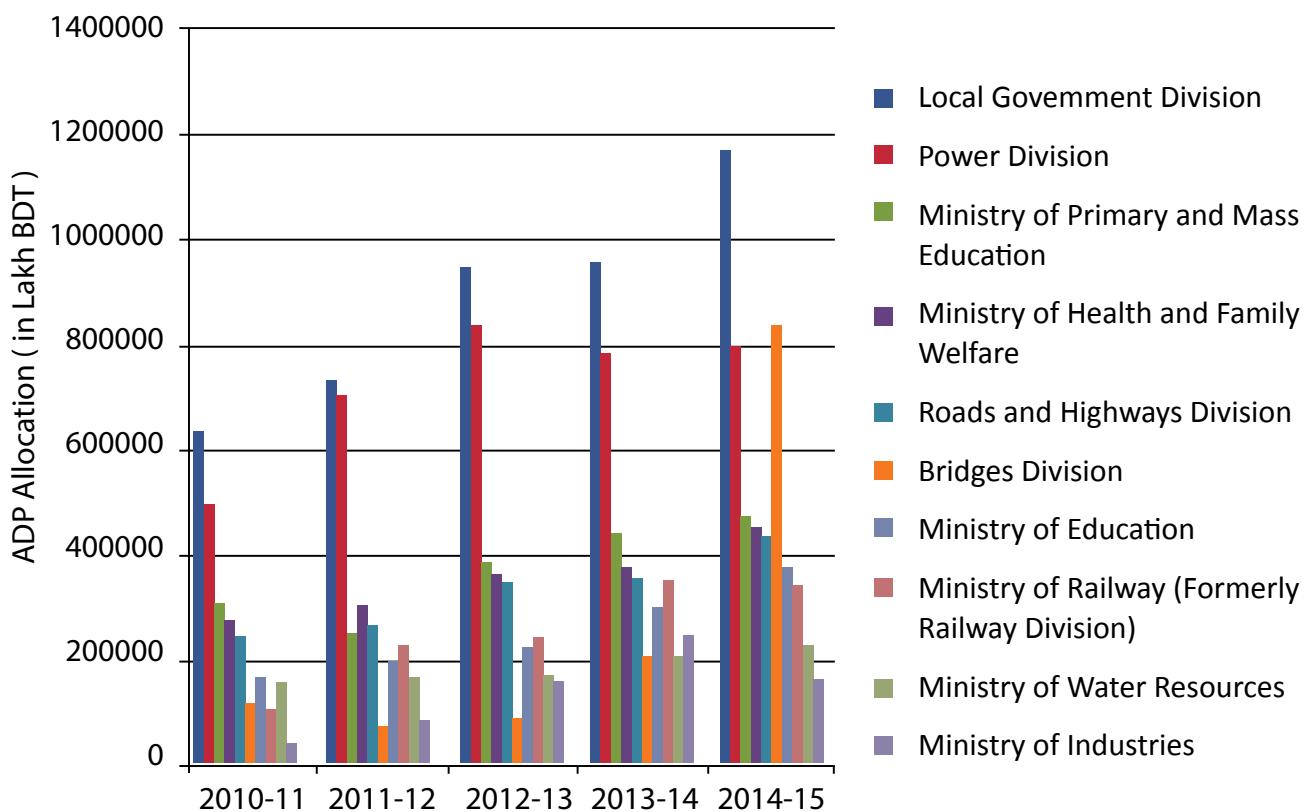


Figure 4.5: Year-wise ADP allocation of top 10 ministries/ divisions during 6th FYP period

4.2 Disaster Sensitive Investment in 6th FYP Period

4.2.1 Aggregate Data Analysis

The 6th FYP Period attempted to carry forward the implementation of the approved National Disaster Management Plan 2010 - 2015 with a comprehensive all-hazard, all-risk and all-sector approach based on previous lessons. Among the two aspects of Disaster Management, Disaster Risk Reduction and Emergency Response, the 6th FYP attempted to focus more on Disaster Risk Reduction in order to reduce the relief and recovery needs and to remain prepared to deal with any emergencies. The government also accorded the focus on community level preparedness, response, recovery and rehabilitation emphasizing the following three broad-based strategies:

- Disaster management involving both risk and crisis management of disasters including prevention, emergency response, and post disaster recovery.
- Community-based preparedness programmes to focus on protection of lives and properties as well as involvement of local government bodies; Promoting Self-reliance to be the key for preparedness, response, and recovery.
- Consideration of Non-structural mitigation measures such as community disaster preparedness training, advocacy, and public awareness to be high priority; an integration of structural mitigation with non-structural measures.

With this in consideration, the ADP was reviewed by the research team, followed by consultations with TAC members. The research team, with extensive consultations with TAC members, identified six ministries that are implementing DRR sensitive projects in Bangladesh. These ministries are:

- Ministry of Agriculture (MoA)
- Ministry of Environment and Forests (MoEF)
- Ministry of Local Government, Rural Development and Co-operatives (MoLGRDC)
 - Local Government Division (LGD)
 - Rural Development and Co-operatives Division (RDCD)
- Ministry of Housing and Public Works (MoHPW)
- Ministry of Disaster Management and Relief (MoDMR)
- Ministry of Water Resources (MoWR)

There might be several other Ministries/Divisions who are implementing projects with explicit or implicit components of disaster risk reduction and disaster preparedness. But the six identified ministries have overtly appeared to be the major stakeholders in disaster management of Bangladesh as per the rules and regulations enshrined in the Standing Order on Disasters (SoD) and other policy instruments of GoB with respect to disaster management. In addition, the researchers studied the allocation of business of these ministries, which also provided clear indications of the reasons behind the undertaking of DRR relevant projects by these ministries.

Afterwards, a thorough analysis of all projects by the six ministries was carried out and a total number of 164 projects were identified in relation to disaster management in Bangladesh. These projects were distributed in five sectors out of the 17 ADP sectors. The five sectors are listed below:

1. Agriculture
2. Physical Planning, Water Supply & Housing
3. Public Administration
4. Rural Development & Rural Institutions
5. Water Resources

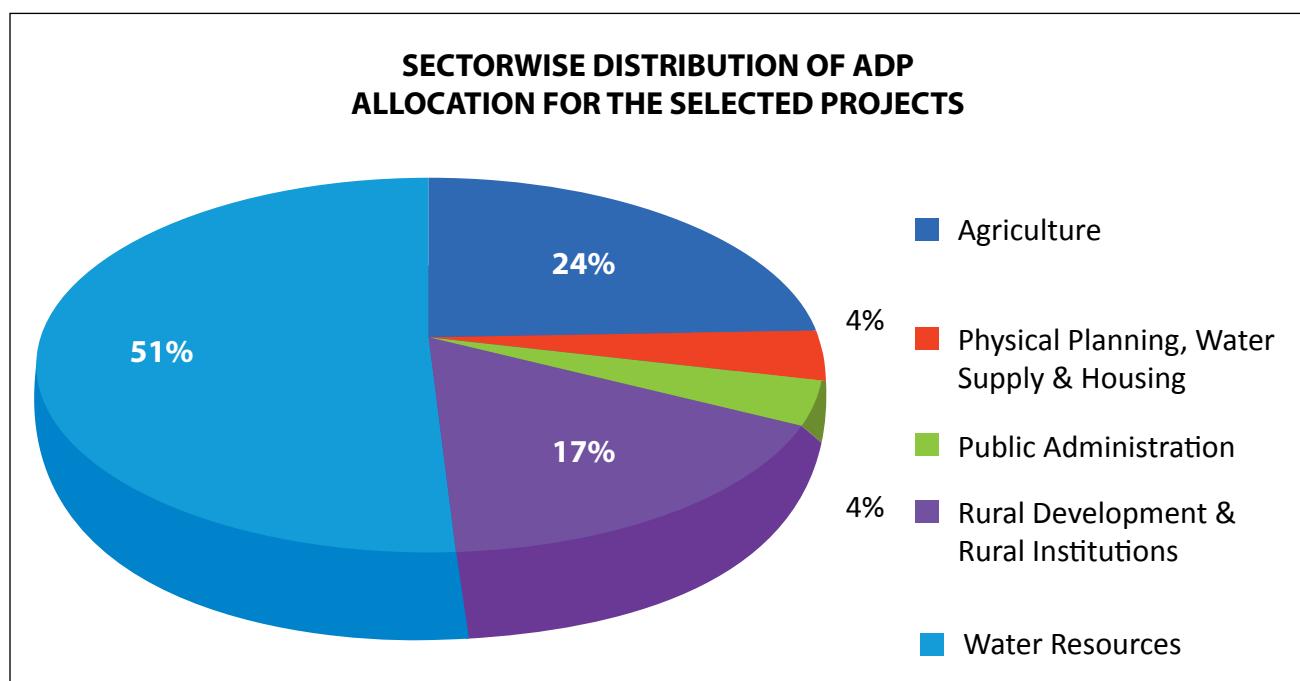


Figure 4.6: Sector-wise distribution of ADP allocation for the identified DRR sensitive projects during 6th FYP period

Figure 4.6 above shows the sector-wise distribution of ADP. Most of the selected DRR sensitive projects were implemented by Ministry of Water Resources. Bangladesh being a riverine country with regular flooding and continuous riverbank erosion in its different parts during monsoon requires major development works for risk reduction. Water Resources sector received 51% of the ADP allocation of the selected DRR sensitive projects during 6th FYP period followed by agriculture (24%), rural development and rural institution (17%), physical planning, water supply & housing (4%) and public administration sector (4%).

Figure 4.7 illustrates year-to-year ADP allocation of the six ministries. The statistics of Local Government Division (LGD) and Rural Development and Co-operatives Division (RDCD) of Ministry of LGRDC is shown separately due to their large size of their allocations during the period. LGD of MoLGRDC received a greater share of ADP allocation compared to the other ministries. Ministry of Disaster Management and Relief (MoDMR) received the second lowest amount of total ADP allocation among the six ministries.

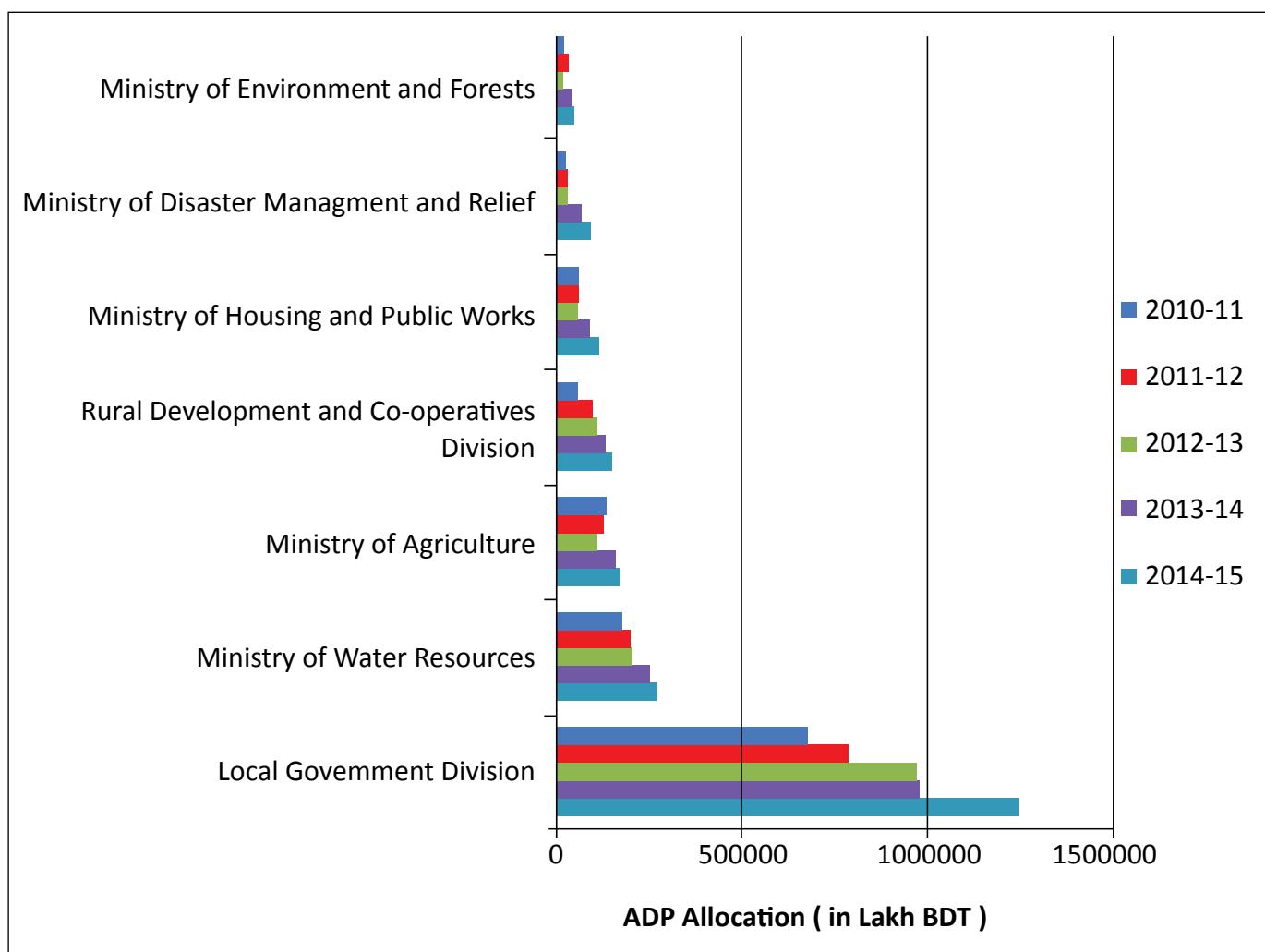


Figure 4.7: Budget trends of disaster relevant ministries/ divisions during 6th FYP period

Table 4.3 and Figure 4.8 illustrate ministry-wise distribution of the selected DRR sensitive projects.

Table 4.3: Frequency of DRR sensitive projects during 6th FYP period (FY2011- FY2015) in selected ministries

Ministry Name	Total Projects Implemented During 6FYP Period	Number of DRR Sensitive Projects
Ministry of Agriculture	120	3
Ministry of Environment and Forests	59	16
Ministry of Disaster Management and Relief	17	13
Ministry of Housing and Public Works	43	10
Ministry of Water Resources	112	92
Ministry of LGRD & Co-operatives	348	30
Total	699	164

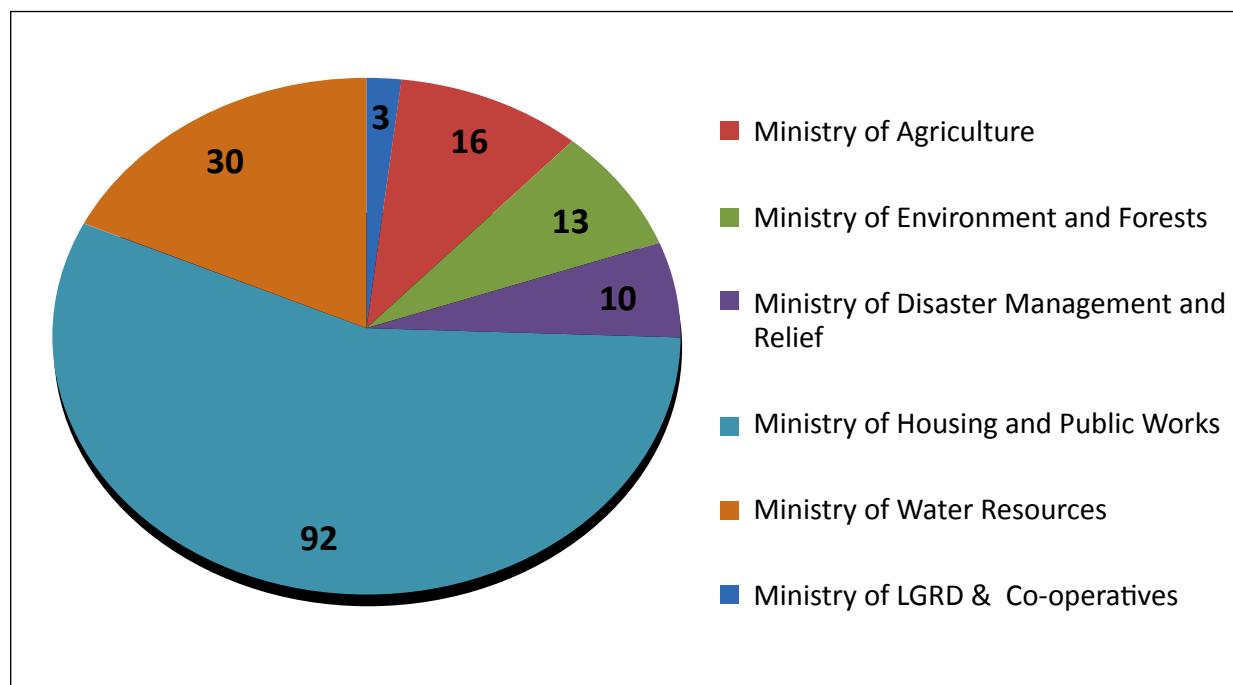


Figure 4.8: Frequency of DRR sensitive projects in selected ministries during 6th FYP period (FY 2011- FY 2015)

Figure 4.9 highlights the distribution of DRR sensitive projects among the six identified ministries. Most of the projects were implemented in the southern part of Bangladesh, which is prone to multiple hazards. Among these ministries, MoLGRDC implemented most of the projects. These projects predominantly involved structural measures to address DRR.

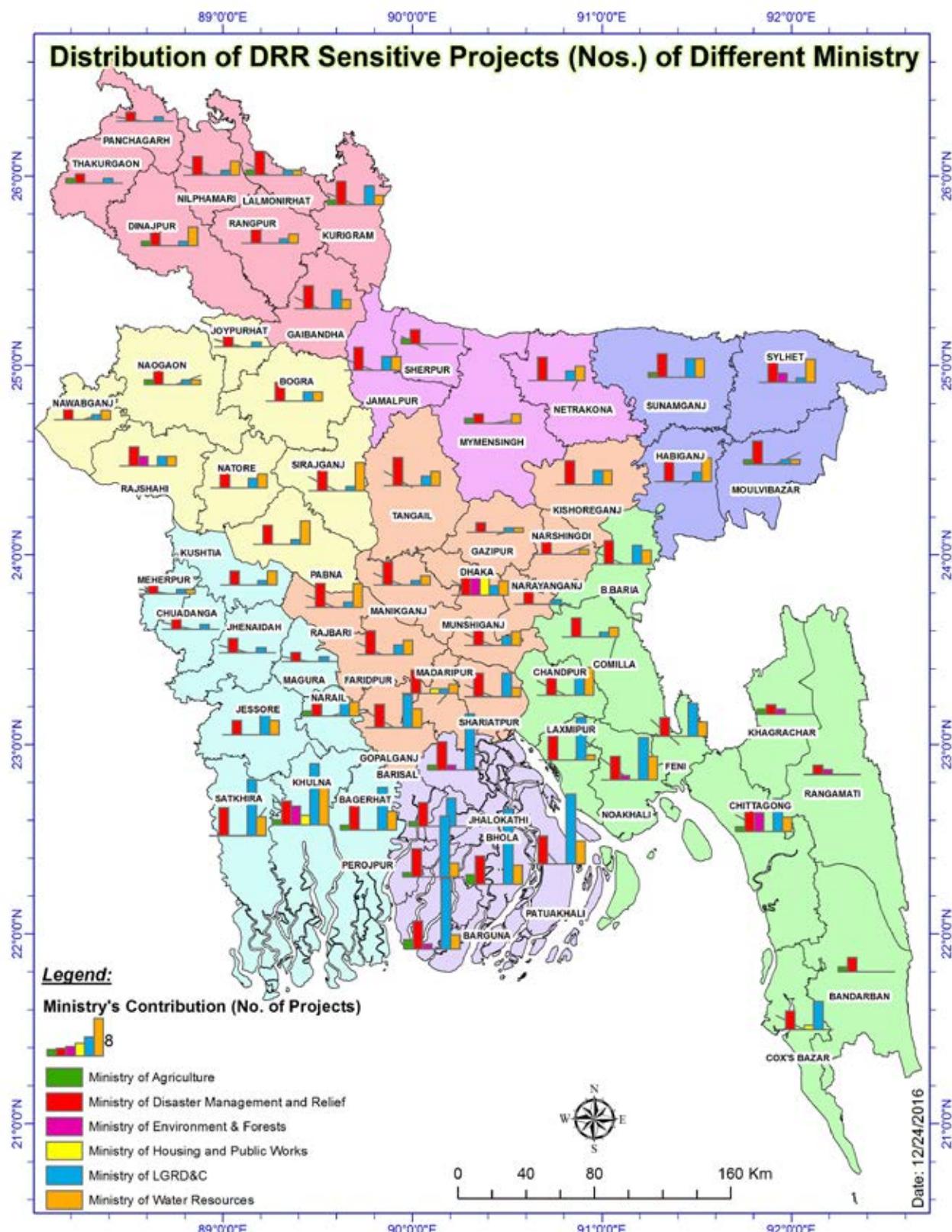


Figure 4.9: Distribution of DRR sensitive projects of different ministries during 6th FYP period

Figure 4.10 delineates a comparison between the total ADP allocations received by the six ministries during the 6th FYP period with the total allocation for identified DRR sensitive projects and weighted total allocation of identified DRR sensitive projects during the timeframe.

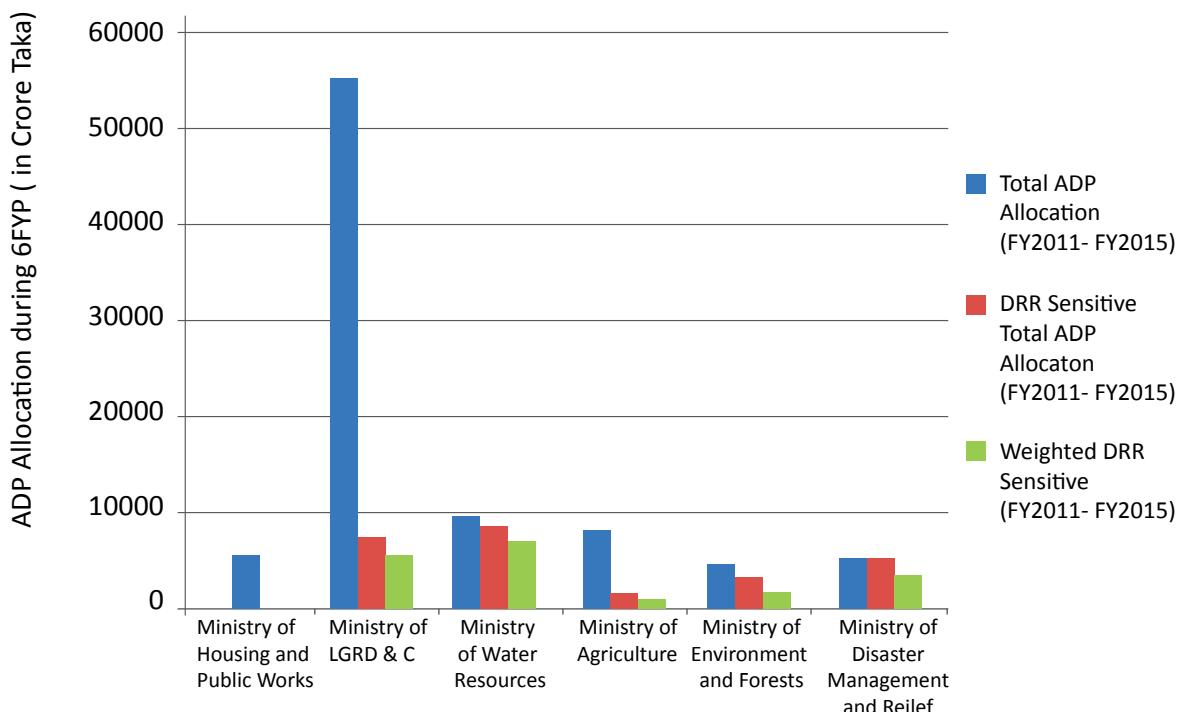


Figure 4.10: Ministry-wise distribution of ADP allocation for the identified DRR sensitive projects and total ADP allocation for the selected ministries during 6th FYP period

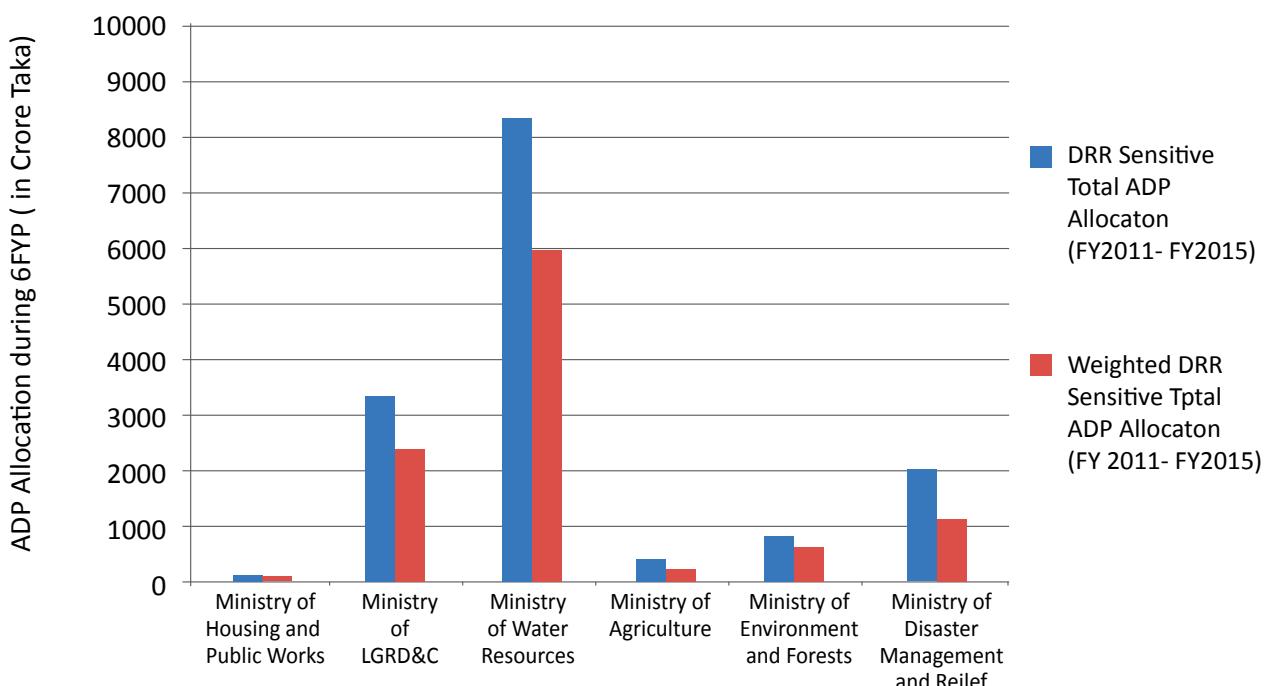


Figure 4.11: Ministry-wise distribution of ADP allocation (DRR sensitive and Weighted DRR Sensitive) for the identified DRR sensitive projects during 6th FYP period

Figure 4.11 expands the diagram in 4.10 to show only the total allocation for identified DRR sensitive projects and weighted total allocation of identified DRR sensitive projects during the 6th FYP period for a better graphical representation.

Table 4.4 shows total allocation and break down of financial contributions and component-wise allocation for the identified DRR sensitive projects within each ministry during the 6th FYP period.

Table 4.4: Allocation, source of finance & its components for the selected DRR sensitive projects (164 in total) during 6th FYP Period (FY 2011- FY 2015)

Ministry Name	Total Allocation (in Crore Taka) [A=B+C A=D+E]	Total GoB Contribution (in Crore Taka) [B]	Total Project Aid (in Crore Taka) [C]	Total Revenue (in Crore Taka) [D]	Total Capital (in Crore Taka) [E]
Ministry of Agriculture	350.35	245.54	104.81	60.88	289.47
Ministry of Environment and Forests	799.67	50.56	749.11	20.34	484.48
Ministry of Disaster Management and Relief	2082.73	1537.93	544.80	400.73	1682.00
Ministry of Housing and Public Works	39.31	18.18	21.13	34.40	4.91
Ministry of Water Resources	8590.41	6495.11	2227.89	739.85	7944.46
Ministry of LGRD & Co-operatives	3235.49	1303.16	1916.18	430.08	2801.56
Total	15097.96	9650.48	5563.92	1686.28	13206.88

The following graphs show ministry-wise percentage of financial contributions for the selected projects. Figure 4.12 illustrates ministry-wise ratio of GoB contributions and Project aid. Among the selected DRR sensitive projects during 6th FYP Period, the projects implemented by Ministry of Water Resources, Ministry of Agriculture as well as Ministry of Disaster Management and Relief are predominantly GoB-funded whereas project aid accounted for approximately 94% of the budget for the selected projects implemented by Ministry of Environment and Forest.

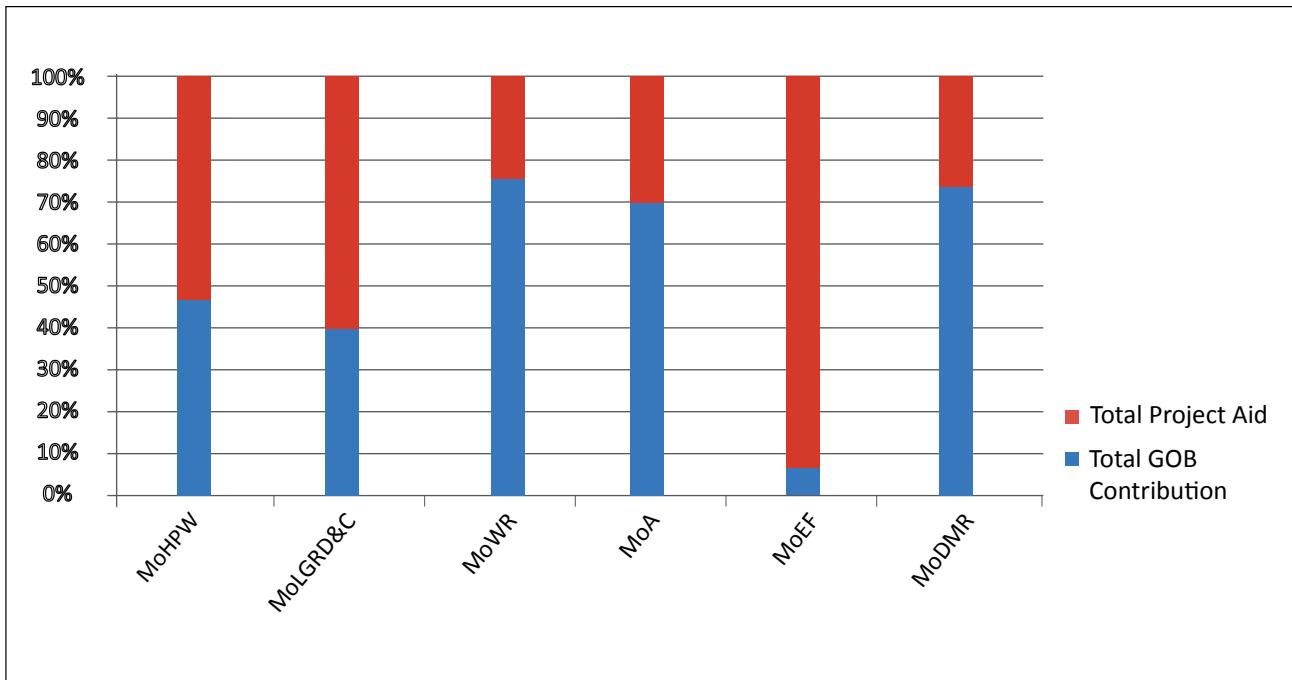


Figure 4.12: Ministry-wise ratio of financial contributions for the identified projects during 6th FYP period during 6FYP Period

Figure 4.13 highlights Capital versus Revenue components percentages for the identified projects during 6th FYP period. For these projects, less than 20% funds were allocated for the revenue components in most of the ministries, except for MoHPW which had more than 85% revenue component.

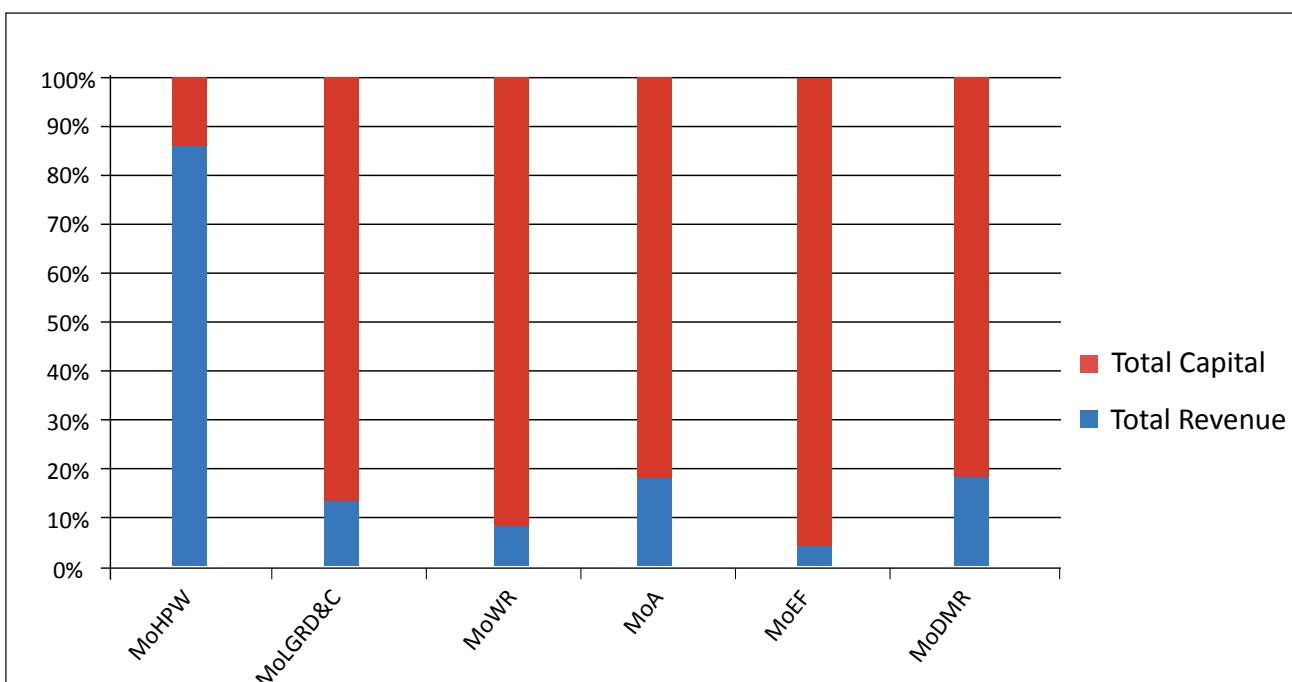


Figure 4.13: Ministry-wise allocation of capital vs. revenue components percentages for the identified projects during 6th FYP Period

4.2.2 Year-wise Trend in Allocation

Figure 4.14 shows year-wise total DRR sensitive allocations for the selected projects as well as the year-wise distributions of different sources of funds for the identified projects. Figure 4.15 shows the trends of GoB contributions and project aid throughout the 6th FYP period. Both graphs demonstrate a continuous and healthy increasing trend for both GoB contributions and Project aid during FY 2011- FY 2015. The graphs also suggest that the Government of Bangladesh contributed 62%-65% of the total funding for the selected projects and the trend was almost consistent throughout the timeframe. The funding of the selected projects in FY 2015 had an increase of approximately 96% in GoB contributions with respect to the funding in FY 2011 whereas the increase in Project Aid was approximately 90%.

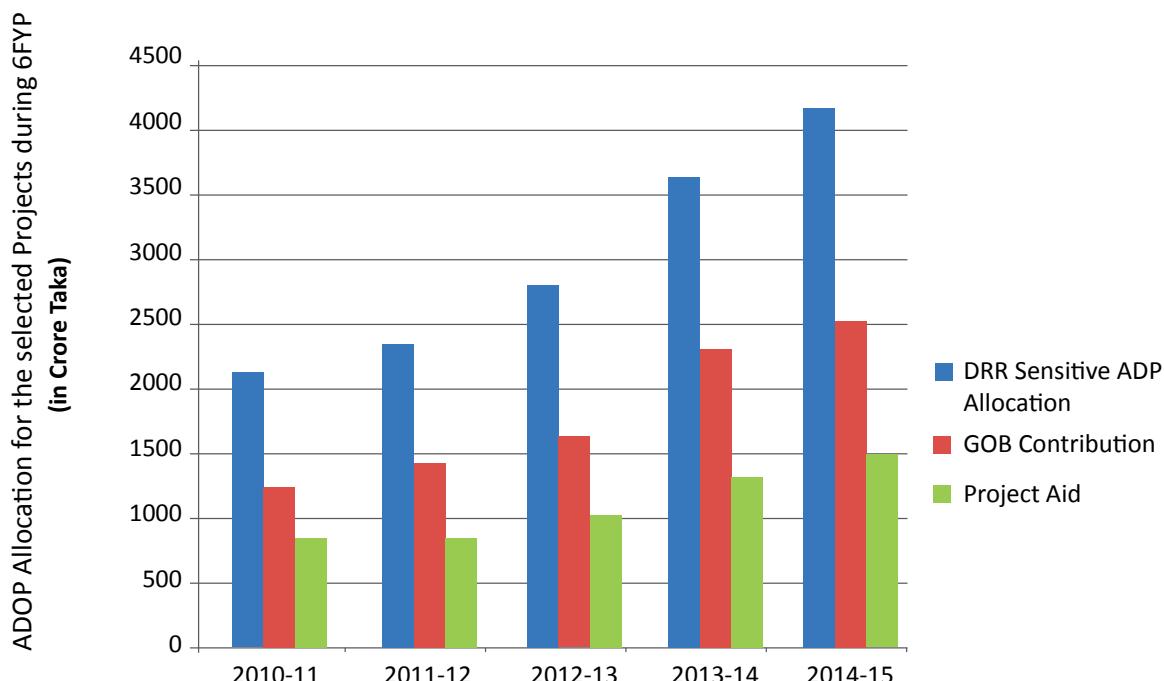


Figure 4.14: Year-wise distribution of financial contributions for the identified projects during 6th FYP period



Figure 4.15: Year-wise trends of GoB contributions and project aid for the identified projects during 6th FYP period

Figure 4.16 illustrates ministry-wise trend of DRR sensitive ADP allocation for the selected projects during the 6th FYP period. Allocation for DRR sensitive projects of Ministry of Water Resources; Ministry of Disaster Management and Relief and, to an extent, Ministry of Environment and Forest observed significant increases in FY 2013 whereas Ministry of LGRDC observed a sharp increase in FY 2012.

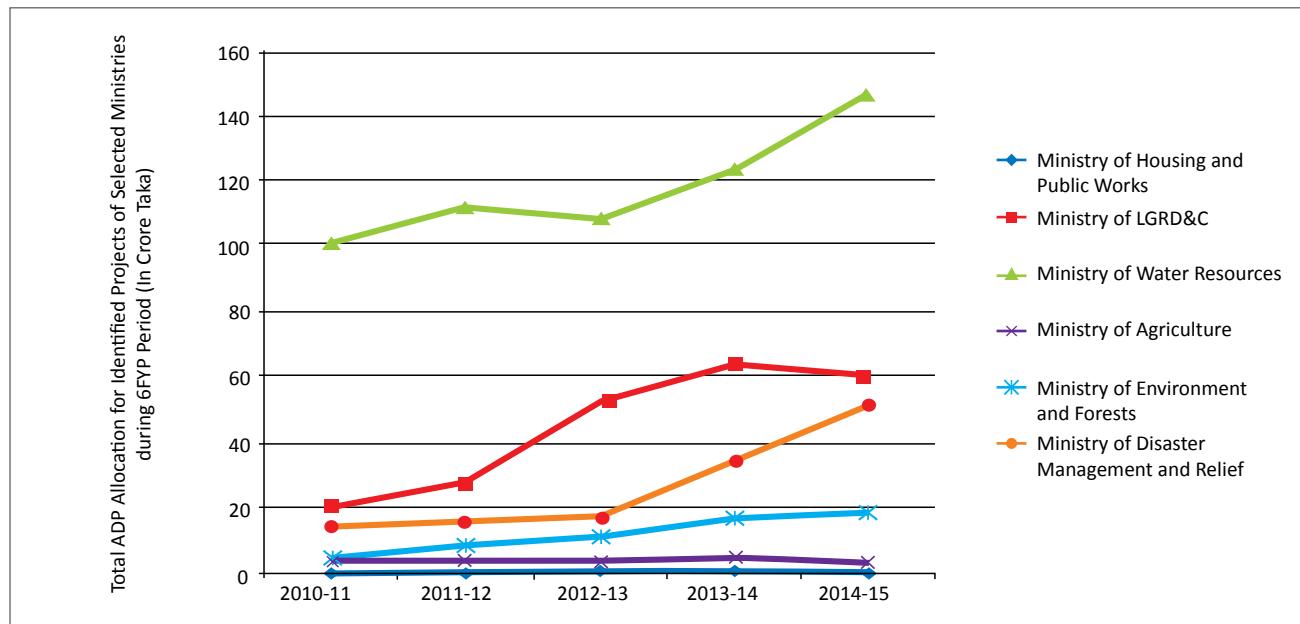


Figure 4.16: Year-wise trends of identified DRR sensitive projects for the selected ministries during 6th FYP Period (FY 2011- FY 2015)

Figure 4.17 illustrates annual trends of overall allocation and expenditures as well as allocation and expenditures for the selected ministries during the 6th FYP period. The trend shows a gap between allocation and expenditures for both the overall scenario as well as for the selected ministries. Table 4.5 shows ministry-wise distribution of annual allocation and expenditures where expenditure is lower than the allocation, but in some cases, expenditure is higher.

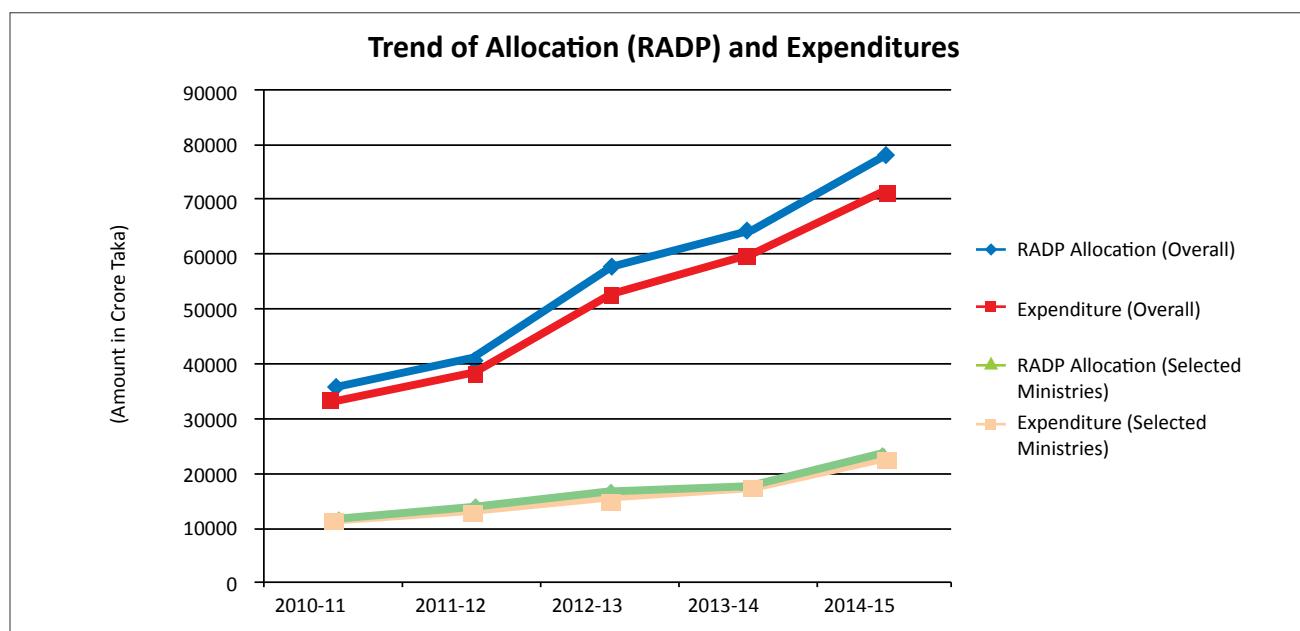


Figure 4.17: Annual trend of overall allocation and expenditures as well as allocation and expenditures for the selected ministries during 6th FYP period (FY 2011- FY 2015)

Table 4.5: Annual trend of overall allocation and expenditures of individual (selected) ministries during 6th FYP period (FY 2011- FY 2015)¹

Ministry	2010-11			2011-12			2012-13			2013-14			2014-15		
	RADP Allocation	Expenditure	%	RADP Allocation	Expenditure	%	RADP Allocation	Expenditure	%	RADP Allocation	Expenditure	%	RADP Allocation	Expenditure	%
Ministry of Housing and Public Works	47496.05	46793.97	99.00	50181	50150.31	90.00	49254.02	48935.54	99.99	78313	78287.34	97.66	205904	230011.1	107.16
Ministry of Water Resources	144442	128260.4	98.00	154272.83	140975.3	139	177869.89	170189.42	102.81	203250	199843.72	97.15	218695.86	201958.83	97.45
Ministry of Agriculture	104218.14	102039.1	96.00	102277	98339.87	95.00	115234.63	112342.87	93.61	135038.89	133952.46	94.55	143267	142257.66	99.73
Ministry of Environment and Forests	16506	15511.25	72.00	30213.64	27798.77	72.00	26141.75	21872.82	76.22	38736	32898.69	81.51	44564.1	40770.71	94.11
Ministry of Disaster Management and Relief	21560.98	18483.44	98.00	25522	27173.23	98.00	28999	33085.91	113.77	60358.5	62757.71	101.88	76173.42	71286.51	92.52
Local Government Division (Ministry of LGRD&C)	38403.38	38552.89	99.00	81142.45	80553.47	99.00	95445.04	101329.75	114.37	111762.9	120055.89	108.99	126920.1	125559.86	99.09
Rural Development Division (Ministry of LGRDC)	785380.16	753612.75	94.00	894557.27	847146.52	94.00	1136083.07	1042532.12	92.35	1147963.25	1086039.39	94.41	1500765.11	1438598.16	97.03

¹ Amounts in Crore Taka

4.3 Detailed Trend Analysis of Selected DRR Relevant Projects

Among the six selected ministries, a total of 164 projects were identified to be relevant projects because of their clear DRR objectives. Accuracy of findings and relevance of projects were further tested with KIIs among the project officials of these 6 ministries. The KIIs ensured a cross checking of the selected projects by ministry officials who had knowledge with regard to the implementation of these projects. Interviewees identified the percentage of allocation for DRR among all the projects. Some projects had 100 percent allocation for DRR while some projects had relatively small allocation for this purpose. This assigned weight¹ was used to broadly classify the 164 projects into three categories: high, medium and low, as explained below.

High= Refers to the projects where 70-100% of the total allocation is dedicated to DRR

Medium= Refers to the projects where 40-69% of the total allocation is dedicated to DRR

Low= Refers to the projects where less than 40% of the total allocation is dedicated to DRR

Any project with more than 70 percent of total allocation for the purpose of DRR was identified as high relevance project. Medium relevance projects had DRR related allocation of 40-69 percent of the total allocation. Rest of the projects, which spent less than 40 percent of allocation for DRR, were identified as low relevance projects². The boundary for high, medium and low has been determined based on information from three sources: KII, expert Opinion and field experience. During the interview, most of the ministry officials supported the fact that any project that received more than 70 percent of total allocation for DRR can be regarded as a highly relevant project. 100 percent allocation is not completely spent for DRR due to the fact that the allocation is also used for some other miscellaneous purposes which is beyond the objective of the project. Following the KIIs the researchers reviewed the allocations for each of the 164 projects' allocation as given in the ADP books. This review supported the conclusion drawn by the researchers after the analysis of the findings from KII. It also seemed to match the "expert opinion"³ in this regard. The categorization was finally counter checked by case studies in the field. Field officials and project beneficiaries were also asked to rate the relevance of the particular project with DRR. Based on the three sources of verification, the boundary of the classified categories, as mentioned in the box, was fixed.

This categorization emphasizes the extent to which DRR & DP have been addressed by the projects, not merely its monetary allocation. For example, "Teesta Barrage Project" had apportioned an amount of 34 crore Taka for DRR which was only 20% of the total allocation for this project. According to the relevance criteria, this is a low category project. However, "Climate Resilient Infrastructure Improvement in Coastal Zone" project had a total allocation of 4.42 crore Taka which was entirely used to address DRR. Despite having a lower amount of allocation than the former project, it was identified as a highly relevant project because DRR was the sole purpose of the project. Based on the criteria discussed above, 94 of the 164 projects were considered to have high relevance, 53 to have medium relevance and 17 projects to have low relevance with DRR & DP. Ministry of Water Resource implemented 92 of the projects whereas Ministry of Local Government, Rural Development & Co-operatives, Ministry of Environment and Forest, Ministry of Disaster Management and Relief, Ministry of Housing and Public Works and Ministry of Agriculture implemented 30, 16, 13, 10 and 3 projects, respectively.

¹Percentage of allocation for DRR & DP from the total budget

²Decimal Values have been adjusted as Integer Numbers

³It refers to the knowledge and wisdom of the researchers and TAC members

Table 4.6: Frequency and categorization of DRR sensitive projects implemented during 6th FYP period (FY 2011- FY 2015) in selected ministries

Ministry Name	Total Projects Implemented During 6FYP Period	Disaster Sensitive Project Count			
		Total	High 70-100% (avg. 85%)	Medium 40-69% (avg. 55%)	Low >40% (avg. 20%)
Ministry of Agriculture (MoA)	120	3	1	2	0
Ministry of Environment and Forests (MoEF)	59	16	7	8	1
Ministry of Disaster Management and Relief (MoDMR)	17	13	6	7	0
Ministry of Housing and Public Works (MoHPW)	43	10	5	4	1
Ministry of Water Resources (MoWR)	112	92	59	26	7
Ministry of LGRD & Co-operatives (MoLGRD&C)	348	30	16	6	8
Total	699	164	94	53	17

The following table shows the same components as Table 4.4 but it is based on weighted values and recalculated to obtain more precise DRR-sensitive financials. Each project was weighted by a value based on its DRR sensitivity determined by the Ministry officials and the research team with consultation with the TAC members. All the components of each project were recalculated and their ministry-wise distribution is displayed in Table 4.7 along with the percentage of the weighted DRR sensitive allocation among the total DRR sensitive allocations for each component. Table 4.7 also shows that the weighted total ADP allocation for the identified 164 DRR sensitive projects during 6th FYP period is 68.5% of the total ADP allocation for these projects for the same period.

Table 4.7: Weighted DRR-Sensitive Investments for the Identified DRR sensitive projects (164 in Total) during 6th FYP Period (FY 2011- FY 2015) and their equivalency to the percentage (shown in bracket) of the total initial DRR sensitive project Investments tabulated in Table 4.4

Ministry Name	Weighed Total Allocation (in Crore Taka) [A=B+C A=D+E]	Weighed Total GoB Contribution (in Crore Taka) [B]	Weighed Total Project Aid (in Crore Taka) [C]	Weighed Total Revenue (in Crore Taka) [D]	Weighed Total Capital (in Crore Taka) [E]
Ministry of Agriculture	198.5425 (56.7%)	135.047 (55.0%)	63.4955 (60.6%)	35.725 (58.7%)	162.8175 (56.2%)
Ministry of Environment and Forests	603.2965 (75.4%)	32.191 (63.7%)	571.1055 (76.2%)	12.045 (59.2%)	383.652 (79.2%)
Ministry of Disaster Management and Relief	1326.264 (63.7%)	863.1835 (56.1%)	463.08 (85.0%)	334.3415 (83.4%)	991.922 (59.0%)
Ministry of Housing and Public Works	29.5125 (75.1%)	11.552 (63.5%)	17.9605 (85.0%)	25.6605 (74.6%)	3.852 (78.5%)
Ministry of Water Resources	5928.2965 (69.0%)	4514.5005 (69.5%)	1486.7205 (66.7%)	478.906 (64.7%)	5501.0355 (69.2%)
Ministry of LGRD & Co -operatives	2260.225 (69.9%)	850.478 (65.3%)	1406.517 (73.4%)	242.23 (56.3%)	2017.225 (72.0%)
Total	10346.137 (68.5%)	6406.952 (66.4%)	4008.879 (72.1%)	1128.908 (66.9%)	9060.504 (68.6%)

The focus of this chapter has been a detailed analysis of the projects within each ministry and of the trends and patterns of DRR relevant investments made between FY 2011 and FY 2015. Figure 4.18 shows distribution of DRR sensitive projects implemented by four of the six selected ministries. The figure suggests that a large number of these projects were implemented in the southern region/part of Bangladesh during 6th FYP period. As per categorization criteria mentioned before, most of these projects were categorized as Highly DRR sensitive projects. The following section describes elaborately the allocation pattern of the six selected Ministries for their DRR sensitive projects.

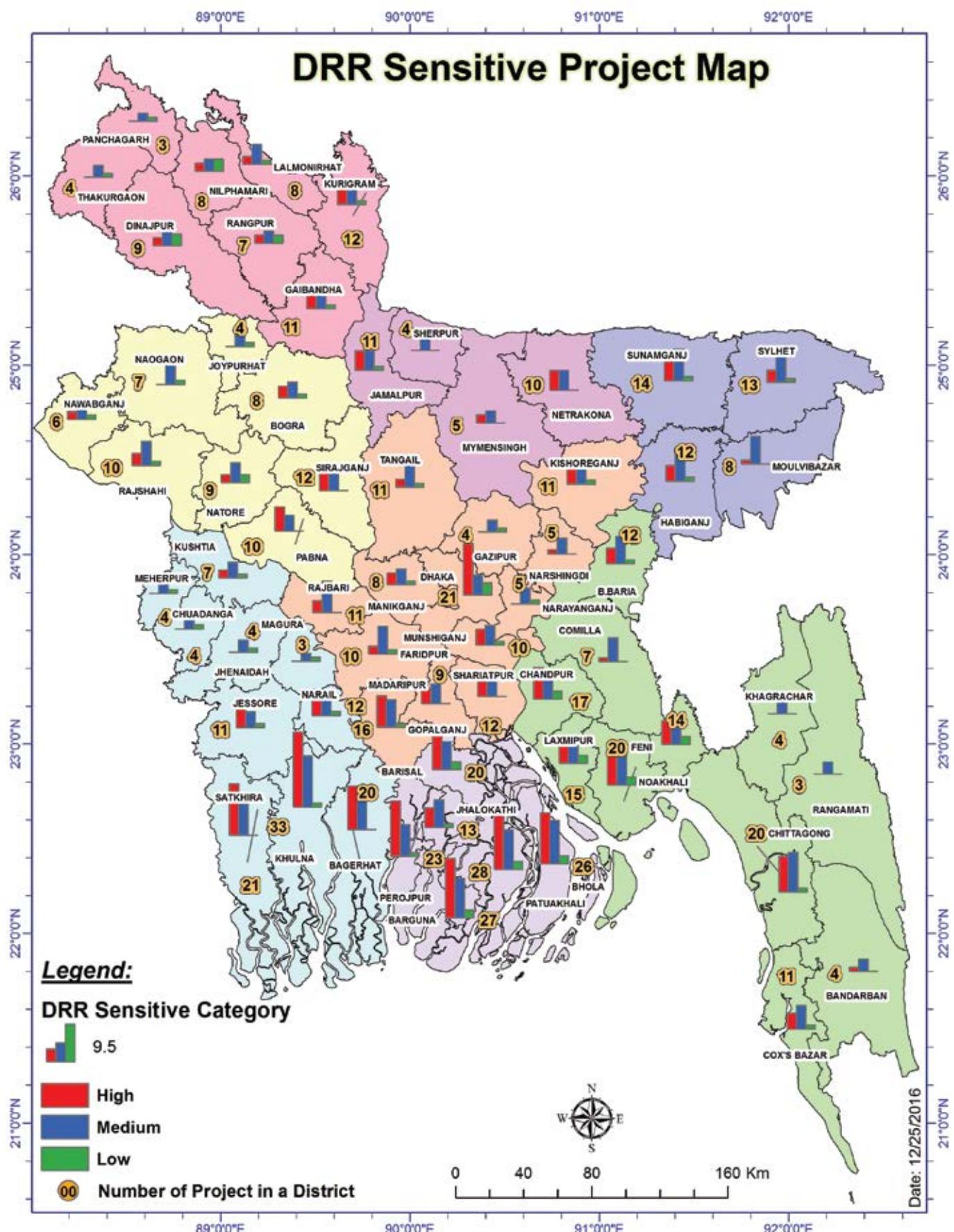


Figure 4.18: Spatial distribution of categorized DRR sensitive Projects during 6th FYP period

4.3.1 Ministry of Local Government, Rural Development and Co-operatives

This ministry is responsible for the housing and building, regional and rural policy, municipal and cities administration and finances, and the conduct of local elections. The Ministry of Local Government, Rural Development and Co-operatives has two Divisions:

- Local Government Division
- Rural Development and Co-operatives Division

Most of the DRR-sensitive projects within MoLGRDC were carried out by the Local Government Engineering Department (LGED) under Local Government Division (LGD). Local Government Engineering Department (LGED) is the major organ of Bangladesh government created for provision of transport infrastructures in rural areas and to provide technical support to the rural and the urban Local Government Institutions (LGIs), planning and implementation of infrastructure development projects in the rural and urban areas to improve communication and transport network, job creation, and poverty reduction. DRR has been a major element of the projects of LGED. Referring to the issue of DRR in LGED projects one official of the department said, "DRR is an embedded element in all of the projects of LGED. Whenever we build any infrastructure, we address the component of disaster in the plan". It has been found during the KIIs that there might not be any financial allocation dedicated to disaster risk reduction in some projects although all of the infrastructural projects of LGED address DRR. For example, LGED has recently built submersible roads in the flood prone regions of Bangladesh. The projects are titled as "infrastructure development projects" or "road building projects" but they are resilient to flood. Submersible roads can withstand flood in contrast with the general pitched roads built by the department. In recent years there have been drastic changes in the design of most of the infrastructural projects of LGED.

The newly constructed infrastructures can withstand the hazards that strike Bangladesh very often. However, it is not possible to accurately estimate such investments that address DRR without an in-depth analysis pertaining to a longer period of time. Among the projects of LGD several were found to be dedicated to DRR. The list of the projects is given in Appendix-II.

The projects have been classified into three categories based upon the allocation for DRR.

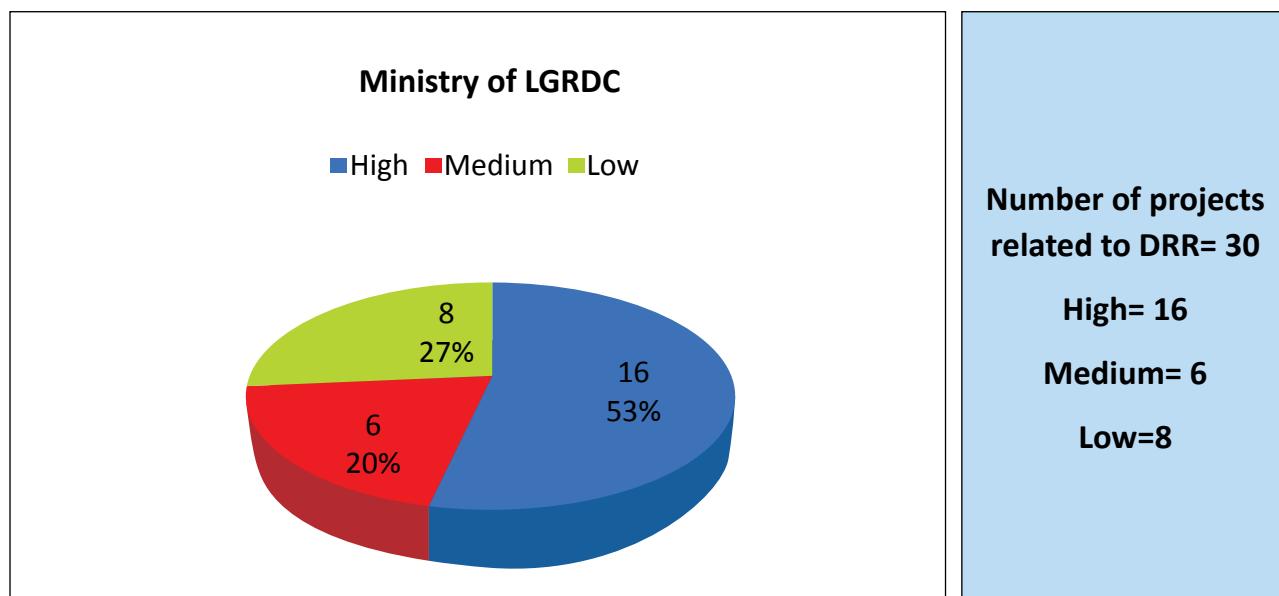


Figure 4.19: Categorization of DRR relevant projects of MoLGRDC during 6th FYP period

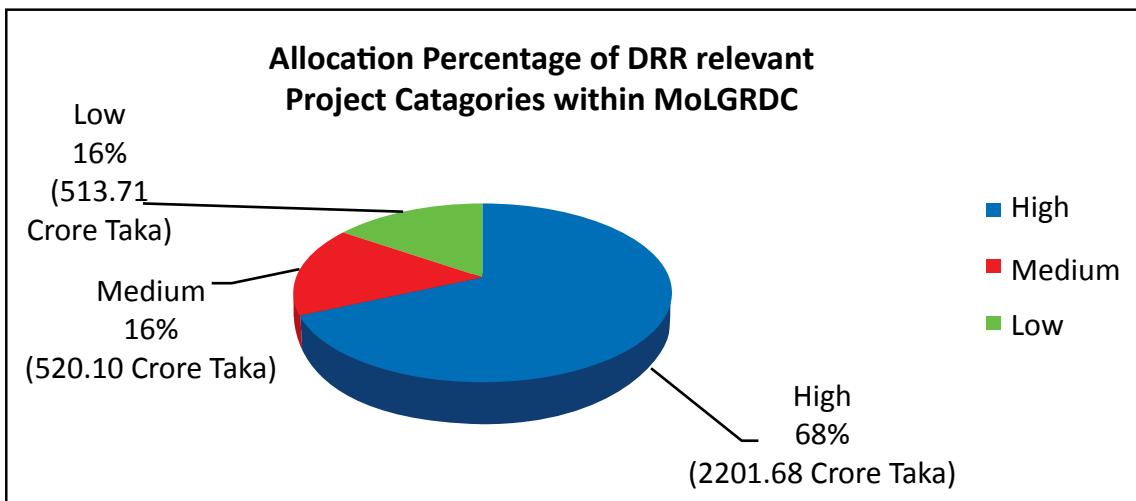


Figure 4.20: Allocation percentage for DRR relevant project categories within MoLGRDC during 6th FYP period

Percentage of monetary allocation from the selected 30 projects has been depicted in the pie chart. 68% of the money exclusively addresses disaster risk reduction. Although the count shows 53%, 20% and 27% for High, Medium and Low DRR relevance investments, respectively among the 30 projects, the percentages are 68%, 16% and 16%, respectively in terms of monetary allocations.

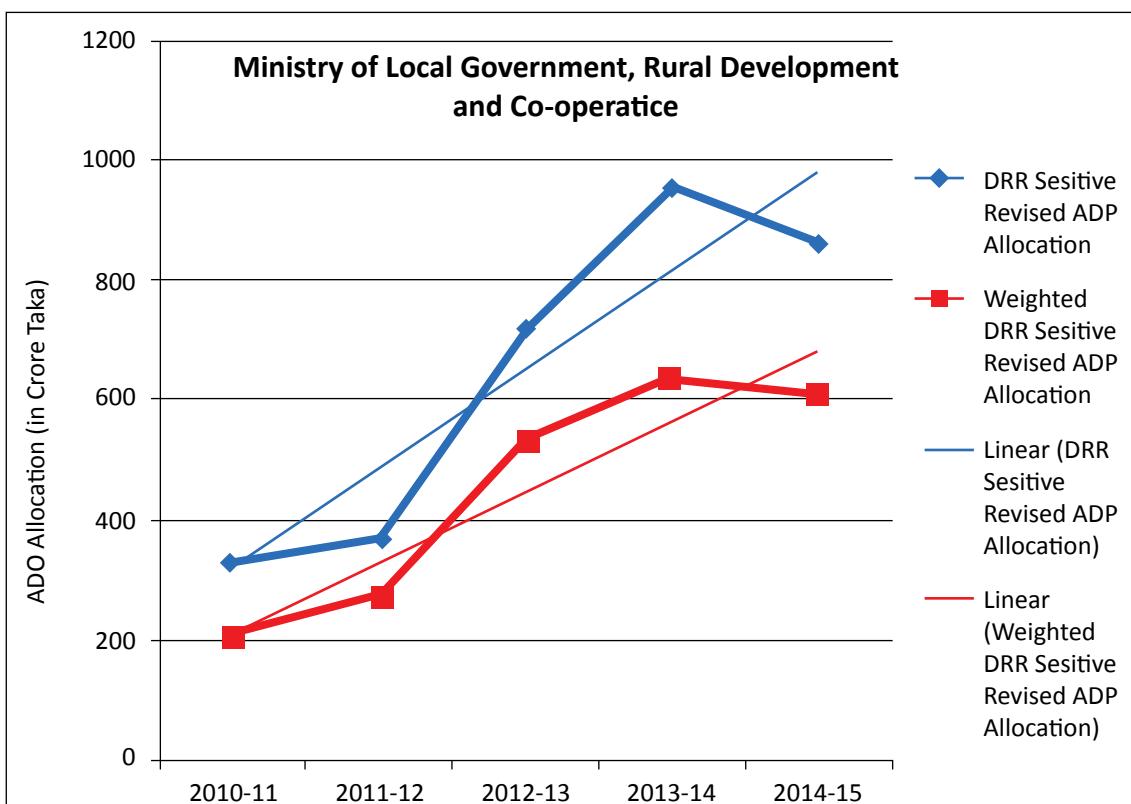


Figure 4.21: Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoLGRDC during 6th FYP period

Figure 4.21 illustrates year-wise distribution of DRR sensitive ADP allocations as well as weighted DRR sensitive ADP allocations for the 30 projects implemented by the MoLGRDC during the 6thFYP period. Both the DRR sensitive ADP allocations and weighted DRR sensitive ADP allocations graphs show significant increase in trend although the allocation of the FY 2015 shows a drop from the usual trend. However, the weighted DRR sensitive ADP allocations have a slightly lesser increasing trend than the DRR sensitive ADP allocations.

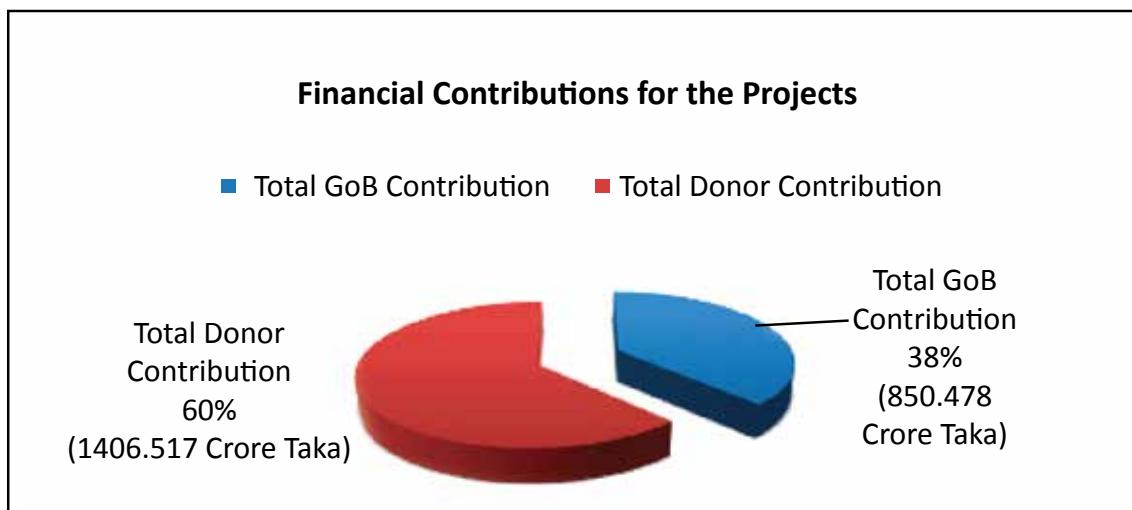


Figure 4.22: Financial contributions to DRR sensitive ADP allocation for MoLGRDC during 6th FYP period

The pie chart in figure 4.22 shows that the GoB contributed 38% of the Weighted DRR sensitive total ADP allocations for the projects totaling 850.478 Crore Taka whereas the project aid was 62% (totaling 1406.517 Crore Taka) among the finances of the identified DRR sensitive projects in MoLGRDC during the 6th FYP period.

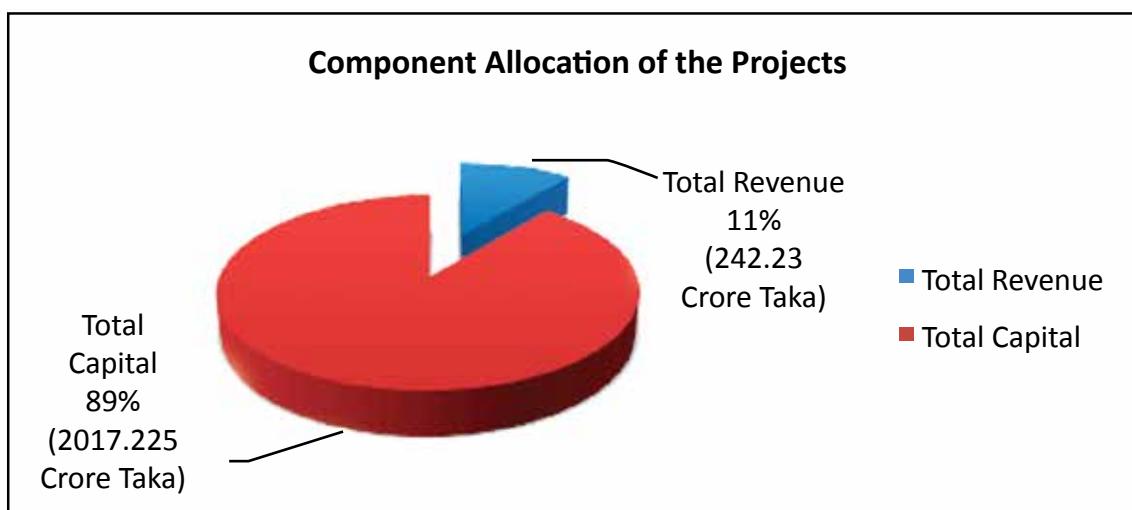


Figure 4.23: Revenue and capital components of DRR sensitive allocation for MoLGRDC during 6th FYP period

Figure 4.23 shows that among the weighted DRR sensitive total ADP allocations for the projects, 2017.225 Crore Taka was allotted for capital components (89%) whereas 242.23 Crore Taka (11%) was allotted for Revenue components of the projects.

The year-wise DRR-sensitive ADP Allocation of the ministry for the identified projects along with the GoB contributions and project aid portions of the allocation is shown in figure 4.24. The 4.24b shows the weighted version of the graph. Figure 4.25 (4.25b shows the weighted allocations) illustrates the trends of the GoB contribution and project aid for the identified projects during 6th FYP Period. The graphs show an overall increased trend of both GoB contribution as well as project aid during the 6th FYP Period. However, a decreased trend was seen for both GoB contribution and project aid during the FY 2015.

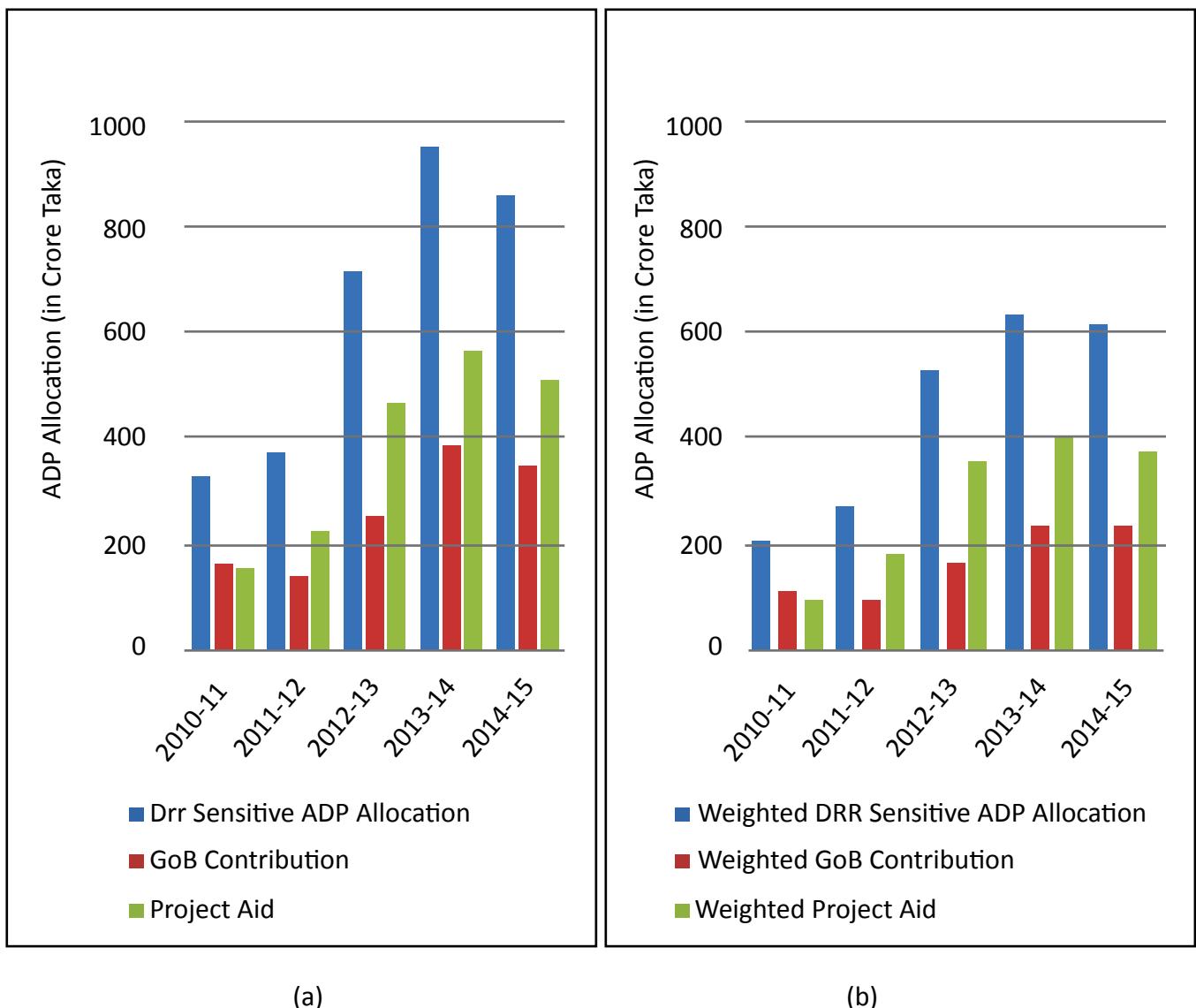


Figure 4.24: Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoLGRDC with a breakdown of resource allocation

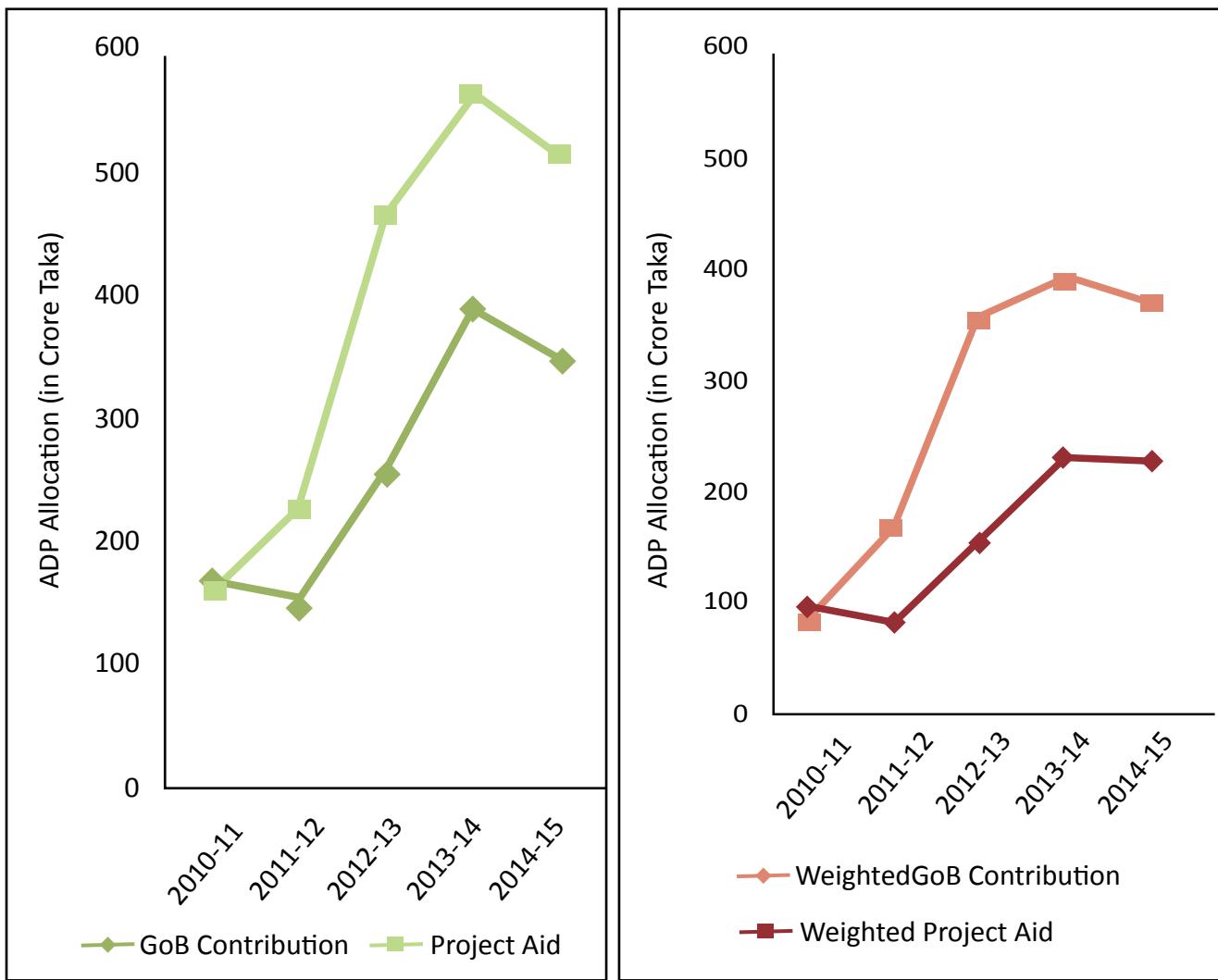


Figure 4.25: (a) Trend of GoB contribution and Project aid portion in the identified projects of MoLGRDC during 6FYP Period; (b) Weighted allocations

4.3.2 Ministry of Disaster Management and Relief (MoDMR)

The Ministry of Disaster Management and Relief (MoDMR) has been given the mandate to drive national risk reduction reform programmes. Its mission relative to this agenda is: "To achieve a paradigm shift in disaster management from conventional response and relief to a more comprehensive risk reduction culture, and to promote food security as an important factor in ensuring the resilience of communities to hazards".

DRR has been a major element of the projects of MoDMR. The main objectives of the selected projects are: to reduce the casualties of lives and property due to hazards, and achieve self-reliance and sustainable development through proper utilization of natural resources in post disaster situations.

Thirteen projects within MoDMR were identified to have explicit DRR components. Some of these projects are directly linked to DRR while there are some projects where the DRR component is embedded. The projects have been classified into 3 categories based upon DRR relevancy.

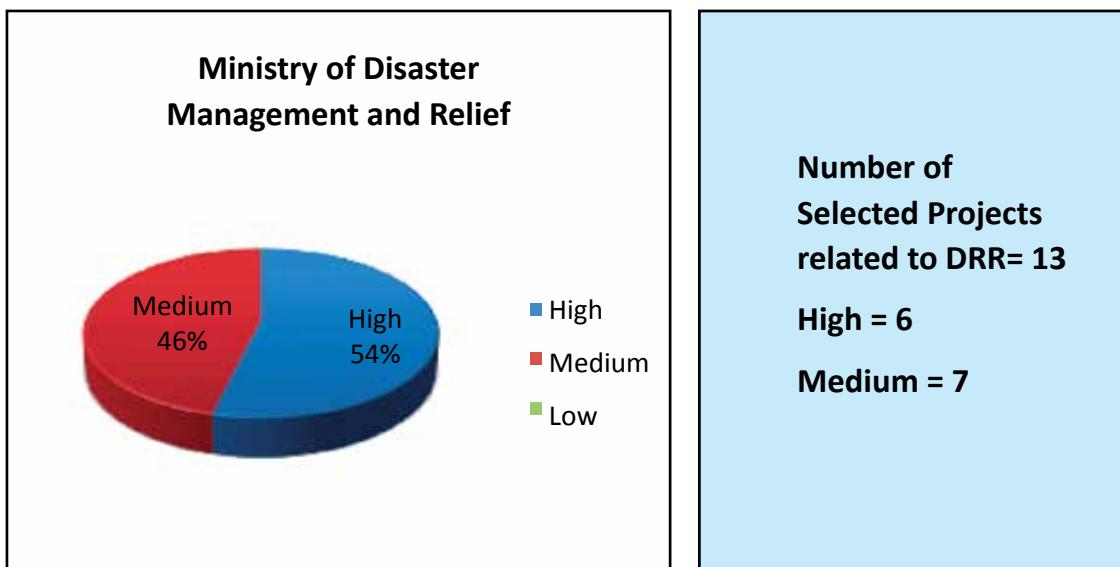


Figure 4.26: Categorization of DRR relevant project in MoDMR during 6th FYP period

It can be observed from Figure 4.26 that out of the 13 projects, six projects were highly relevant with DRR which means 70-100% of the allocation in those projects had been dedicated to DRR. MoDMR projects, therefore, are crucial for improving the resilience of the communities at risk in rural Bangladesh. The mission and vision of MoDMR addresses the issue of disaster risk reduction implicitly or explicitly. Looking into the activities of projects in the field reveals that six projects have high relevance to DRR while seven projects have medium relevance (40-69% relevance) with DRR.

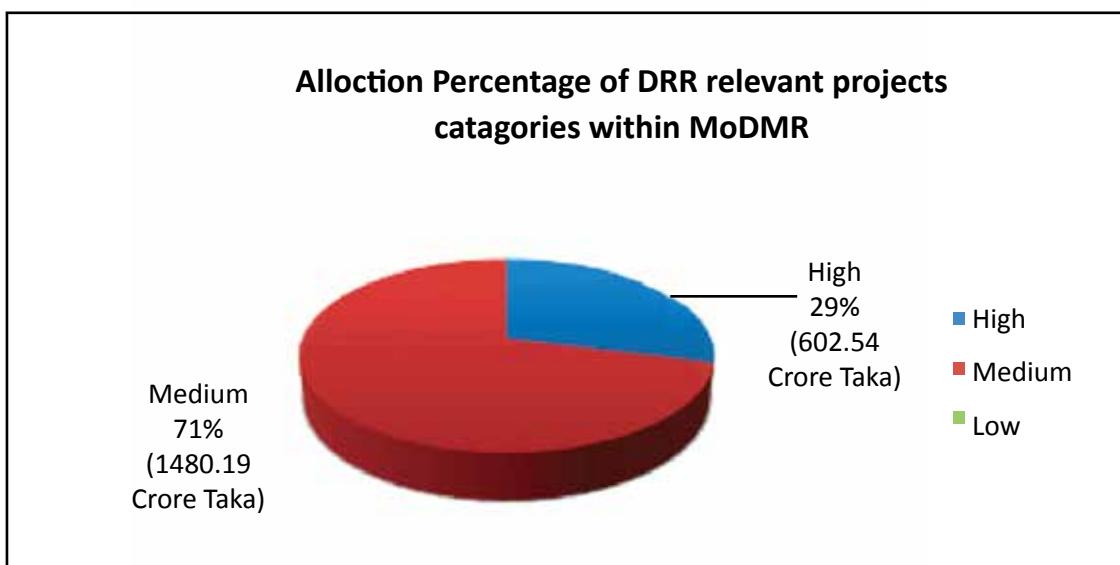


Figure 4.27: Allocation percentage for DRR relevant project categories within MoDMR during 6th FYP period

Percentage of monetary allocation from the selected 13 projects has been depicted in Figure 4.27. Although the count shows 54%, 46% and 0% for High, Medium and Low DRR relevance investments respectively among the 13 projects, in terms of monetary allocations, the percentages are 29%, 71% and 0% respectively.

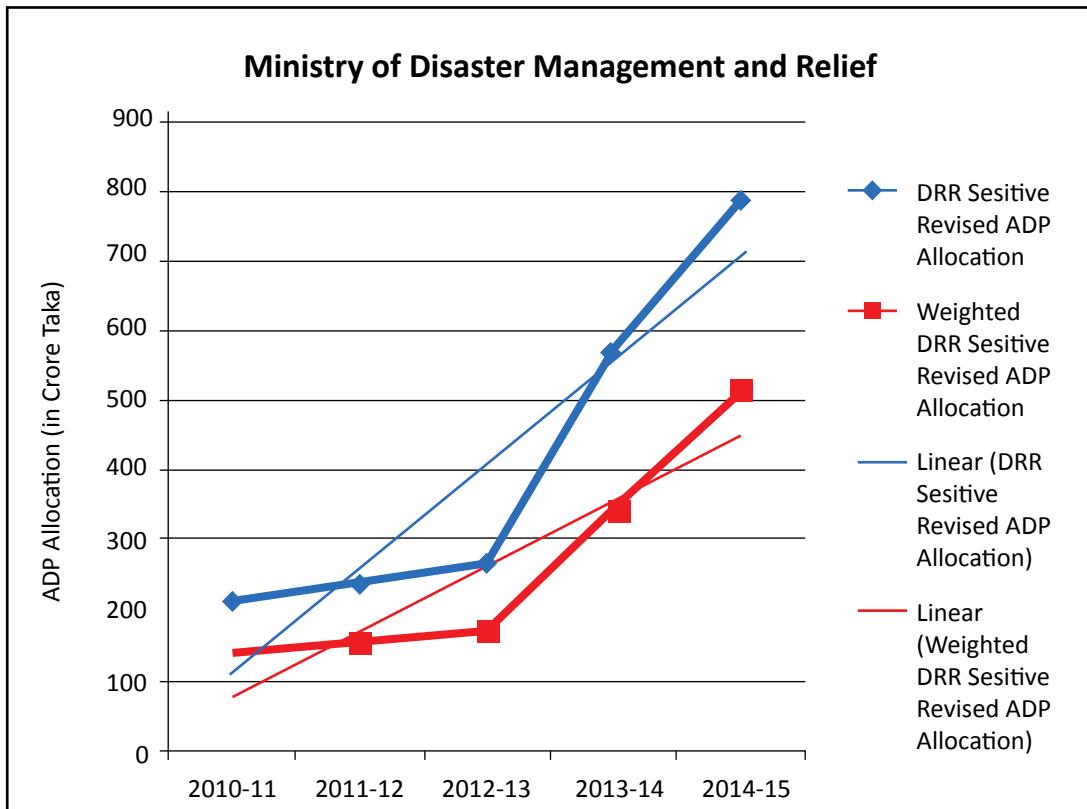


Figure 4.28: Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoDMR during 6th FYP period

The figure above illustrates year-wise distribution of DRR sensitive ADP allocations as well as weighted DRR sensitive ADP allocations for the 13 projects implemented by the MoDMR during the 6th FYP period. Both the DRR sensitive ADP allocation and weighted DRR sensitive ADP allocation graphs show significant increase in trend, especially from the FY 2013. However, The DRR sensitive ADP allocations have a slightly lesser increasing trend than the actual ADP allocations. This sudden increase is due to initiation of four new projects including a megaproject titled “Construction of small Bridges/Culverts (upto 12m long) on the Rural Roads”.

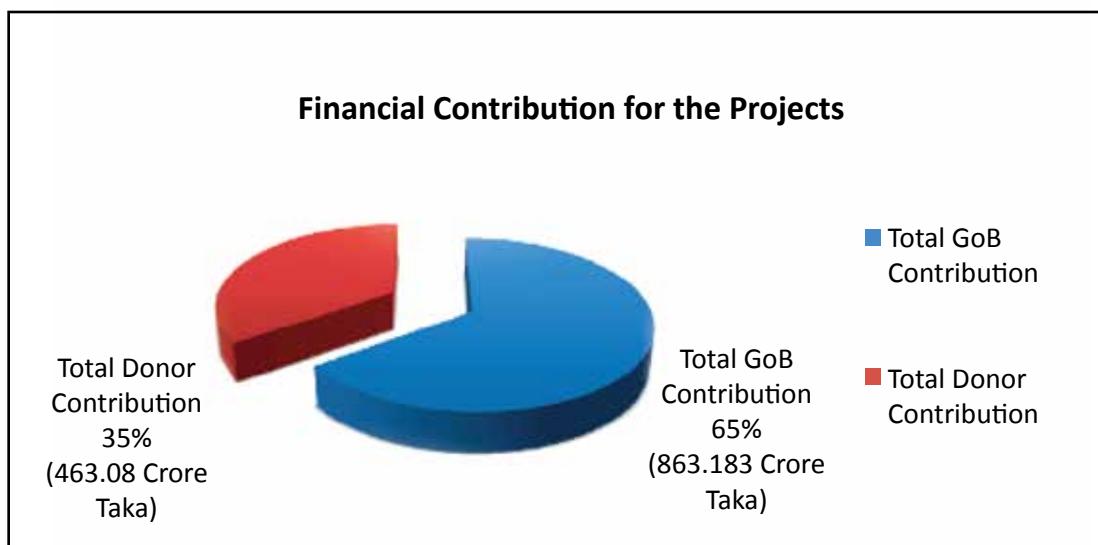


Figure 4.29: Financial contribution to DRR sensitive ADP allocation for MoDMR during 6th FYP period

The pie chart above (Figure 4.29) shows that the GoB contributed 65% of the weighted DRR-sensitive total ADP allocations for the projects totaling 863.183 Crore Taka whereas project aid contributed 35% (totaling 463.08 Crore Taka) of the finances for these 13 projects.

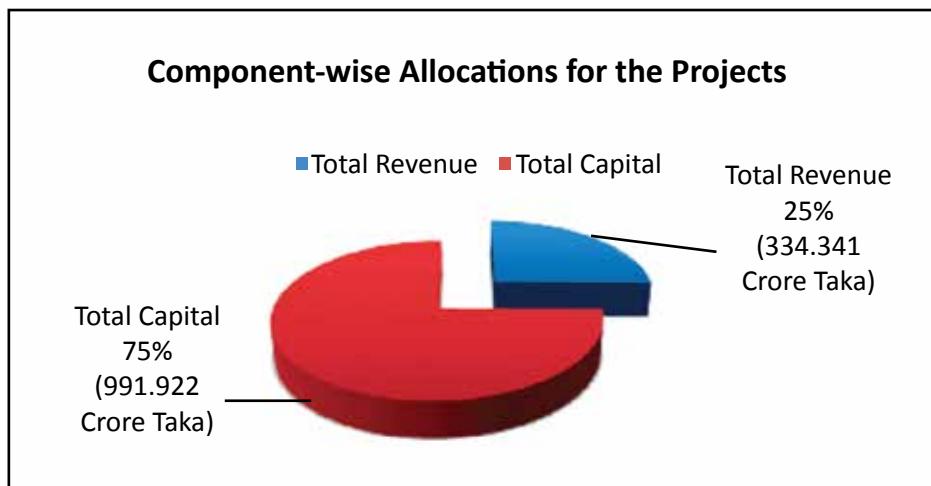


Figure 4.30: Revenue and capital components of DRR sensitive allocation for MoDMR during 6th FYP period

Figure 4.30 suggests that, among the weighted DRR sensitive total ADP allocations for the projects, 991.922 Crore Taka was allotted for capital components (75%) whereas 334.3415 Crore Taka (25%) was allotted for Revenue components of the projects.

Figure 4.31 shows year-wise DRR sensitive ADP allocation of the ministry for the identified projects along with the GoB contributions and project aid portions of the allocation. Figure 4.31b shows the weighted allocations for each year. Figure 4.32 (4.32b) shows the weighted allocations) exhibit trends of the GoB contribution and project aid for the identified projects during 6th FYP period. The graphs show a continuously increasing trend during 6th FYP period. The graphs suggest a major increase in GoB contribution on these identified projects from FY 2014 followed by project aid increase in FY 2015.

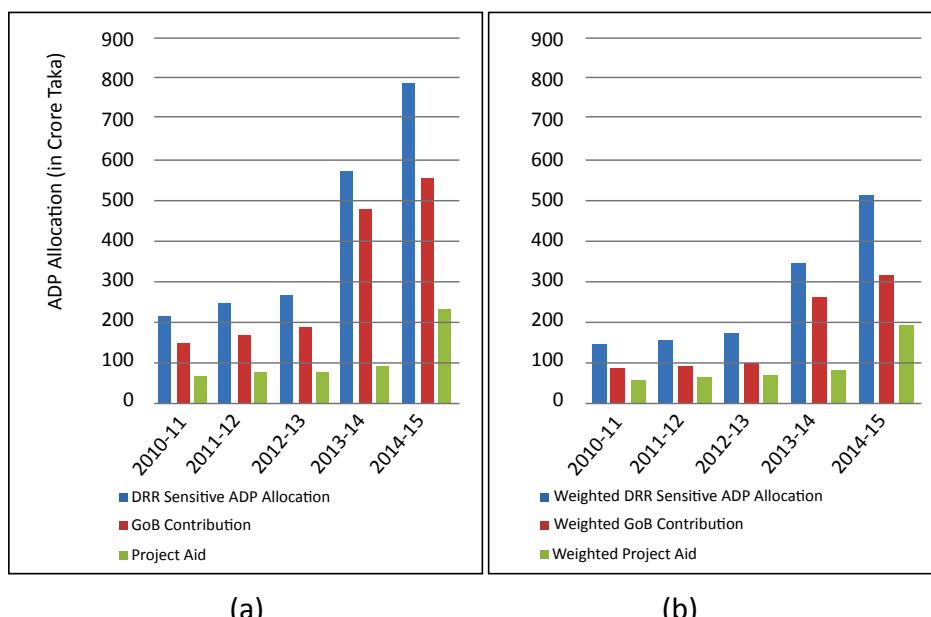


Figure 4.31: Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoDMR with a breakdown of resource allocation

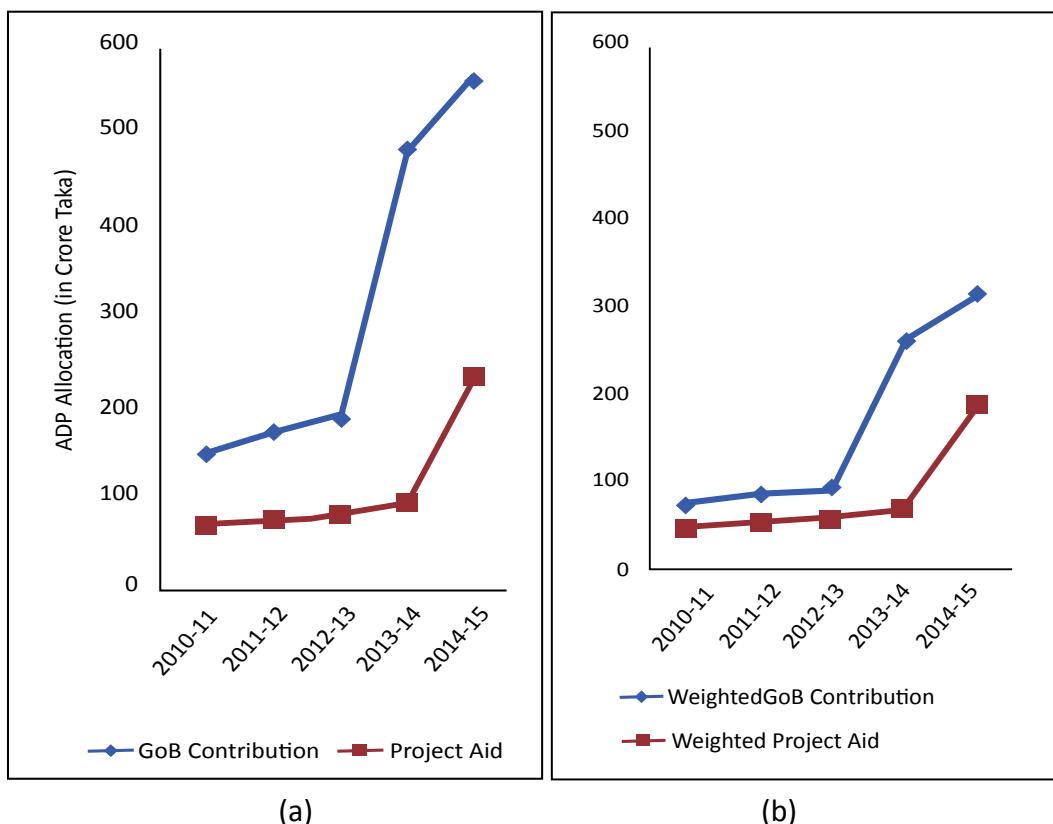


Figure 4.32: Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoDMR during 6th FYP period

4.3.3 The Ministry of Water Resources

The Ministry of Water Resources (MoWR) is the apex body of the Government of the People's Republic of Bangladesh for development and management of water resources of the country. It formulates policies, plans, strategies, guidelines, instructions and acts, rules, regulations, etc. relating to the development and management of water resources, and regulation and control of the institutions reporting to it. It prepares and implements development projects relating to flood control and drainage; flood control, drainage and irrigation; riverbank erosion control; delta development and land reclamation etc. It also provides irrigation, drainage, flood protection, bank erosion protection, land reclamation facilities by constructing barrages, regulators, sluices, canals, cross-dams, embankments and sea-dykes along the banks of the rivers and the coast, etc.

Bangladesh Water Development Board (BWDB), under the Ministry of Water Resources, is responsible for administering the flow of both surface water including rivers and waterways and ground water through water resources development and management. Disaster risk reduction (DRR) has been a major element of the projects of BWDB. Referring to the issue of DRR in BWDB projects, one official of the board said, "DRR is an embedded element in all of the projects of BWDB, either explicitly or implicitly". The respondent also mentioned that, "the BWDB was born to address the water related Disaster Risk Reduction Issues of Bangladesh".

Ninety-two projects of BWDB have been identified as related to DRR. Some of these projects are directly linked to DRR and there are also some projects where the DRR issue is embedded. The respondents of BWDB have broadly categorized the selected projects under five categories, which are analyzed here from the perspective of relevance to DRR.

Table 4.8: Types of BWDB projects and their relevance to DRR

SL	Categories of Projects	Relevance to DRR
1	Flood Control Drainage (FCD)/ Flood Control Drainage Irrigation (FCDI)	High
2	River Bank Protection	High
3	River Dredging	Medium
4	Irrigation	Low
5	Non-structural Projects	Low

The table has been prepared after weight (high, medium and low) was carefully assigned by integrating the opinions of the officials of corresponding agencies of Ministry of Water Resources. Initially selected 92 projects of BWDB (under MoWR) from the ADP which exhibited some relevance with DRR were classified into three categories (high, medium and low) based on their percentage of allocation and the above table.

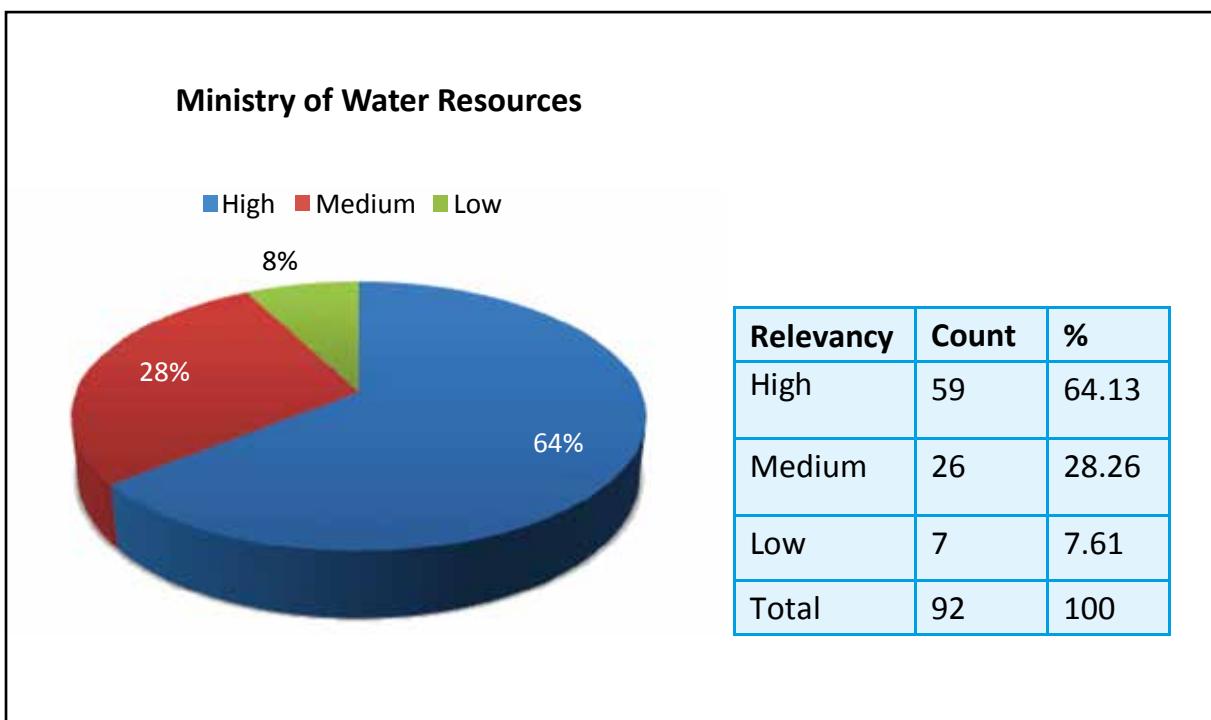


Figure 4.33: Categorization of DRR relevant project in MoWR during 6th FYP period

The table stands to explain itself. It could be observed that, out of the 92 projects, projects related to flood control and river bank protection (totaling 59) were highly relevant with DRR. This means 70-100% of the allocation in those projects was dedicated to DRR. BWDB projects, therefore, are crucial for improving the resilience of the communities at risk in rural Bangladesh. The BWDB addresses the issue of disaster risk reduction implicitly or explicitly. Looking into the activities of projects in the field reveals the truth. Projects under the River Dredging categories had medium relevance with DRR (totaling 26 of the 92 projects) and projects under the category of Irrigation and Non-Structural Project (totaling 7 among the 92 projects) had low relevance with DRR.

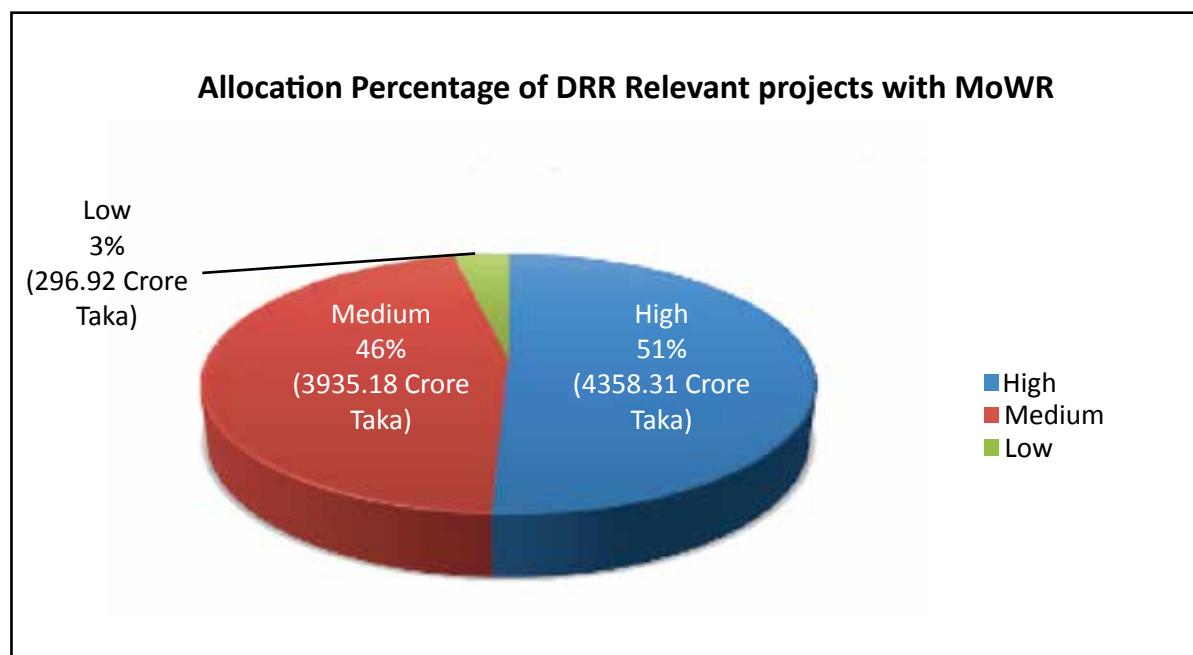


Figure 4.34: Allocation percentage for DRR relevant project categories within MoWR during 6th FYP period

Percentage of monetary allocation from the selected 92 projects are displayed in the pie chart above. Although the count shows 64%, 28% and 8% for High, Medium and Low DRR relevance investments respectively among the 92 projects, in terms of monetary allocations, the percentages are 51%, 46% and 3% respectively.

According to the respondents, the existing major challenges in the implementation of BWDB projects are:

- Climate change,
- Decrease of level and flow of waters,
- Tragedy of river-eroded people,
- Reduction of navigability of rivers due to deposit of continuously silting,
- Loss of effectiveness of old projects,
- Sufferings of coastal people due to ineffectiveness of structures caused by frequent cyclone and tidal surge along the coast line,
- Increase of salinity and stagnancy of water in the southern Bangladesh.

It was mentioned that BWDB is trying hard to overcome all these challenges successfully.

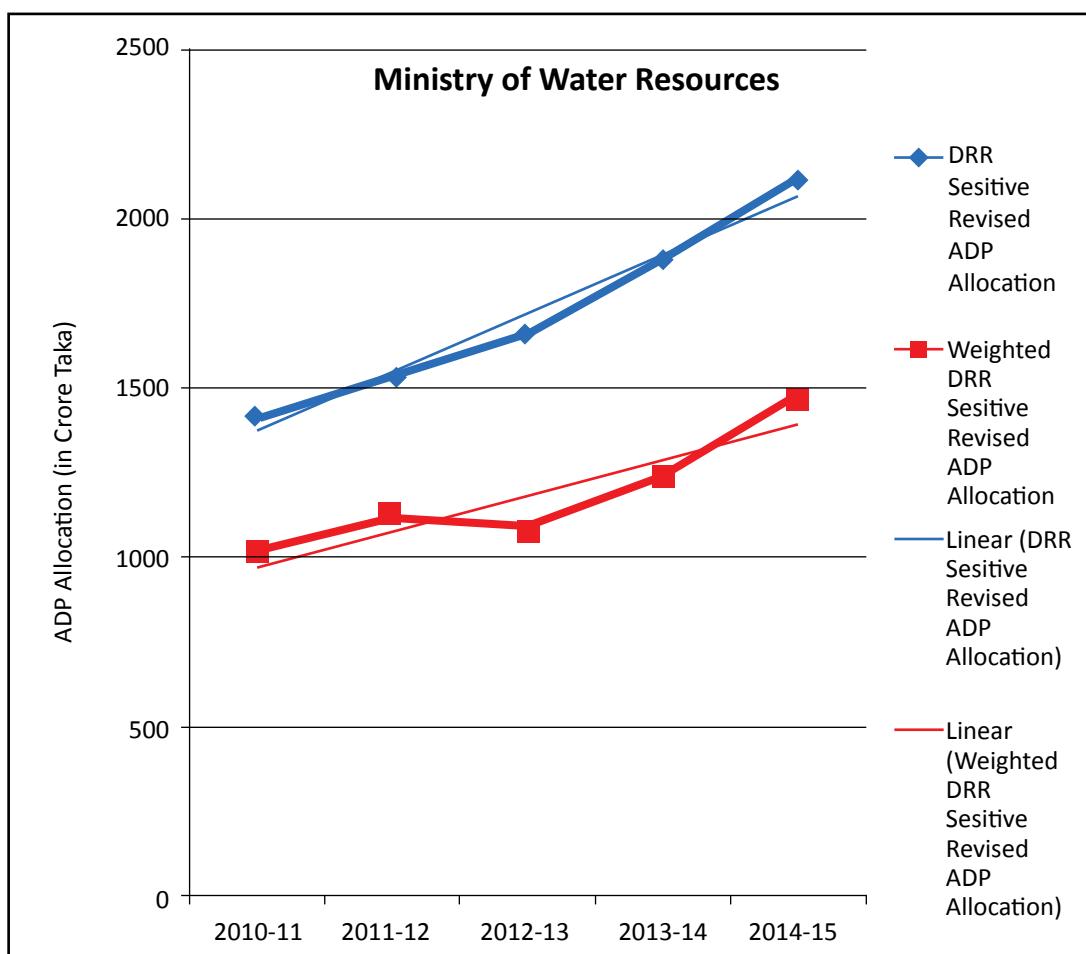


Figure 4.35: Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoWR during 6th FYP period

The graphs in figure 4.35 illustrate year-wise distribution of DRR sensitive ADP allocations as well as weighted DRR-sensitive ADP allocations for the 92 projects implemented by the MoWR. With the exception of a modest dip in FY 2013, both the DRR sensitive ADP allocations and weighted DRR sensitive ADP allocations graphs show increase in trend. However, The DRR sensitive ADP allocations have a slightly lesser increasing trend than the actual ADP allocations.

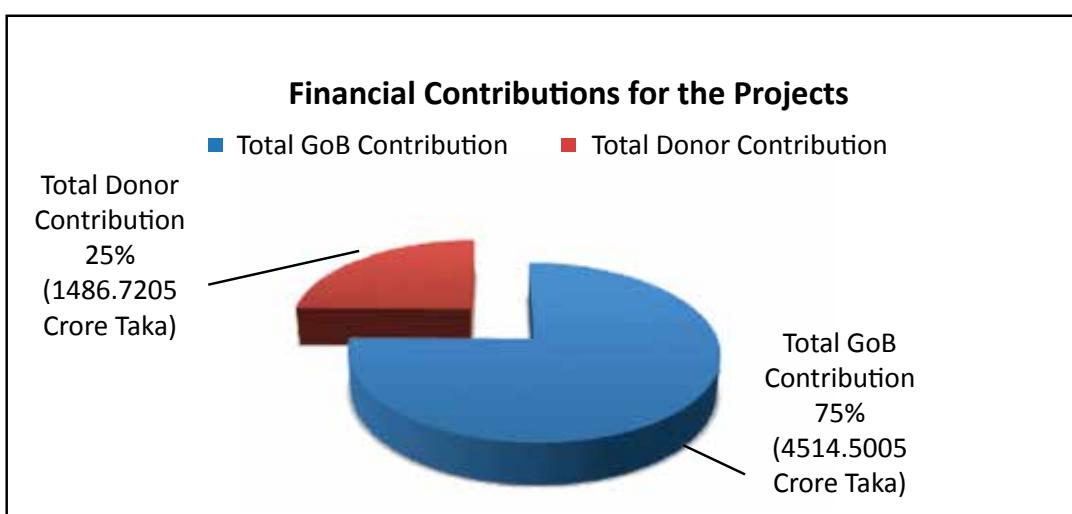


Figure 4.36: Financial contribution to DRR sensitive ADP allocation for MoWR during 6th FYP period

Figure 4.36 shows that the GoB is the main contributor with 75% of the total weighted DRR sensitive ADP allocations for the projects (totaling 4514.5005 Crore Taka) whereas project aid contributed 25% (totaling 1486.7205 Crore Taka) of the overall financial budget of these 92 projects.

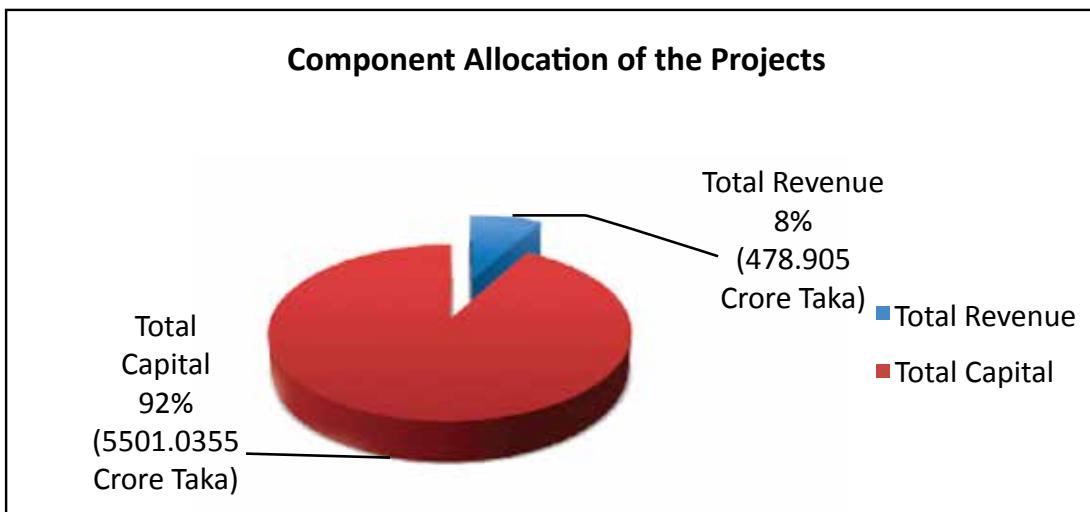


Figure 4.37: Revenue and capital components of DRR sensitive allocation for MoWR during 6th FYP period

The pie chart (Figure 4.37) shows that among the weighted DRR sensitive total ADP allocations for the projects, 5501.0355 Crore Taka was allotted for capital components (92%) whereas 478.906 Crore Taka (08%) was allotted for revenue components of the projects.

Figure 4.38 shows year-wise DRR sensitive ADP allocation of the ministry for the identified projects along with the GoB contributions and project aid portions of the allocation. Figure 4.38b shows the weighted allocations for each year. Figure 4.39 (4.39b shows the weighted allocations) portrays trends of the GoB contribution and project aid for the identified projects during 6th FYP period. The graphs show an overall continuous increase in trend (barring FY 2013) of the both GoB and project aid allocation in MoWR during 6th FYP period.

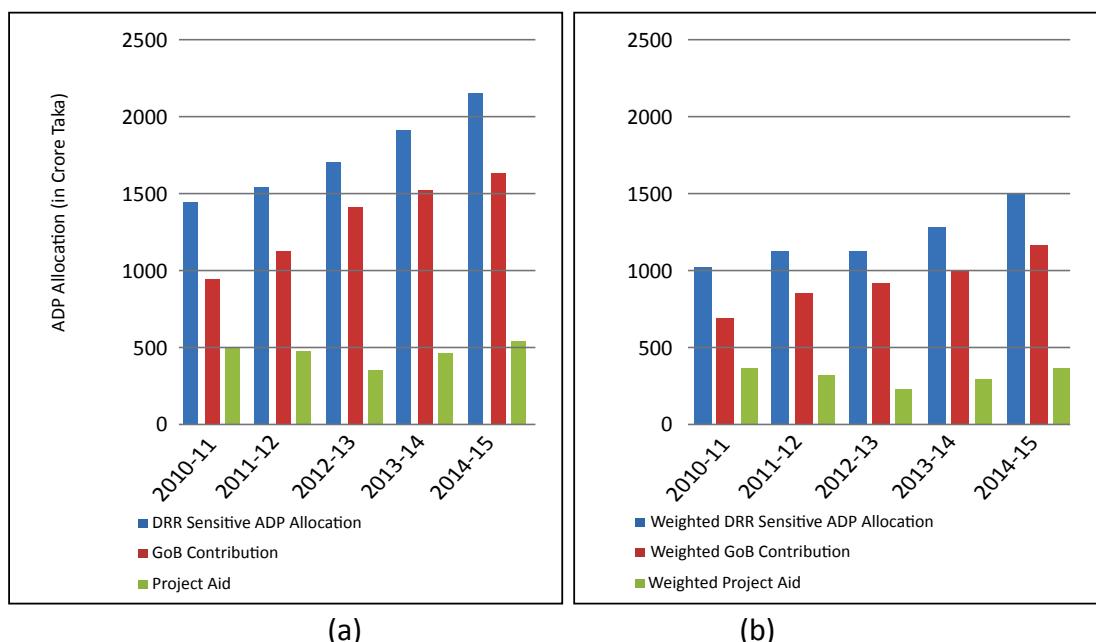


Figure 4.38: Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoWR with a breakdown of resource allocation

The sudden decrease in trend in project aid contribution in FY 2013, as seen in Figure 4.39, is due to completion of the project titled “Secondary Towns Integrated Flood Protection Project, Phase-2”. The project aid trends saw an increase again from FY 2014 due to the initiation of project titled “Blue Gold Program (BWDB Component)” in FY 2014 and major increase in the project assistance of the project titled “Emergency 2007 Cyclone Recovery and Restoration Project (ECRRP) (BWDB Part)” in FY 2015.

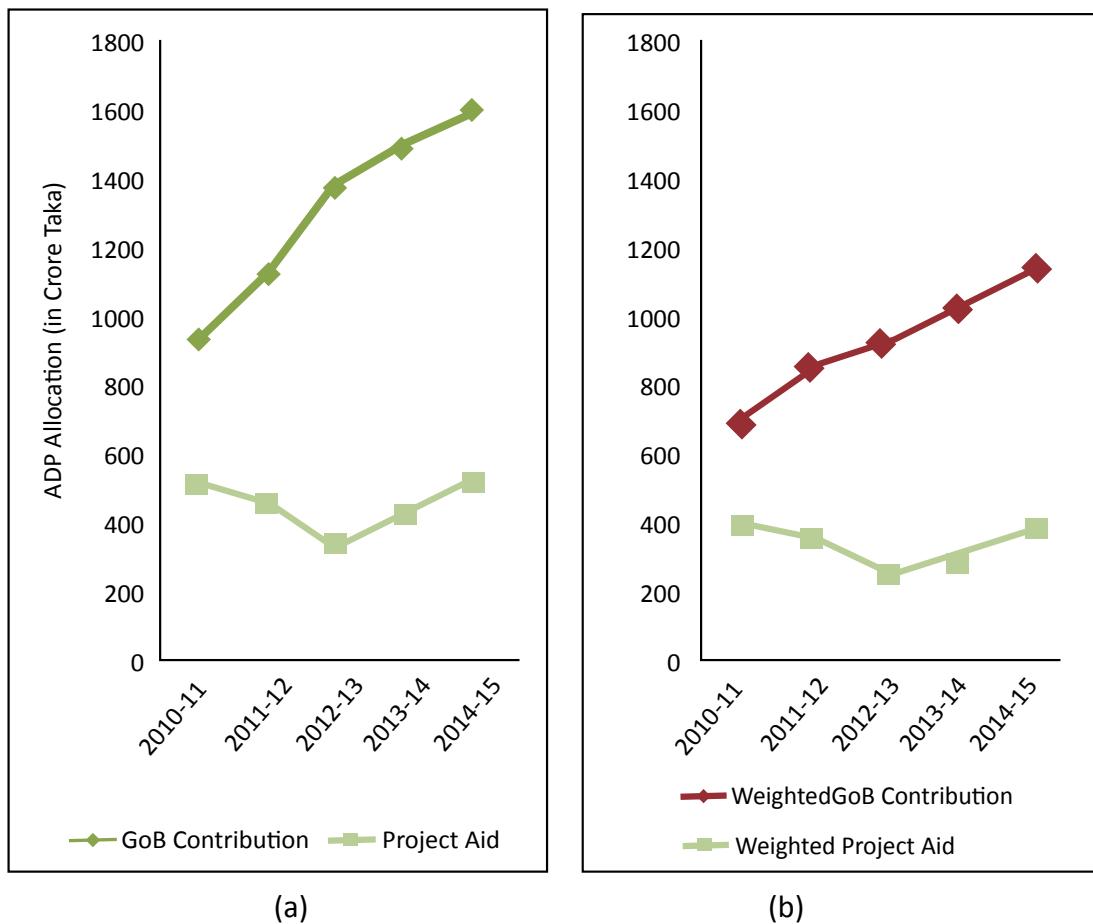


Figure 4.39: Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoWR during 6th FYP period

4.3.4 Ministry of Housing and Public Works (MoHPW)

The ministry of Housing and Public Works (MoHPW) is working towards sustainable development through its vision of utmost utilization of lands to provide the country's low and medium income population sustainable, safe and affordable housing, develop planned urbanization and build governmental infrastructures through proper planning and research.

The Standing Orders on Disaster (SOD, 2010) issued by GoB has issued the following responsibilities to MoHPW in terms of disaster risk reduction:

- Designate one responsible person in the Ministry as the focal point for Disaster Management Affairs.
- Ensure participation in all disaster management committee's meetings starting from National to Upazila level for planning, rescue, evacuation and rehabilitation works.
- Undertake a sectoral risk assessment initiative with a view to develop a plan of action.
- Issue directives to ensure proper execution of the Bangladesh National Building Code (BNBC).
- Develop policies and procedures for funding repairs and reconstruction of government infrastructure, facilities and structures in hazard impact areas.

- Ensure post hazard impact and risk assessment issues are considered in any reconstruction activities.
- Develop and implement a training programme for its staff at different levels on disaster risk reduction in the housing and public works sector.
- Establish a strong monitoring system to monitor the quality of construction works of the government and in the private sector.
- Prepare a contingency plan for the ministry as a whole to handle any disastrous situation involving all its divisions and field offices.
- Ensure budgetary provision for all kinds of initiatives and responses.
- Establish a risk reduction communication system within and across the ministry.
- Prepare and periodically update the agency contingency plan.
- Prepare a full-fledged earthquake related BNBC and take necessary measure to ensure its proper execution.
- To mitigate earthquake risks in the construction and urban planning, arrange training programmes for government engineers, planners and the architects on infrastructure and urban planning.
- Work with the Geological Survey of Bangladesh to identify earthquake risks and ensure involvement of specialist engineers in the reconstruction works of the affected areas.

The Ministry has different agencies working towards its goals. These are Public Works Department (PWD), Urban Development Authority (RAJUK, CDA, KDA, RDA and NHA), House Building Research Institute (HBRI), Urban Development Directorate (UDD).

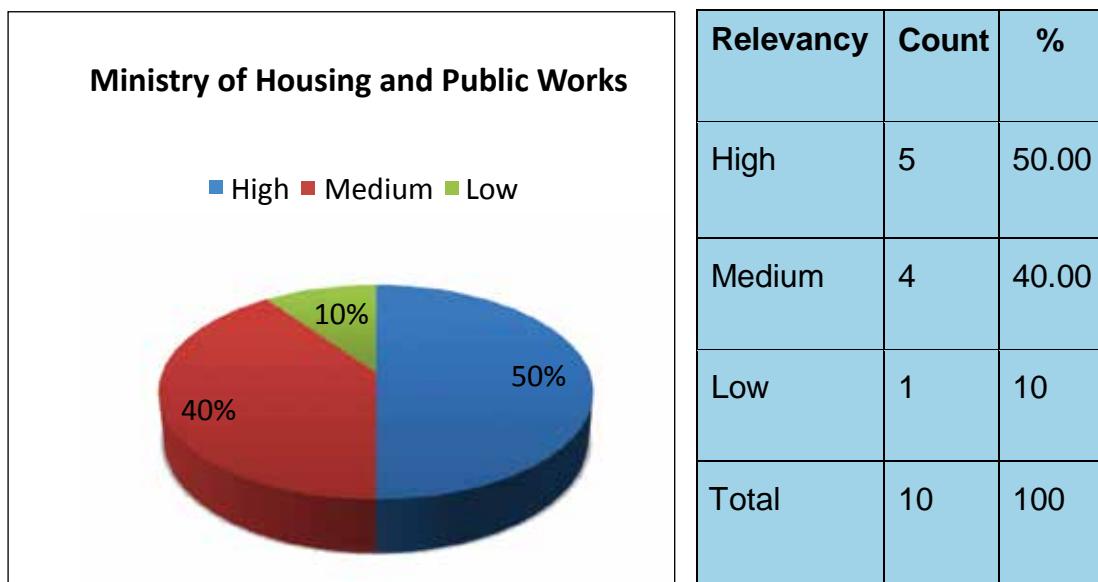


Figure 4.40: Categorization of DRR relevant project in MoHPW during 6th FYP period

Ten projects of MoHPW were initially selected from the ADP, which exhibited relevance to DRR. The table in Figure 4.40 was prepared after weight (high, medium and low) was carefully assigned by integrating the opinions of the officials of corresponding agencies of MoHPW with the expert knowledge of the research team. It can be seen that, out of the initially selected 10 projects, five were highly relevant with DRR which means 70-100% of the allocation in those projects had been dedicated to DRR. The mission and vision of MoHPW do address the issue of disaster risk reduction implicitly or explicitly. Among the rest of the projects, four had medium relevance (40-69% relevance) with DRR whereas one project had low relevance to DRR.

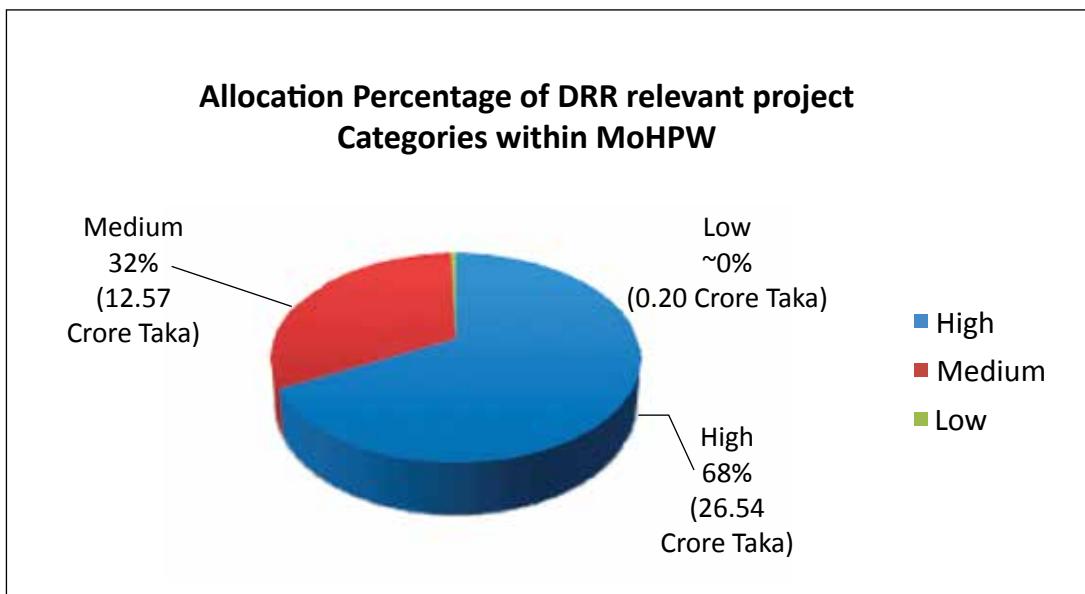


Figure 4.41: Allocation percentage for DRR relevant project Categories within MoHPW during 6th FYP period

Percentage of monetary allocation from the selected 10 projects is depicted in the pie chart (Figure 4.41). Although the count shows 50%, 40% and 10% for high, medium and low DRR relevance investments, respectively among the 10 projects, in terms of monetary allocations, the percentages are 68%, 32% and ~0%, respectively.

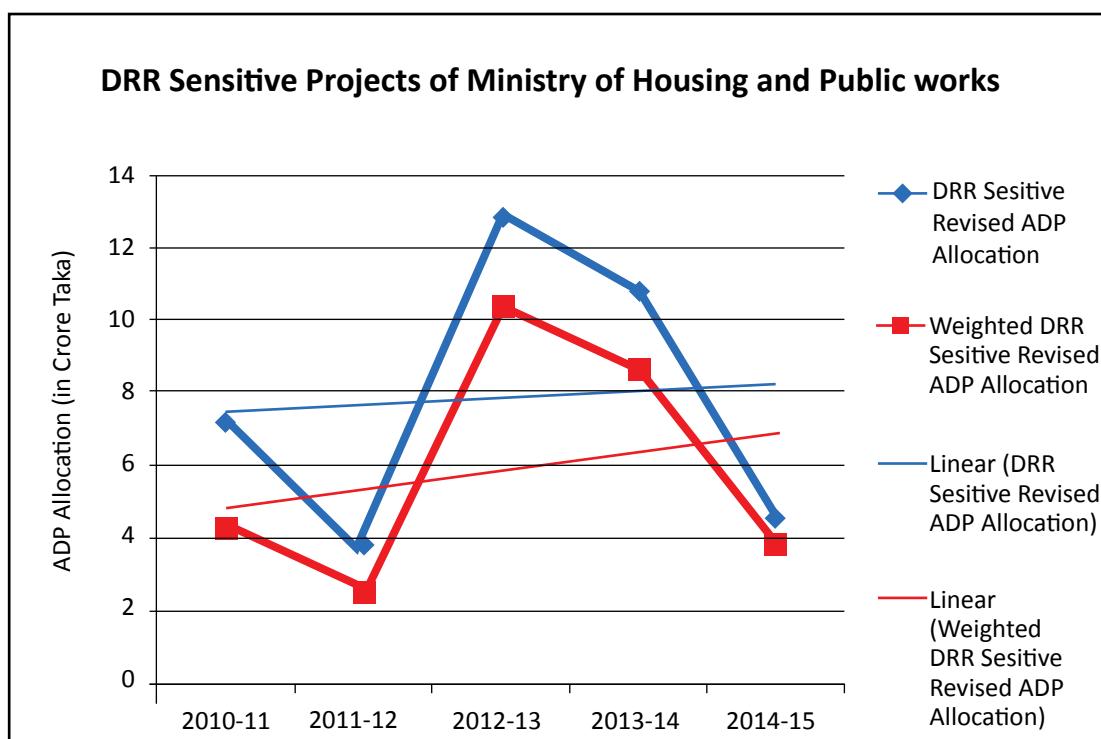


Figure 4.42: Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoHPW during 6th FYP period

The figure illustrates year-wise distribution of DRR sensitive ADP allocations as well as weighted DRR sensitive revised ADP allocations for the 10 projects implemented by the MoHPW. Both revised DRR-sensitive ADP allocation and weighted DRR-sensitive ADP allocations graphs for the 10 projects show variations in allocations over the years but an overall slight increase in trends. However, DRR-sensitive ADP allocations have a slightly higher increasing trend than the actual ADP allocations for the 10 projects. The major increase in trend observed in FY 2013 was due to the initiation of a project implemented by Public Works Department, namely “Capacity Development on Natural Disaster Resilient Techniques of Construction and Retrofitting for Public Buildings”, the allocation of which is decreased over the years. This decrease in allocation along with the completion of most of the other identified DRR sensitive projects are the main cause of the decreasing trend from FY 2014.

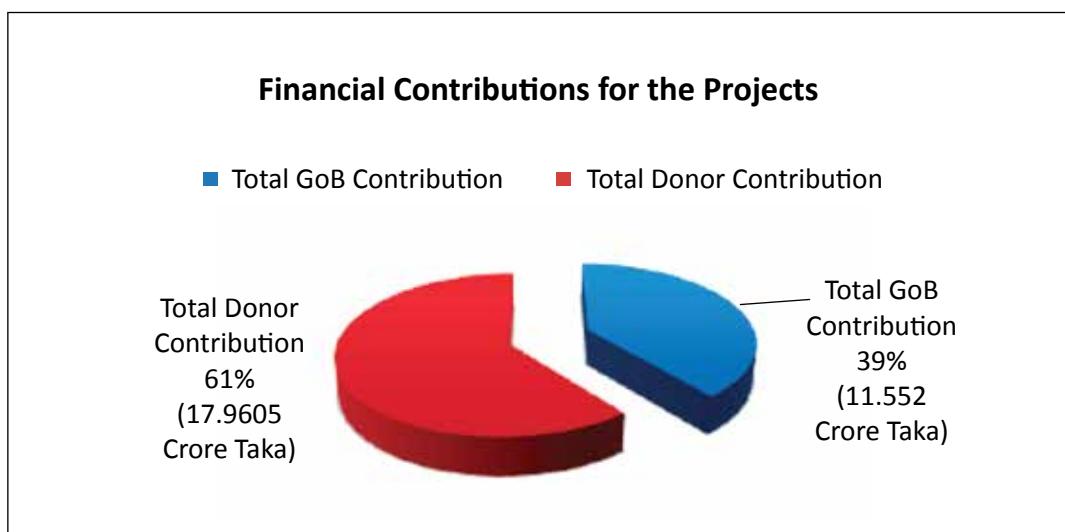


Figure 4.43: Financial contribution to DRR sensitive ADP allocations for MoHPW during 6th FYP period

The pie chart (Figure 4.43) shows that the GoB contributed 39% of the weighted DRR-sensitive total ADP allocations for the projects (totaling 11.552 Crore Taka) whereas project aid contributed 61% (totaling 17.9605 Crore Taka) of the finances for these projects during the 6th FYP period.

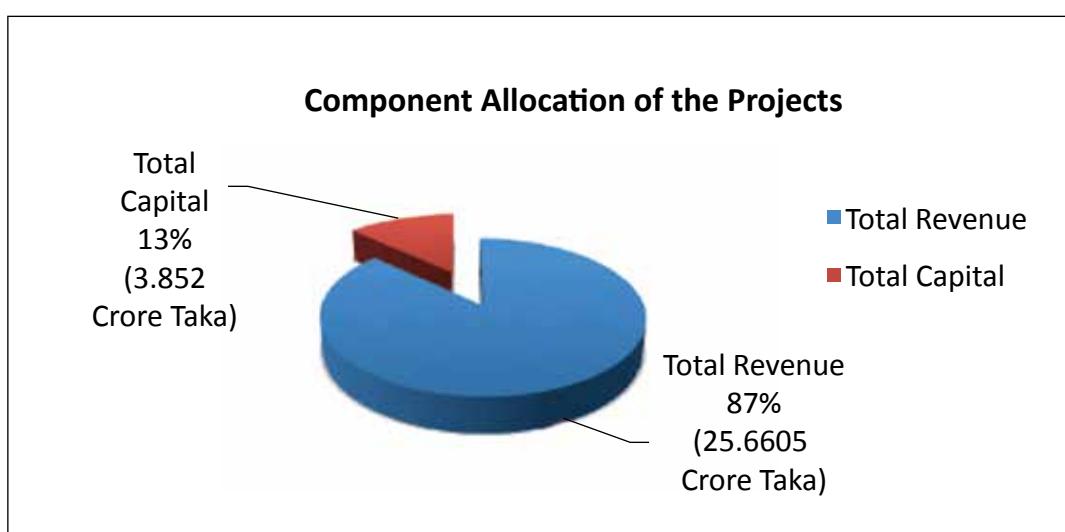


Figure 4.44: Revenue and capital components of DRR sensitive allocation for MoHPW during 6th FYP period

The pie chart (Figure 4.44) shows that among the weighted total DRR sensitive ADP allocations for the projects, only 3.852 Crore Taka was allotted for capital components (13%) whereas 25.6605 Crore Taka (87%) was allotted for revenue components of the projects.

Figure 4.45 shows year-wise DRR sensitive ADP Allocation of the ministry for the identified projects along with the GoB contributions and project aid components of the allocation. Figure 4.45b shows the weighted allocations for each year. Figure 4.46 (4.46b shows the weighted allocations) demonstrates the trends of the GoB contribution and project aid for the identified projects during 6th FYP period. The graphs show that there was no project aid in the first two years during 6th FYP period. Generally, the graphs show decrease in trend of both project aid and GoB contribution for the identified projects.

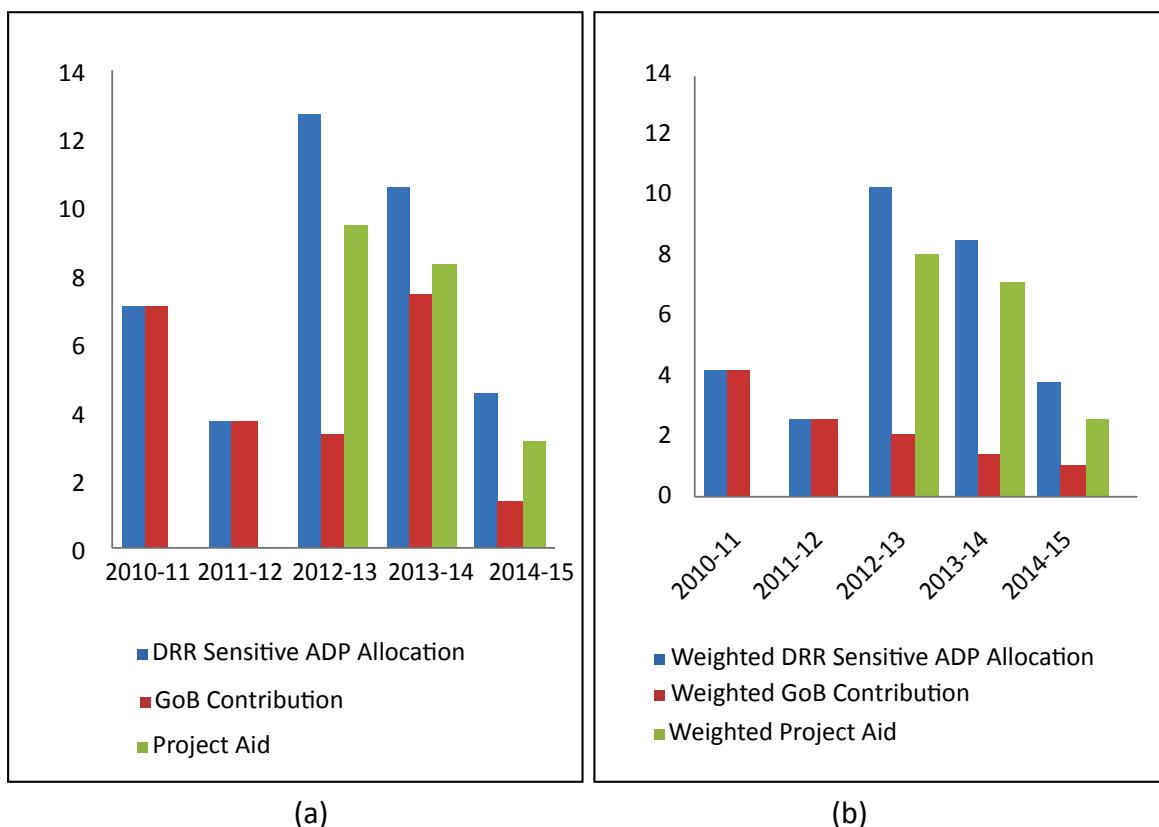


Figure 4.45: Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoHPW with a breakdown of resource allocation

The identified DRR Sensitive projects of MoHPW during 6th FYP period were government-funded and there were no project aid in FY 2011- FY 2012. However, with the initiation of the project titled “Capacity Development on Natural Disaster Resilient Techniques of Construction and Retrofitting for Public Buildings”, which was almost entirely funded by project aid, the trend of project aid had a significant increase in FY 2013 and a continuous decrease in trend with the decreased allocation for the project was observed.

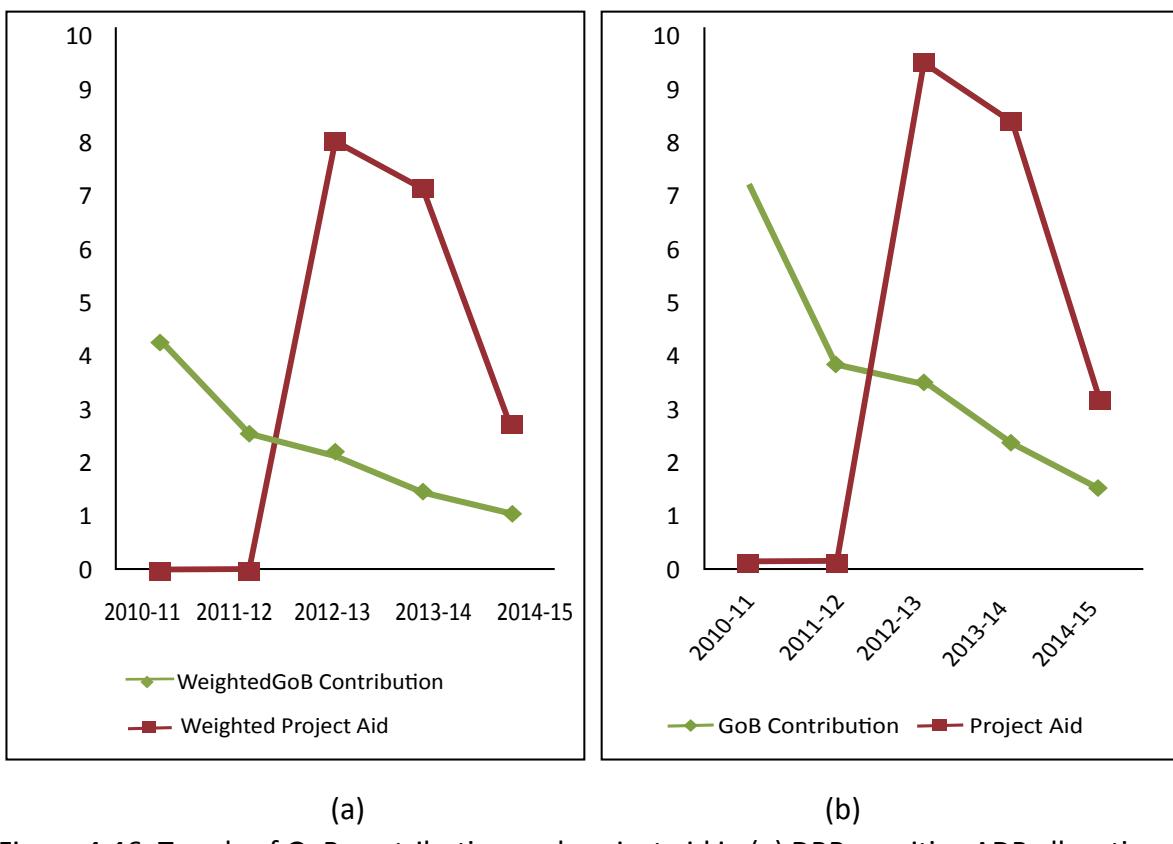


Figure 4.46: Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoHPW during 6th FYP period

4.3.5 Ministry of Environment & Forests (MoEF)

The Ministry of Environment & Forests is the nodal agency in the administrative structure of GoB for the planning, promotion, co-ordination and overseeing the implementation of environmental and forestry programmes. MoEF oversees all environmental matters in the country and is a permanent member of the Executive Committee of the National Economic Council.

The Ministry also plays a pivotal role as a participant of United Nations Environment Programme (UNEP). The principal activities undertaken by Ministry of Environment & Forests consist of conservation & survey of flora, fauna, forests and wildlife, prevention & control of pollution, forestation & regeneration of degraded areas and protection of environment, in the framework of legislations.

Apart from two major departments, i.e., Department of Environment and Department of Forest, working under this Ministry, there are four others: Bangladesh Forest Research Institute (BFRI), Bangladesh National Herbarium (BNH), Bangladesh Forest Industries Development Corporation (BFIDC), Bangladesh Climate Change Trust (BCCT).

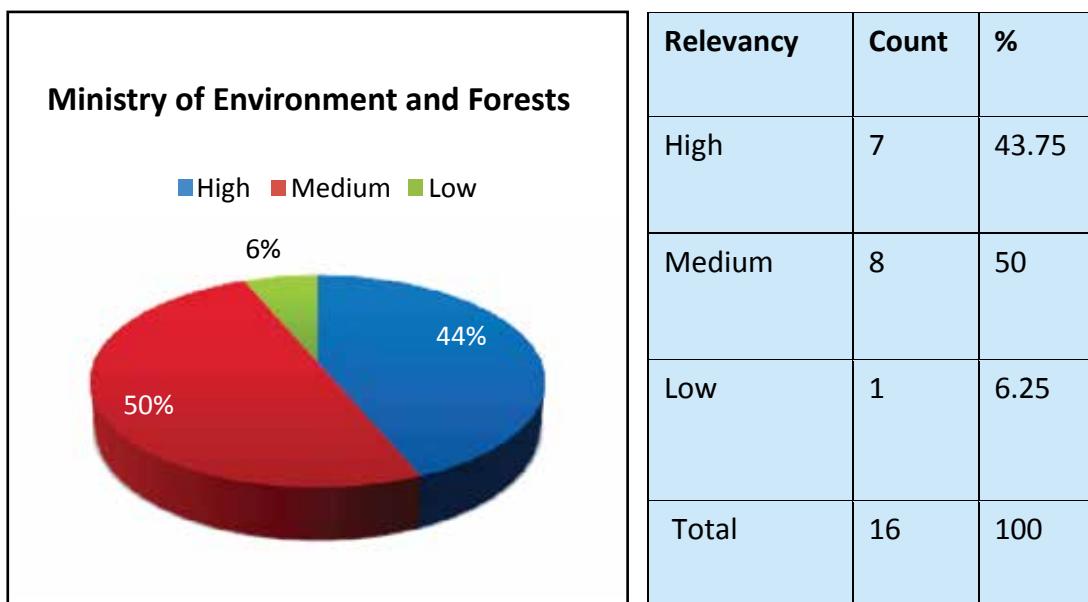


Figure 4.47: Categorization of DRR relevant projects in MoEF during 6th FYP period

Initially 16 projects of MoEF were selected from the ADP, which exhibited relevance with DRR. After receiving the feedback of officials of corresponding agencies of MoEF, the initially selected projects were classified into three categories (high, medium and low) based upon the percentage of allocation.

It was observed that, out of the 16 projects, seven were highly relevant to DRR which means 70%-100% of the allocation in those projects had been dedicated to DRR. MoEF projects, therefore, are crucial for improving the resilience of the communities at risk in rural Bangladesh. Also, eight projects have medium relevance (40%-69% relevance) to DRR whereas one project showed low relevance to DRR.

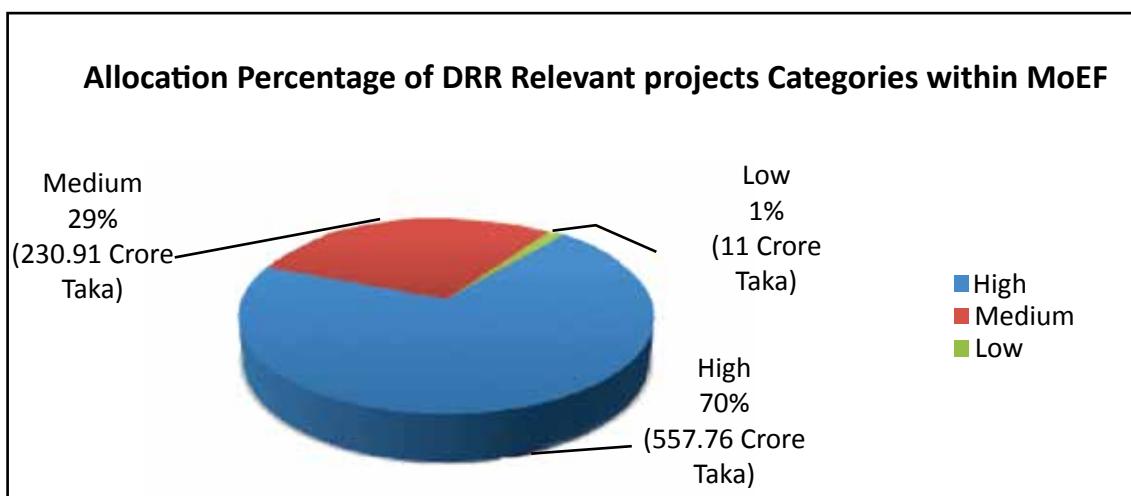


Figure 4.48: Allocation percentage for DRR relevant project categories within MoEF during 6th FYP period

Percentage of monetary allocation from the selected 16 projects has been depicted in the pie chart (Figure 4.48). 75% of the money is exclusively used to address disaster risk reduction¹. Although the count shows 44%, 50% and 6% for high, medium and low DRR relevance investments respectively among the 16 projects, in terms of monetary allocations, the percentages are 70%, 29% and 1% respectively.

¹See Table 4.7

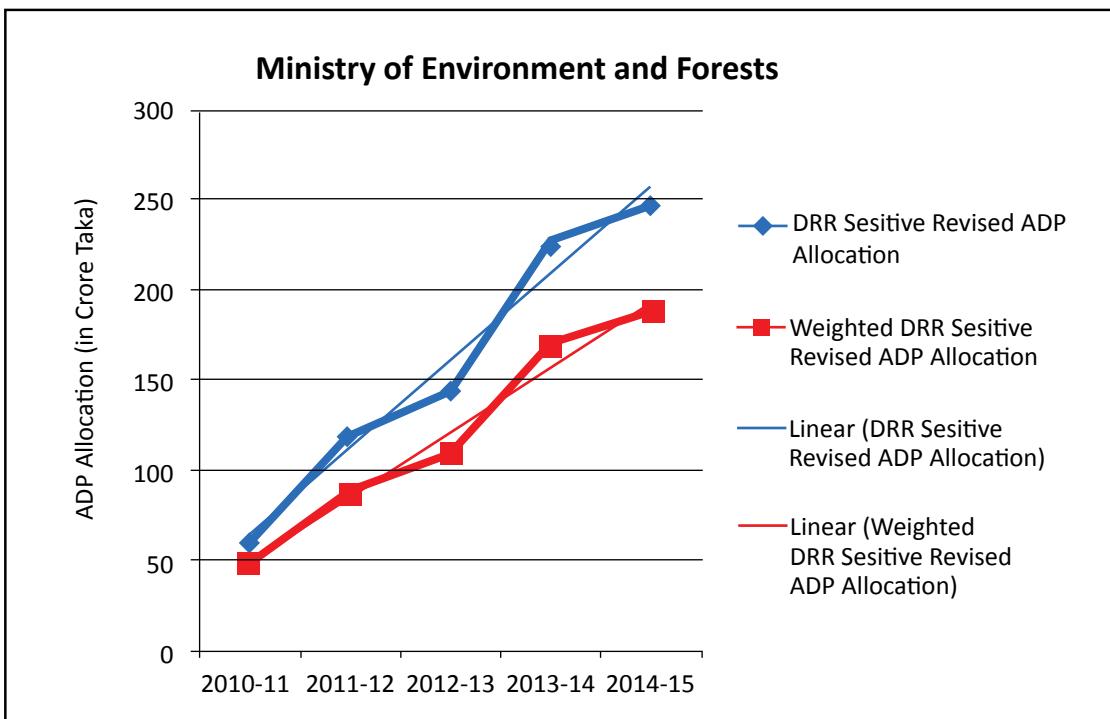


Figure 4.49: Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoEF during 6th FYP period

Figure 4.49 depicts year-wise distribution of DRR sensitive ADP allocations as well as weighted DRR sensitive revised ADP allocations for the 16 projects implemented by the MoEF. The graphs for both the DRR sensitive ADP allocation and weighted DRR sensitive ADP allocations for the projects show steady and significant increase in trends. However, The DRR sensitive ADP allocations have a slightly lesser increasing trend than the actual ADP allocations for the 16 projects.

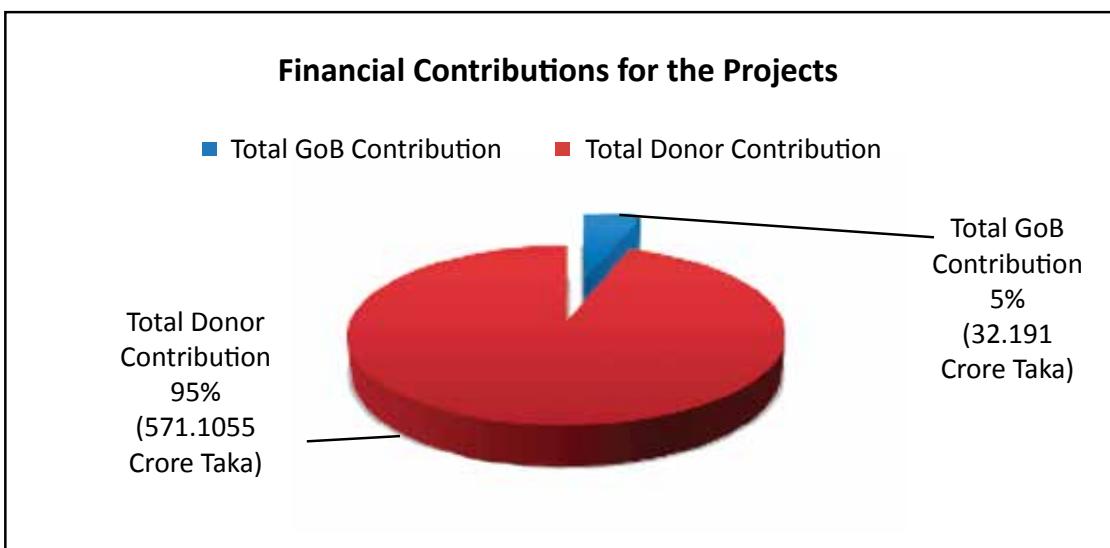


Figure 4.50: Financial contribution of DRR sensitive ADP Allocation for MoEF during 6th FYP period

The pie chart (Figure 4.50) shows that the GoB contributed only 5% of the weighted DRR sensitive total ADP allocations for the projects totaling 32.191 Crore Taka whereas project aid contributed 95% (totaling 571.1055 Crore Taka) of the finances of these projects.

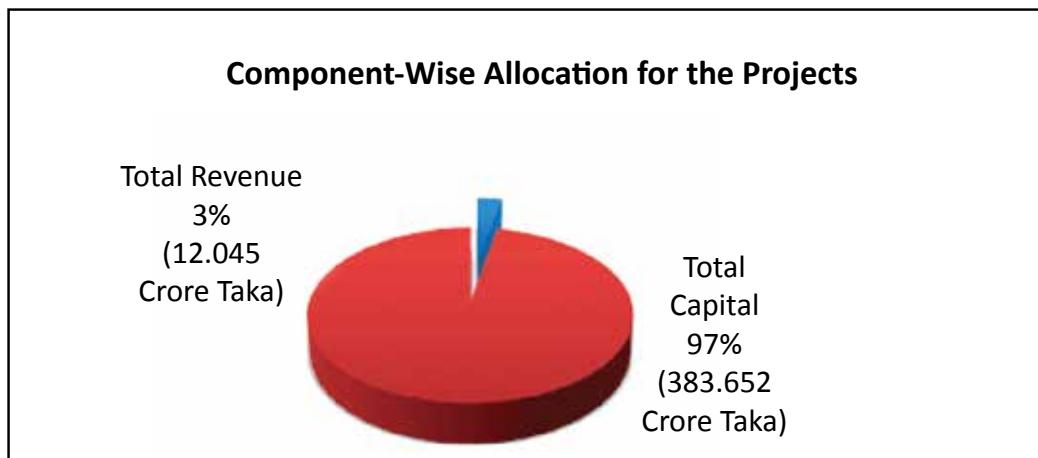


Figure 4.51: Revenue and capital components of DRR-sensitive ADP allocation for MoEF during 6th FYP period

Figure 4.51 shows that among weighted total DRR sensitive ADP allocations for the projects, almost 383.652 Crore Taka (97%) was allotted for capital components whereas 12.045 Crore Taka (3%) was allotted for revenue components of the projects.

Figure 4.52 illustrates year-wise DRR sensitive ADP Allocation of the ministry for the identified projects along with the GoB contributions and project aid portions of the allocation. The figure 4.52b shows the weighted allocations for each year. Figure 4.53 (4.53b shows the weighted allocations) demonstrates trends of the GoB contribution and project aid for the identified projects during 6th FYP period. The graphs show continuous increase in project aid and overall allocation of the identified projects in MoEF during the 6th FYP period. The GoB contributions in these projects are very low compared to project aid and show somewhat decreasing trend during the 6th FYP period.

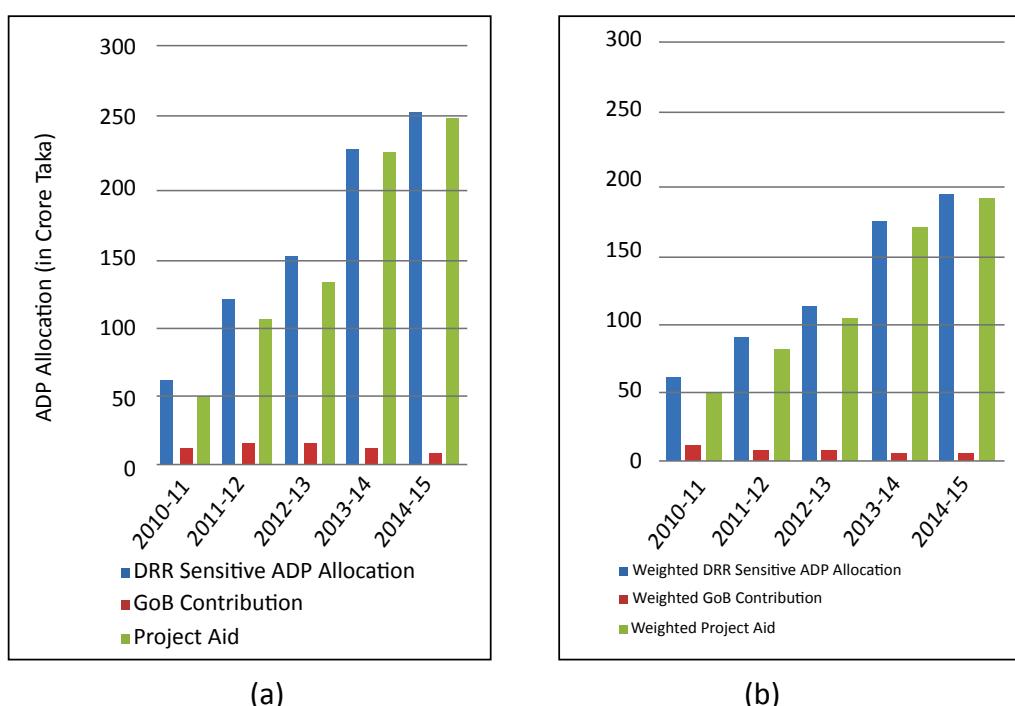
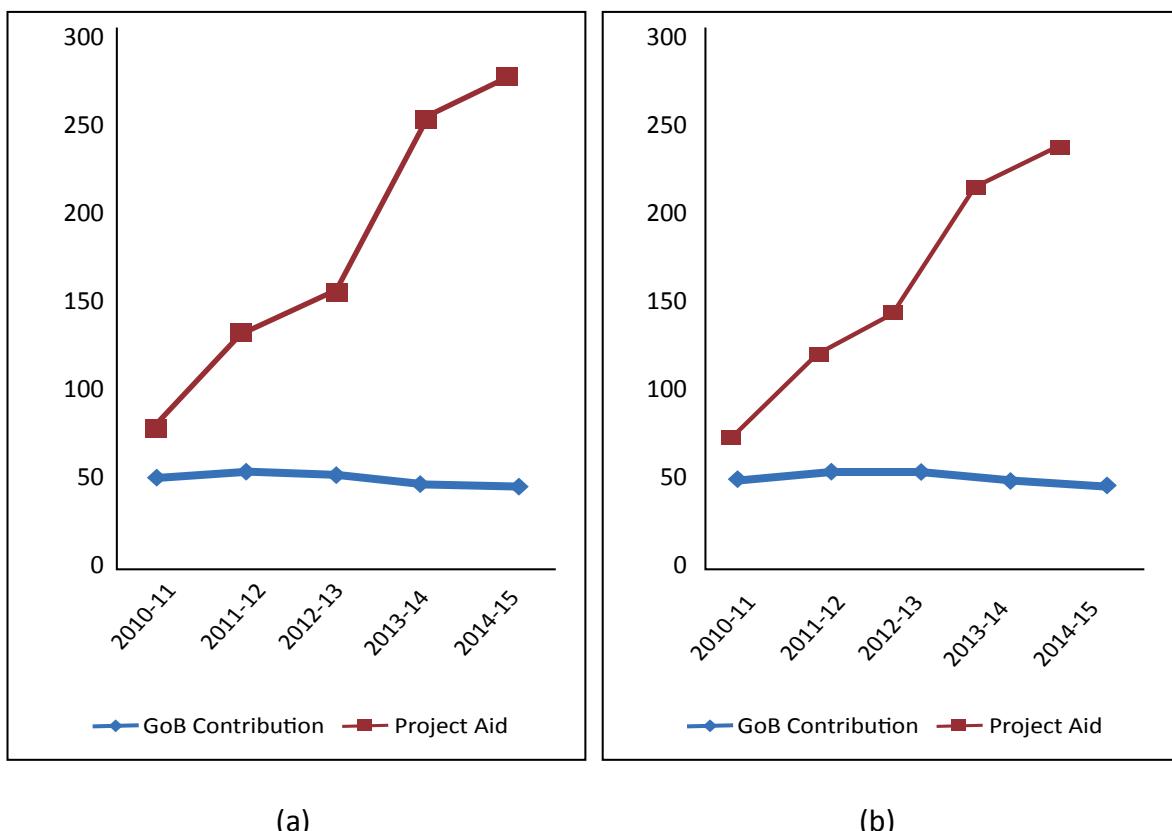


Figure 4.52: Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoEF with a breakdown of resource allocation



(a)

(b)

Figure 4.53: Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoEF during 6th FYP period

4.3.6 Ministry of Agriculture (MoA)

The Ministry of Agriculture (MoA) is one of the key ministries of the Government of the People's Republic of Bangladesh. It comprises seven wings with responsibilities of policy formulation, planning, monitoring and administration. Sixteen agencies operate under this ministry, which are responsible for implementation of different projects and plans of MoA.

- Department of Agricultural Extension (DAE)
- Bangladesh Agricultural Development Corporation (BADC)
- Bangladesh Agricultural Research Council (BARC)
- Bangladesh Agricultural Research Institute (BARI)
- Bangladesh Rice Research Institute (BRRI)
- Bangladesh Jute Research Institute (BJRI)
- Bangladesh Sugarcrop Research Institute (BSRI)
- Bangladesh Institute of Nuclear Agriculture (BINA)
- Cotton Development Board (CDB)
- Agricultural Information Services (AIS)
- Department of Agricultural Marketing (DAM)
- Seed Certification Agency (SCA)
- BARIND Multi Purpose Development Authority (BMDA)
- Bangladesh Institute of Research and Training on Applied Nutrition (BIRTAN)
- Soil Resource Development Institute (SRDI)
- Horticulture Export Development Foundation (Hortex Foundation)

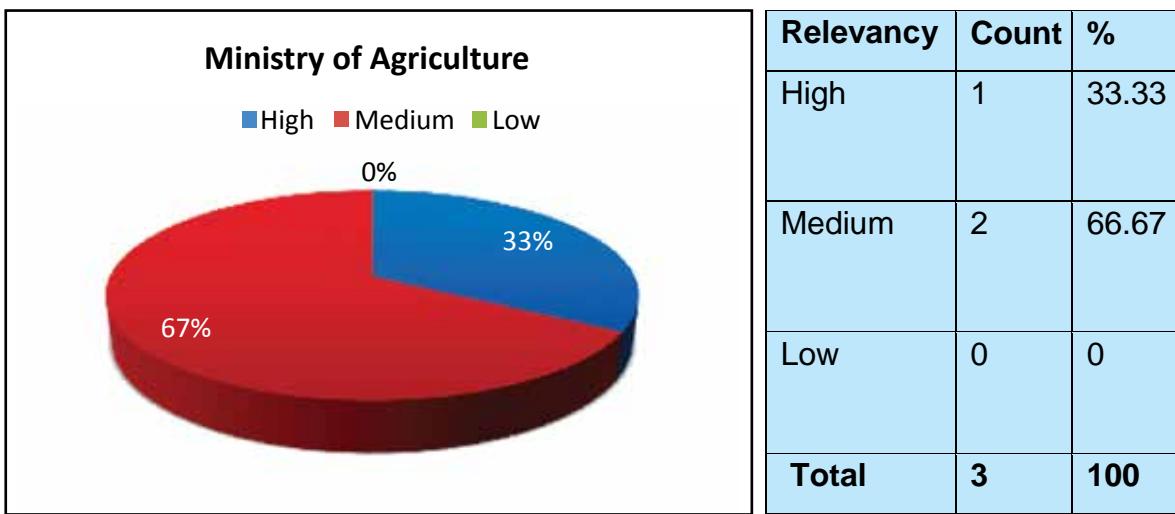


Figure 4.54: Categorization of DRR relevant projects in MoA during 6th FYP period

Initially three projects of MoA were selected from the ADP, which exhibited relevance with DRR. Afterwards, on the basis feedback received from the KII of the officials from the concerned agencies, these projects were classified into three categories (high, medium and low) based upon the percentage of allocation.

It was observed that out of the three projects, one project was highly relevant to DRR which means 70-100% of the allocation in this project had been dedicated to DRR. MoA projects, whereas two projects have medium relevance (40-69% relevance) to DRR.

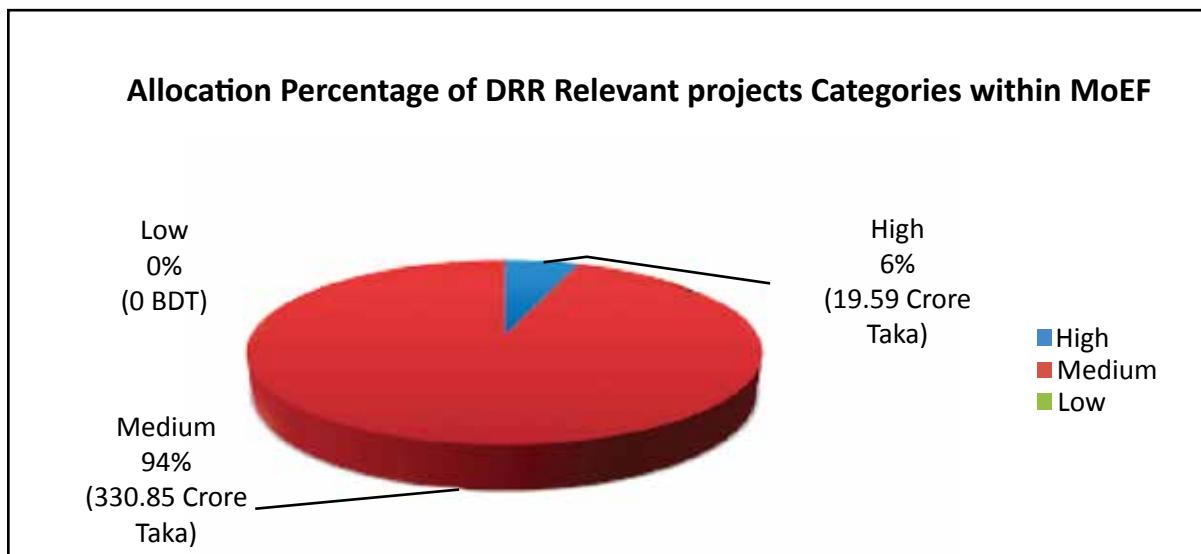


Figure 4.55: Allocation percentage for DRR relevant projects categories within MoA during 6th FYP period

Percentage of monetary allocation from the selected three projects is depicted in the pie chart (Figure 4.55). Sixty-eight percent of the money addresses disaster risk reduction. Although the count shows 33%, 67% and 0% for high, medium and low DRR relevance investments respectively among the 3 projects, in terms of monetary allocations, the percentages are 6%, 94% and 0%, respectively.

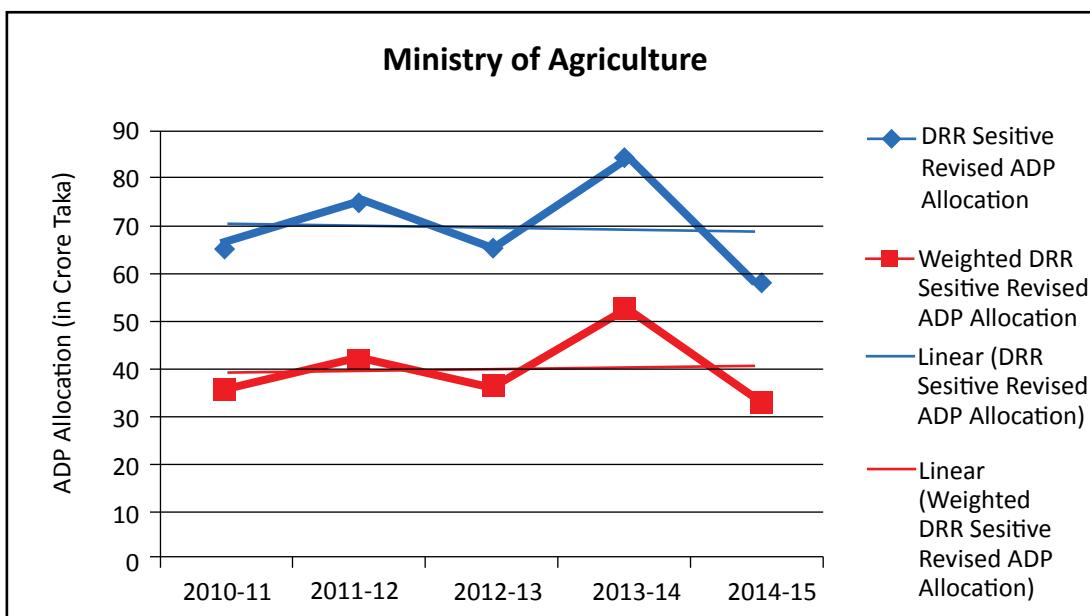


Figure 4.56: Trend analysis of DRR sensitive ADP allocation and weighted DRR sensitive allocation for the selected projects of MoA during 6th FYP period

The figure illustrates year-wise distribution of DRR sensitive ADP allocations as well as weighted DRR sensitive ADP allocations for the 3 projects implemented by the MoA. The DRR sensitive ADP allocations and the weighted DRR sensitive ADP allocations graph for the projects exhibit a slightly decreased trend whereas DRR sensitive ADP allocation graph show a minor increase in trend.

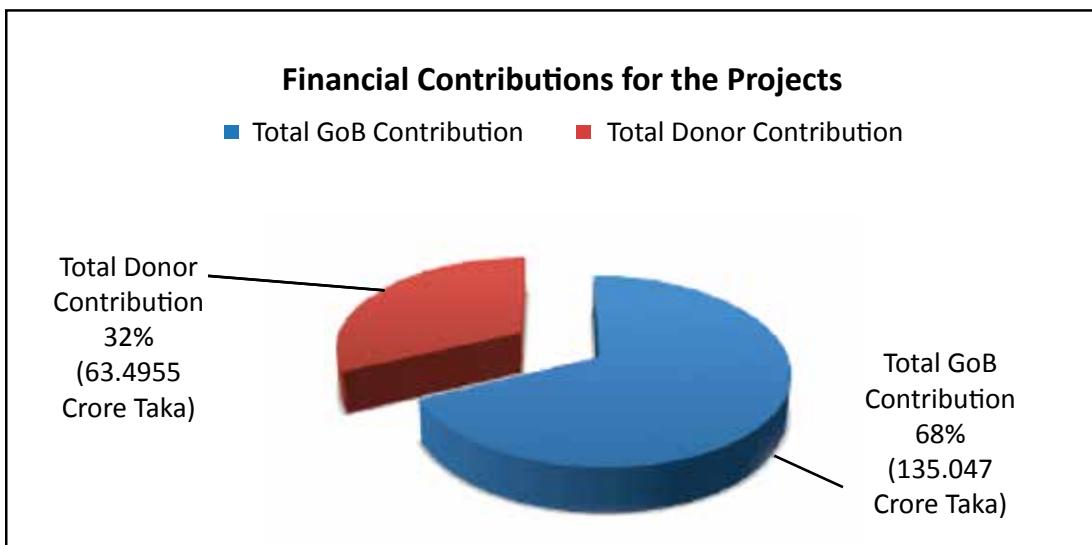


Figure 4.57: Financial contribution to DRR sensitive ADP allocations for MoA during 6th FYP period

Figure 4.57 shows that the GoB contributed 68% of the weighted DRR-sensitive ADP allocations for the projects totaling 135.047 Crore Taka, whereas project aid contributed 32% (totaling 63.4955 Crore Taka) of the finances of these projects.

The pie chart (Figure 4.58) shows that among the weighted DRR-sensitive total ADP allocations for the projects, almost 162.8175 Crore Taka (82%) was allotted for capital components whereas 35.725 Crore Taka (18%) was allotted for Revenue components of the projects.

Component-wise Allocation Distribution of the Projects

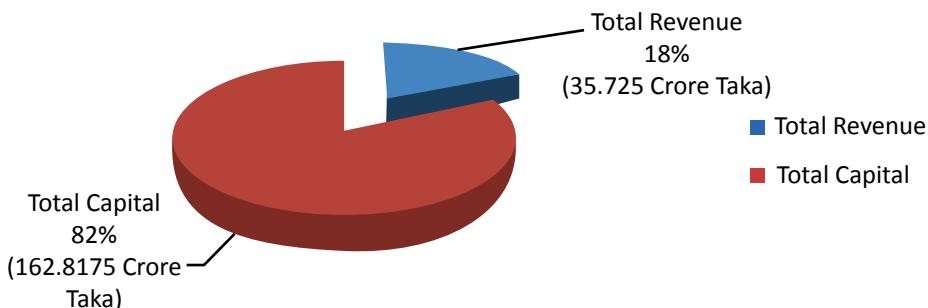


Figure 4.58: Revenue and capital components of DRR sensitive ADP allocations for MoA during 6th FYP period

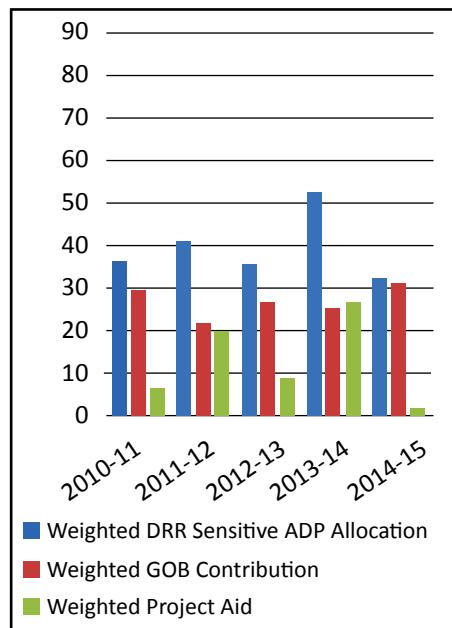
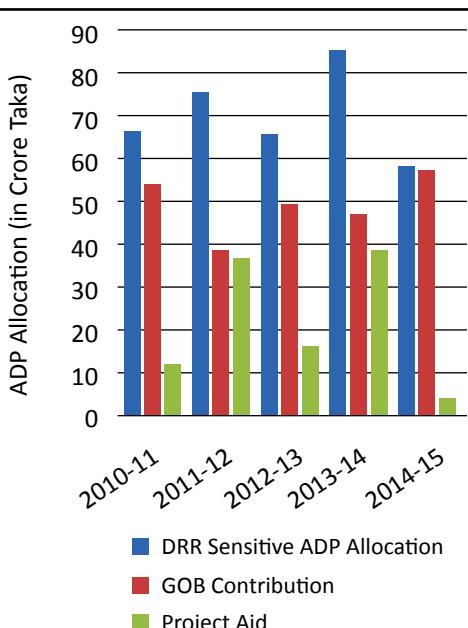
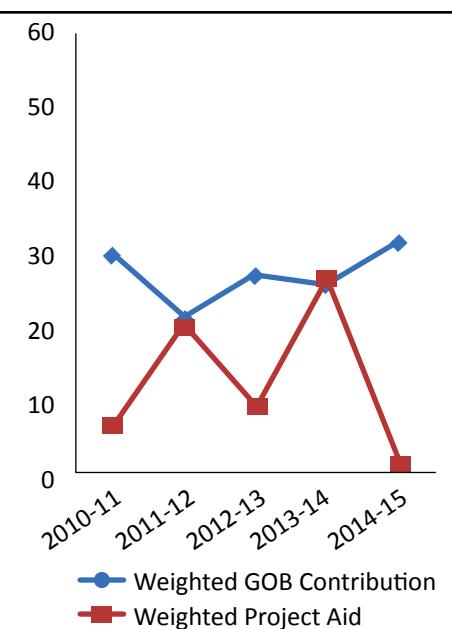
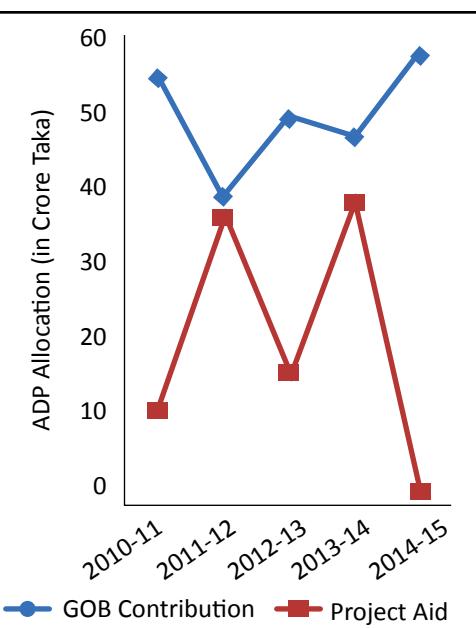


Figure 4.59: Year-wise distribution of (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocation for the identified projects in MoA with a breakdown of resource allocation

(a)

(b)



(a)

(b)

Figure 4.60: Trends of GoB contribution and project aid in (a) DRR sensitive ADP allocation and (b) weighted DRR sensitive ADP allocations for MoA during 6th FYP period

Figure 4.59 illustrates year-wise DRR sensitive ADP allocation of the ministry for the identified projects along with the GoB contributions and project aid portions of the allocation whereas Figure 4.59b shows the weighted allocations for each year. Figure 4.60 (4.60b shows the weighted allocations) show trends of the GoB contribution and project aid for the identified projects during 6th FYP period. The graphs show variations in all portions of the allocations. Among these, GoB contribution shows slight overall increase in the 6th FYP period but project aid shows an overall decreasing trend throughout the 6th FYP Period. Generally, the graphs are showing decrease in trend of both project aid and GoB contribution for the identified projects. Also weighted values in Figure 4.60b show that projects funded by the GoB contribution have much lower DRR sensitivity than those funded by project aid.

4.4 Addressed Hazards

Development expenditures in Bangladesh have addressed 11 specific types of hazards as well as unspecified hazards during the 6th FYP period. Many of the projects had a multi hazard focus and the number of projects dedicated for particular hazards overlapped. Flood has received the greatest attention with 74 projects (45%) addressing this hazard. 56 projects (34%) addressed riverbank and coastal erosion and 53 projects (21%) of the identified projects addressed cyclone and consequent storm surge, tsunamis. The other hazards addressed in the ADP include water logging (26 projects in total), environmental hazards (19 projects in total), salinity (12 projects in total), arsenic contamination of groundwater (8 projects in total), earthquake (7 projects in total), landslide-soil erosion (3 projects in total) and drought (3 projects in total). 9 projects have been classified as an unspecified hazard category. These projects focus on building resilience of the community but do not specifically address any particular hazards. The statistics of hazards indicate the vulnerability of the country to hydro-meteorological hazards. Floods, especially flash floods, riverbank erosion and cyclones have been frequent incidents in the country, which put the lives and livelihoods at enormous risk. Development projects have had a big impact in reducing risks and building resilience through both structural and non-structural measures. The 1970 and 1991 cyclones caused deaths of over 500,000 and 140,000, persons respectively; but recent cyclones like Cyclone Sidr in 2007 caused 4234 deaths – a hundred fold reduction compared to the 1970 cyclone. However, the damages and life losses are still a major concern.

Figure 4.61 illustrates the number of projects addressing specific hazards and figure 4.62 shows their percentage among the identified 164 projects. As many of the projects address multiple hazards, the addressed hazard count is 252, well over the number of identified projects (164) as shown in Figure 4.61. Addressed hazard count is approx. 154% of the total number of projects.

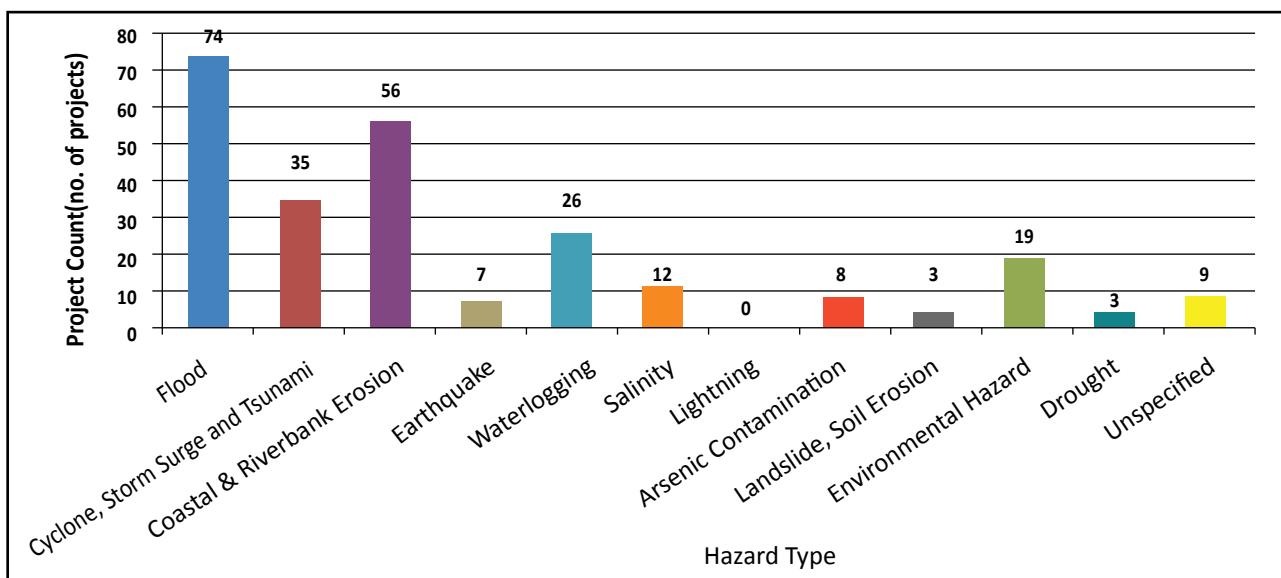


Figure 4.61: Number of Projects addressing specific hazards during the 6th FYP period

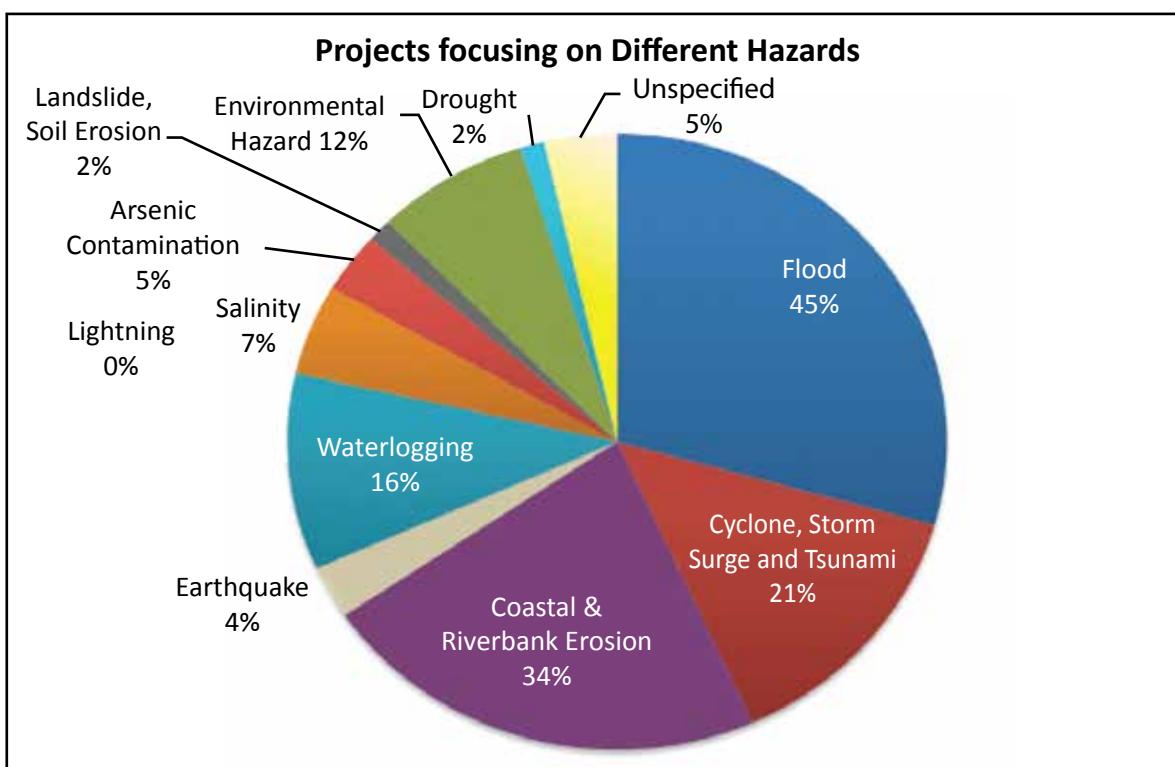


Figure 4.62: Percentage of Projects addressing specific hazards during the 6th FYP period

Figure 4.63 depicts the percentage of identified projects addressing different number of hazards. The figure suggests that 57.3% of the identified projects addressed a specific hazard whereas 37.2% of the identified projects addressed multiple hazards. 5.5% projects addressed issue of resilience but did not specifically address any particular hazard. Projects that address multiple hazards are much more cost efficient than the projects, which are formulated to address single hazard.

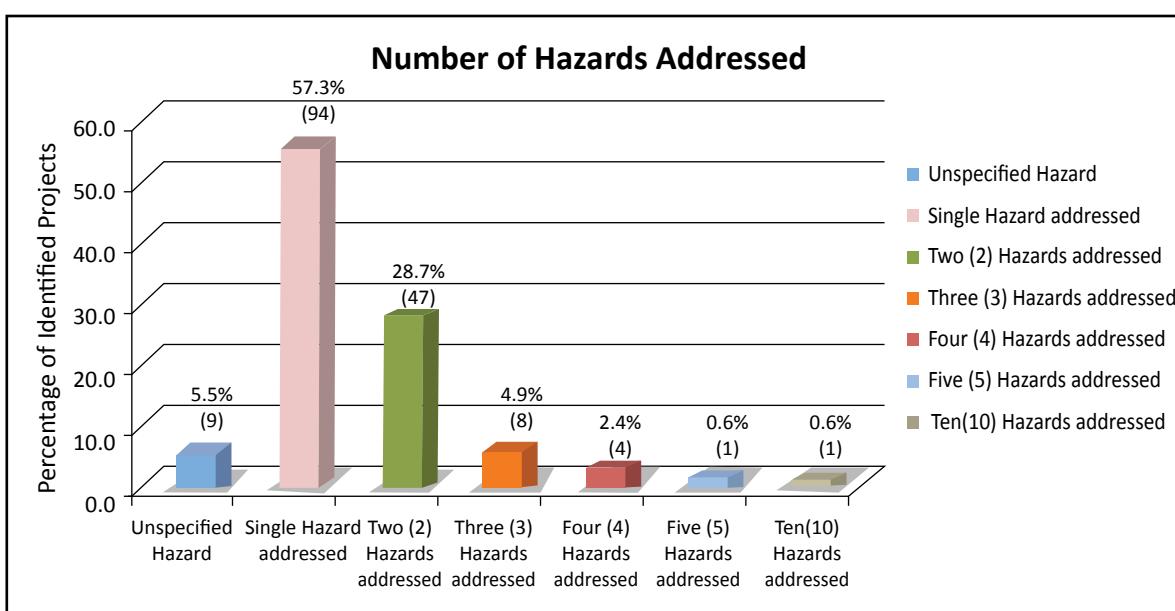


Figure 4.63: Percentage of Projects addressing multiple hazards during the 6th FYP period (FY 2011 – FY 2015)

50% of the identified projects implemented by Ministry of Local Government, Rural Development and Co-operatives (15 in total) addressed multiple hazards whereas it was 61.5% (8 projects in total) for the Ministry of Disaster Management and Relief as per Table 4.9 (also observed in Figure 4.64). Ministry of Housing and Public Works as well as Ministry of Agriculture did not implement any projects addressing multiple hazards.

Table 4.9: Percentage of projects (for each ministry) addressing multiple hazards during the 6th FYP period (FY 2011 – FY 2015)

Ministry	Projects Addressing			Total Number of Identified Projects
	Unspecified Hazard	Specific Hazard	Multiple Hazards	
MoLGRDC	2 (6.7%)	13 (43.3%)	15 (50%)	30
MoHPW	4 (40%)	6 (60%)	0 (0%)	10
MoWR	2 (2.2%)	58 (63.0%)	32(34.8%)	92
MoA	0 (0%)	3 (100%)	0 (0%)	3
MoEF	1 (6.25%)	9 (56.25%)	6 (37.5%)	16
MoDMR	0 (0%)	5 (38.5%)	8 (61.5%)	13

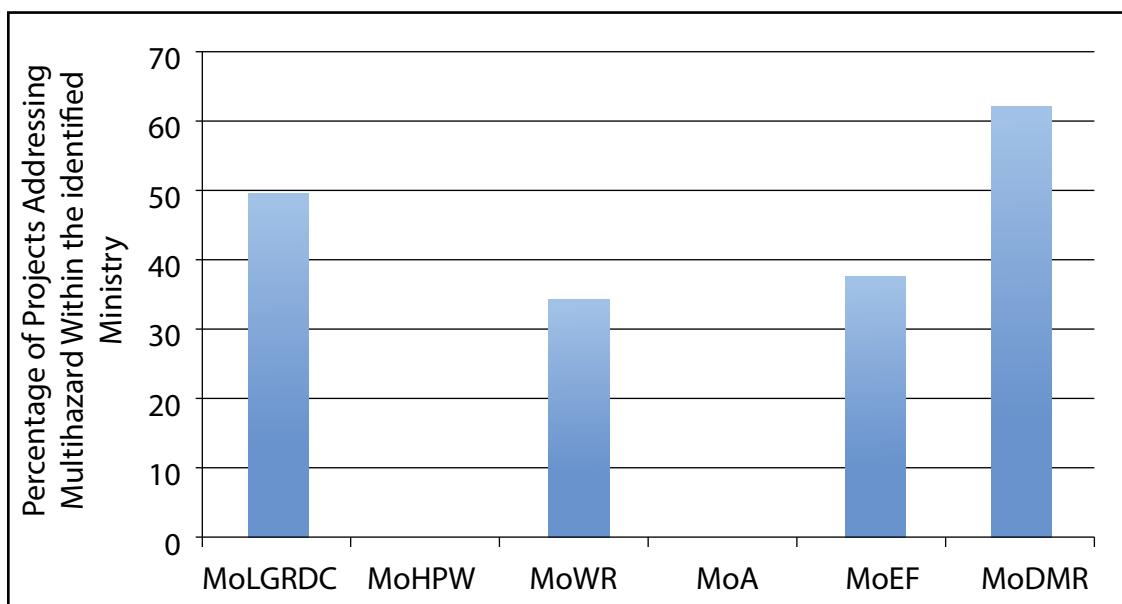


Figure 4.64: Percentage of projects (in each of the identified ministries) addressing multiple hazards during the 6th FYP period (FY 2011 – FY 2015)

Figure 4.65 demonstrates the trend of weighted ADP allocation for projects addressing multiple hazards during 6th FYP period (FY 2011 – FY 2015). Weighted ADP allocations for projects addressing multiple hazards show an increasing trend. Both project aid and GoB contributions show overall increasing trends except GoB contributions in FY 2015.

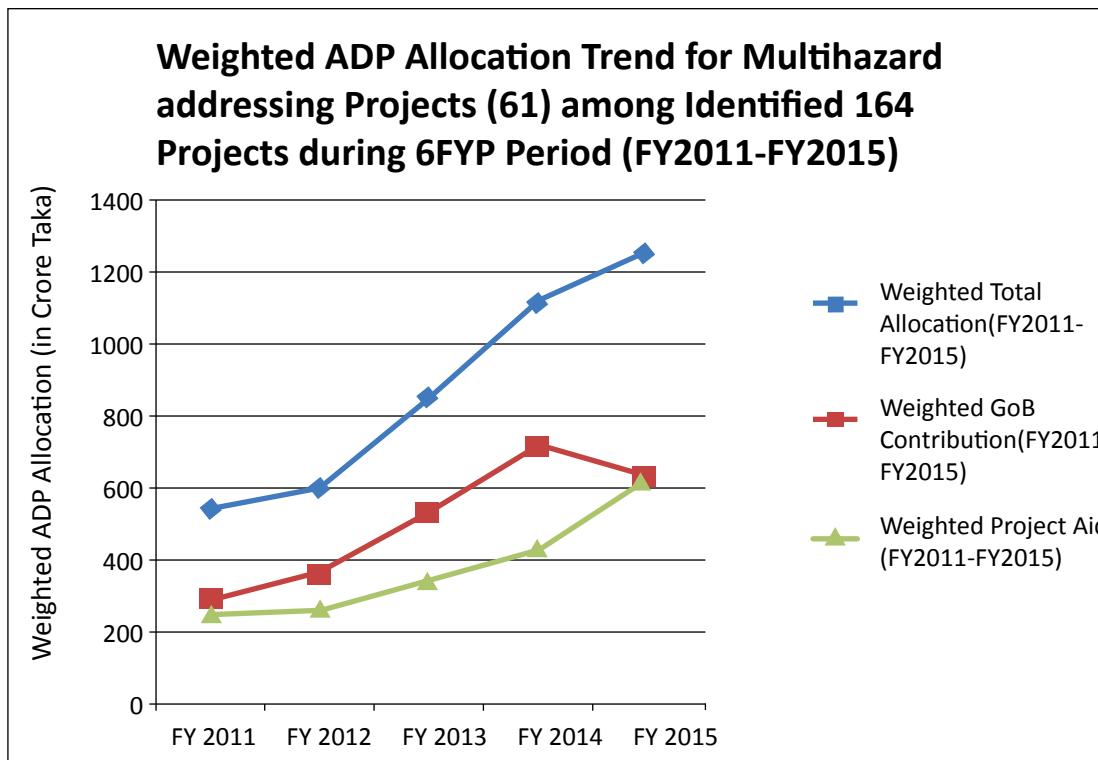


Figure 4.65: Annual ADP allocation trends for projects addressing multiple hazards during the 6th FYP period (FY 2011- FY 2015)



Chapter 5

Case Study

5.0 Selection of six projects for case studies

5.1 Bank Protection of Jamuneswary, Chickly and Charalkata River at Kishoregonj, Taragonj of Badargonj Upazila

Project Information

The project titled “Bank Protection of Jamuneswary, Chickly and Charalkata River at Kishoregonj, Taragonj of Badargonj Upazila” was implemented by Bangladesh Water Development Board under the Ministry of Water Resources. The project sites are scattered throughout Rangpur and Nilphamari districts. It is an on-going project with a timespan of two-years. The total cost of the project is 200 Lakh Taka. The project aims for the following:

1. To build protection measures or re-excavation of canals by assessing river dynamics, riverbank erosion, sedimentation and morphological changes.
2. To review sustainability.
3. To identify whether any negative impact on environment will occur due to the implementation of the project.

Information from the Project Authority

The Jamuneswari River is a meandering river with the bank being moderately prone to bank erosion mainly during the rainy season. To protect the local people and their property, a riverbank protection project was taken. The project aims to build Bank Protection structures using concrete blocks at 20 different points of the rivers where the river erodes almost 10-20m at an average every year. 7 of these points are almost complete. Before the implementation of the project, Jamunashwari river flooding destroyed houses in Joy Bangla area of Saidpur, Nilphamari district, while agricultural lands and roads were severely affected in Ghonirampur and Pachalipara. Following the destruction the project was initiated. The project has protected thousands of the inhabitants from riverbank erosion which could have been deadlier, had it not been the implementation of the project. The estimated life span of the structure is 25 years. Due to the implementation of the project, the area has not suffered any negative agricultural productivity. As per the authority, the cropping intensity (percentage of effective crop area harvested to the physical area) of the area would increase to 230 percent from existing value of 180 percent (47,530 metric ton). The project was taken after calculating the highest flood level and the area where erosion has occurred. In Ghonirampur area, the embankment is 500m long and the embankment is 80% complete. The embankment is 15-20 feet deep under the ground and guide wall was built around the embankment for protection. Joy Bangla is another site visited, which is 500m in length and almost complete. In Nandaram, only 100m have been constructed and the rest 700m of the total 800m has not yet been constructed.

The concerned department has clearly stated that the project doesn't reclaim land but rather only aims at protecting the existing area of land. This project also doesn't have any component for the people who have already lost their belongings and lands due to river erosion.

Information from Beneficiaries

Three of the 20 sites of this project were investigated. These sites are mentioned below:

Ghonirampur Area, Saidpur Upazila, Nilphamari District

According to the beneficiaries of the area, the agricultural land and roads near the river in the area were continuously engulfed by the river. The bank protection structure protected the bank from erosion in the current year. Drought, flood, riverbank erosion and lightning are the most prominent hazards of the area.

Pumps were used to supply water to the lands during drought. Tubewell is the main source of water in this area.

Joy Bangla Area, Saidpur Upazila, Nilphamari District

Local residents of the area were interviewed at this site. According to the interviewees, flood, drought and river erosion are the main disasters. The locals use irrigation system and tube well to water the fields. The soil is composed of loosely compacted sediments, which are sandy and prone to erosion. In the rainy season during the flood time, the erosions become severe.

Nandaram, Saidpur Upazila, Nilphamari District

Local inhabitants were interviewed in the area. They mentioned flood, drought and riverbank erosion as their main hazards. Most people live in is either khas land or take the land on lease from others. Many have migrated to other places due to this crisis. Eighty percent of the people here are dependent on agricultural activities. Water becomes scarce during the period of drought.

Recommendations

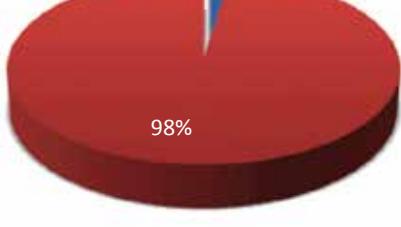
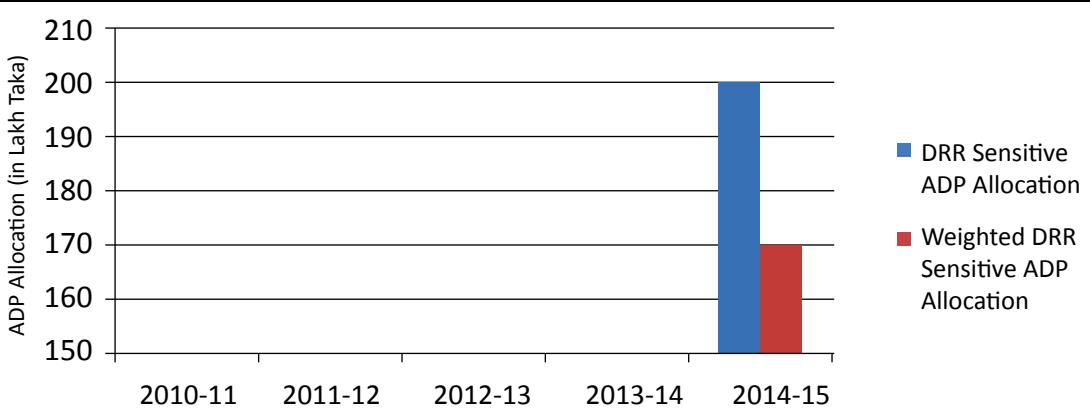
The followings can be recommended based on the field assessment of the project-

1. The project needs to be completed at a faster rate.
2. Rehabilitation of those who have lost their homes and belongings to erosion should be carried out as a follow-up to the project.
3. The extremely poor people who have lost everything should be given compensation for their livelihood.
4. To improve the effectiveness of the project, the monetary allocation should be increased.
5. Project monitoring and management system should be made sound and local people must be included in field level.



Project site of Bank Protection of Jamuneswary, Chickly and Charalkata River at Kishoregonj, Taragonj of Badargonj Upazila project. Photo: NARRI

Table 5.1: Financial trend analysis of the project during 6th FYP period (financial figures in Lakh Taka)

Project Title: Bank Protection of Jamuneswary, Chickly and Charalkata River at Kishoregonj, Taragonj of Badargonj Upazila (Lakh Taka)																							
Project ID: 007564 MoF Code: 47052266	Total Project Cost: 3494																						
ADP Sector: Water Resources ADP Subsector: N/A	Total Allocation	Total GoB Contribution	Total Project Aid	Total Revenue	Total Capital																		
Implementing Agency: Bangladesh Water Development Board	200	200	0	5	195																		
Implementation Period: (01/01/2015- 30/06/2017) Lifetime: 2	DRR Sensitivity: High (85%)																						
	DRR Sensitive Total ADP Allocation	DRR Sensitive Total GoB Contribution	DRR Sensitive Total Project Aid	DRR Sensitive Total Revenue	DRR Sensitive Total Capital																		
	170	170	0	4.25	165.75																		
 <ul style="list-style-type: none"> ■ Total GoB Contribution ■ Total Donor Contribution 			 <ul style="list-style-type: none"> ■ Total Revenue ■ Total Capital 																				
 <table border="1"> <caption>ADP Allocation (in Lakh Taka)</caption> <thead> <tr> <th>Year</th> <th>DRR Sensitive ADP Allocation</th> <th>Weighted DRR Sensitive ADP Allocation</th> </tr> </thead> <tbody> <tr> <td>2010-11</td> <td>0</td> <td>0</td> </tr> <tr> <td>2011-12</td> <td>0</td> <td>0</td> </tr> <tr> <td>2012-13</td> <td>0</td> <td>0</td> </tr> <tr> <td>2013-14</td> <td>0</td> <td>0</td> </tr> <tr> <td>2014-15</td> <td>200</td> <td>170</td> </tr> </tbody> </table>						Year	DRR Sensitive ADP Allocation	Weighted DRR Sensitive ADP Allocation	2010-11	0	0	2011-12	0	0	2012-13	0	0	2013-14	0	0	2014-15	200	170
Year	DRR Sensitive ADP Allocation	Weighted DRR Sensitive ADP Allocation																					
2010-11	0	0																					
2011-12	0	0																					
2012-13	0	0																					
2013-14	0	0																					
2014-15	200	170																					

5.2 Construction of Flood Shelters in the Flood-Prone and River Erosion Areas (Phase-2)

Project Overview

This project, named “Construction of Flood Shelters in the Flood-Prone and River Erosion Areas (Phase-2)”, is implemented by the Department of Disaster Management under the Ministry of Disaster Management & Relief. The location of the flood shelter is Chitrajib village, home to about five thousand people, which is situated at Kishorganj Upazila in Nilphamari zilla. Total cost of the project is 17,461 lakh Taka. The project duration is from July 2013 to June 2016. The objective of the project is to save life and asset from flood and other environmental hazard. The investigated flood shelter is being used to hold school classes at present.

Consultation with Implementation Agency

The Project Implementation Officer (PIO) of the Kishoregonj upazila and the contractor of the project were interviewed. Construction of flood shelter at Kishoregonj upazila in Nilphamari district started in 2013 completed on 8 September 2016. The shelter is a two-storied building with sufficient open space and capacity of 3000 people. It can also accommodate domestic animals. Solar panel connection is available for emergency situation apart from main electricity line. There is also a room for doctor. Separate toilet (6 in number for each floor) facilities for male and female are present in the building. The shelter is about 7-8 feet high from the flood level. No new employment was created from the shelter but local people were engaged during its construction phase.

The first floor is about 10-12 feet high from the base. The expected longevity of the shelter is 50 years. Shelter is in close proximity of the local people’s homes. But it is noteworthy that the current flood levels don’t require the locals to move to the shelter. The shelter is earthquake resilient as the building has 24 pillars and used reinforced concrete construction (RCC). For the proper use and management of the shelter, no instruction manuals are available. Project Implementation Officer (PIO) of the Kishorganj upazila during the interview stated that the concerned officials are well aware of the possible disasters in the area and a seminar was held 13 October every year to observe “The National Disaster Day.” But the officials felt the need to expand the extent of awareness among locals. At present, the shelter is being used as a school, and occasionally, as a venue for cultural programs.

Four local elected representatives were also interviewed. Among the unions in the area, Union-6 is the most underdeveloped union. About 24,500 people are voters and approximately 110250 people live in the area. The flood shelter was constructed for underprivileged and flood-affected people. The present structures of disabled and aged allowances are considered to be insufficient indicating a weak social safety net. A committee of leaseholders was formed which included the Headmaster and teachers of the school, which is actually the flood shelter. Hazards information has not been disseminated through any official programs like seminars till date. Local representatives have not been trained yet but there exists an interest to do so in future. They also have planned to organize a committee for raising one more floor in the flood shelter. No obstacles were faced in any phase of construction.

Consultation with Project Beneficiaries

Headmaster, assistant Headmaster, teachers of the school as well as two local beneficiaries were interviewed to gather information about the project.

Local inhabitants were skeptical about the presence of a flood shelter in the area because drought, nor-wester and earthquake were the more common hazards of the area and no significant floods have occurred in recent times. According to the locals, there have not been difficulties related to flood hazards after the deadly 1988 flood. Usually only one-foot water from ground stagnate during monsoon. The headmaster of Chitrajib high school is quite knowledgeable about flood and earthquake; and attempts to disseminate knowledge to the students. The shelter has been handed over to the school committee for use. But there is no special committee to handle the situation during a disaster. It is notable that there is no first aid kit and food and water storage system in the shelter, which should be a must for any modern shelter. Solar power systems were found to be absent in the building. Other alternative or additional electricity systems were also absent.

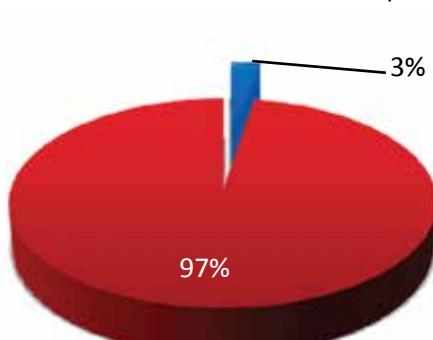
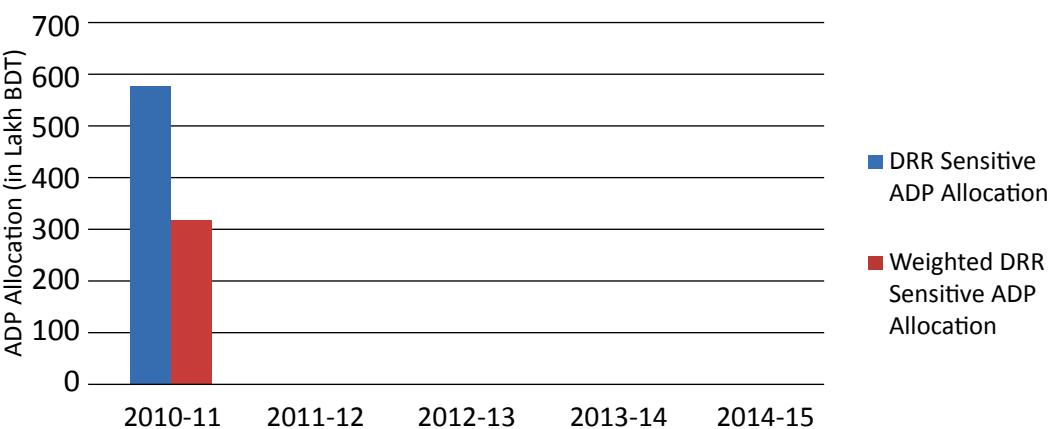
Recommendations:

1. Building should be made three-storied.
2. Extra food and water supply system are required for emergency situations.
3. Emergency electricity system and solar energy system should be set up.
4. Shelter management committee should be introduced as soon as possible.
5. Toolkit and first aid-kit for disaster situation should be provided.
6. Communication system should be well developed.
7. More disaster education and climate related program should be held in the area.
8. More shelter should be built in Jaldhaka, and Dimla as flood disaster is more severe in those areas.



Technical Advisory Committee (TAC) members in a field visit at Taraganj, Badarganj Upazila. Photo: NARRI

Table 5.2: Financial trend analysis of the project during 6th FYP period
(financial figures in Lakh Taka)

Project Title: Construction of Flood Shelter in the Flood prone and river erosion areas (Revised)																							
Project ID: MoF Code: 43318396 ADP Sector: Agriculture ADP Subsector: Food Implementing Agency: Directorate of Relief and Rehabilitation Implementation Period: (01/07/2008- 30/06/2010) Lifetime: 2	Total Project Cost: 3405																						
	Total Allocation	Total GoB Contribution	Total Project Aid	Total Revenue	Total Capital																		
	573	573	0	15	558																		
DRR Sensitivity: Medium (55%)																							
	DRR Sensitive Total ADP Allocation	DRR Sensitive Total GoB Contribution	DRR Sensitive Total Project Aid	DRR Sensitive Total Revenue	DRR Sensitive Total Capital																		
	315.15	315.15	0	8.25	306.9																		
	 <ul style="list-style-type: none"> ■ Total GoB Contribution ■ Total Donor Contribution 	 <ul style="list-style-type: none"> ■ Total Revenue ■ Total Capital 																					
	 <table border="1"> <thead> <tr> <th>Fiscal Year</th> <th>DRR Sensitive ADP Allocation (Lakh BDT)</th> <th>Weighted DRR Sensitive ADP Allocation (Lakh BDT)</th> </tr> </thead> <tbody> <tr> <td>2010-11</td> <td>580</td> <td>320</td> </tr> <tr> <td>2011-12</td> <td>0</td> <td>0</td> </tr> <tr> <td>2012-13</td> <td>0</td> <td>0</td> </tr> <tr> <td>2013-14</td> <td>0</td> <td>0</td> </tr> <tr> <td>2014-15</td> <td>0</td> <td>0</td> </tr> </tbody> </table>					Fiscal Year	DRR Sensitive ADP Allocation (Lakh BDT)	Weighted DRR Sensitive ADP Allocation (Lakh BDT)	2010-11	580	320	2011-12	0	0	2012-13	0	0	2013-14	0	0	2014-15	0	0
Fiscal Year	DRR Sensitive ADP Allocation (Lakh BDT)	Weighted DRR Sensitive ADP Allocation (Lakh BDT)																					
2010-11	580	320																					
2011-12	0	0																					
2012-13	0	0																					
2013-14	0	0																					
2014-15	0	0																					

5.3 Climate Resilient Participatory Afforestation and Reforestation (CRPAPR)

Project Overview

The development objective of the Climate Resilient Participatory Afforestation and Reforestation Project for Bangladesh is to reduce forest degradation and increase forest coverage through participatory planning and monitoring and to contribute to building long-term resilience of selected communities in coastal and hilly areas to climate change. The project has four components. The first component is an afforestation and reforestation program. The objective of this component is to increase the afforested and reforested areas through participatory forestry and co-management approach in the degraded forestland, marginal, fallow and newly accreted land in coastal and hilly areas. In achieving the target of participatory afforestation and reforestation, the component will also support the rehabilitation and reconstruction of the existing field offices of the Bangladesh Forest Department (BFD). The second component is alternative livelihoods to support forest communities. The objective of this component is to improve and diversify non forest-based livelihood opportunities of poor forest dependent households in selected forest communities. This component will target 6,000 households comprising no less than 25,000 people in 200 forest communities in nine project districts. These are Cox's Bazar, Chittagong, Noakhali, Laxmipur, Feni, Barisal, Patuakhali, Barguna and Bhola. In the hilly area, the project targets the core and buffer zones of the Reserved Forest Land of Chittagong District and Cox's Bazar District. The above districts fall under ten Divisional Forest Offices: Cox's Bazar North Forest Division, Cox's Bazar South Forest Division, Chittagong Coastal Forest Division, Chittagong North Forest Division, Chittagong South Forest Division, Noakhali Coastal Afforestation Division, Feni Social Forestry Division, Barisal Coastal Forestry Division, Patuakhali Coastal Afforestation Division and Bhola Coastal Afforestation Division.

The third component is capacity development for forest resource planning and management. The objective of the component is to improve the technical knowledge base on forest resource assessment, program monitoring and long-term planning for the sustainable development of the forest sector. The fourth component is project management. This component will support the establishment of a Project Implementation Unit (PIU) in BFD for implementation of component one and three. The PIU will provide necessary support for financial management, social and environmental safeguards, communication and procurement to Arannyak Foundation (AF). The total estimated cost of this project is \$35 million. The project implementation period is 2013-2016.

Consultation with Implementation Agency

Interviewee: Junior Consultant (CMO), Divisional Forest Office, Patuakhali.

Under the project seven types of specific plantations were raised. These are Mangrove Plantation, Mound Plantation, Jhaw Plantation, Golpata Plantation, Enrichment Plantation, Non Mangrove Plantation and Strip Plantation. Local species of trees and some other plants were chosen for this afforestation project.



Table 5.3: List of plantations under CRPAR project during 6th FYP period

Plantation Type	13-14 FY	14-15 FY	15-16 FY	Total
Mangrove (hectare)	480	700	382	1562
Mound (hectare)	25	10	10	45
Golpata (seedling km)	102	250	108	460
Non Mangrove (hectare)	30	160	60	250
Street (seedling km)	68	150	107	325
Jhaw (hectare)	12	48	-	60
Enrichment (seedling km)	-	50	160	210

This project also introduced some social changes. For example, it created service sector or employment. The two main types of employment are watchmen (mostly males) and nursery workers (mostly females). Five-hundred and forty female members were selected from 18 villages. Social cohesion/ bonding is increasing among the local inhabitants of the community. Aesthetic value of the environment is increasing day by day.

There were some challenges faced during the implementation period of the project. Firstly, the site was in an offshore island and due to tidal heights the natural growth of trees was interrupted. Secondly, due to the cattle grazing in the newly planted area, seedling used to get destroyed. But the second problem was solved by organizing some social awareness building programs, that trees will keep the environment balanced and this project would help people to get some new employments.

Though the main benefit of participatory afforestation and reforestation in coastal areas will be a key contributor in meeting the challenge of climate change vulnerability and depleting forest resources, there are many secondary benefits from this project. Planted trees can act as natural barrier to cyclone, tidal surge, wind action etc. It is the first protection zone in disaster prone coastal areas and thus reduces the intensity of any calamities induced by the sea. Again, Arannya Foundation (AF) supports the project and provides soft loans for women and forest watchmen. Dead trees and tree branches can be used as fuel for cooking. People can collect honey from these forests.

There were some issues, such as, a species, known locally as Khoyer, have thorns that can injure to humans as well as livestock. Another species known locally as Chambul has sweet roots, which often gets eaten by rodents. This problem or loss could have been avoided if local consultation with the people was conducted while choosing the trees for the specific site.

The core beneficiaries of CRPAPR are poor landless, destitute women, widows, socially disadvantaged people living in and around the forest, tribal peoples (Rakhain Tribe), injured & impoverished freedom fighters etc. Participating communities are selected based on clear criteria, such as proximity to areas to be afforested and reforested, poverty level and degree of impact from climate changes.

Table 5.4: Number of beneficiaries of the project

Year	Male	Female	Total
FY 2013-14	809	213	1022
FY 2014-15	850	205	1055
FY 2015 -16	562	194	756

TFF (Tree Farming Fund) has revolving fund for the follow up of the project and Uttaran have a 6 months shorts term follow-up plan after the project is completed.

Others: Scientific knowledge was added in afforestation program of the selected areas. Legal documentation of the project beneficiaries was done so that if anything happens to any beneficiary then their heir would get the profit from this project.

Recommendation:

- Short term projects should be converted to long term projects by increasing the time duration.
- For better effectiveness and continued benefit there should be a structured follow up plan for all projects
- New project should be linked with the old existing projects to make it more effective.

Consultation with Project Beneficiaries

Char Gangamoti, Kolapara, Patuakhali.

Beneficiaries are selected by project implementation agency. Basically insolvent and poor people are chosen as the beneficiary of the project. Insolvent freedom fighters, tribe, widow, disabled and in the case of strip planting mainly roadside people are chosen as the beneficiary.

A committee (including 9 members) was formed to select the beneficiaries and they went to the field to select the beneficiaries. The name of the beneficiaries is documented on record (at a cost of 300 Taka) and it is mentioned in the record that if any the beneficiary dies or go missing, benefit will be enjoyed by one of his/her legal heirs.

In the project area maximum people are used to fishing and women are centered on the households. They have been living in this place for the last 40-50 years. There are several types of hazards affecting this area. Cyclone, storm surge, salinity (November – February) are the major hazards. Heavy wind is also another problem of this area.

Sometimes, these hazards affect this area and cause serious damage to both environment and people and their property. The adapting capability of people of the area is poor. Even most of them are not aware of what exactly adaptation techniques are. They react to what the situation demands. During the time of cyclones, they take shelter in the cyclone shelter. They mainly depend on relief from govt. and NGOs. They



Project site of Climate Resilient Participatory Afforestation and Reforestation (CRPARP) Project at Char Gangamoti, Kolapara, Patuakhali. *Photo: NARRI*

work as day laborer at nearby areas. In the worst case, they migrate to nearby towns or Dhaka and Chittagong permanently or semi-permanently.

Through this project, Department of Forestry along with Uttaran took some initiatives to reduce the vulnerability and increase resilience of the people. Participatory afforestation and reforestation is taken by Department of Forestry which gives shelter from cyclone and also reduces the wind velocity. Many people are getting employment through afforestation (1 people per 2.5 ha). Activities of the NGO Uttraran are mainly conducted with women. They provide women training on raising cattle, poultry, home-craft, fish cultivation etc. and give loan at 5% interest to adapt with this disaster. They also provide loans to the guards of the Forest Department. By this loan they buy boat and net for fishing. Both the Govt. and NGOs have been arranging some awareness building program.

Recommendation:

- 1) More support for Alternative Income Generation (AIG) is required.
- 2) The projects should be more inclusive in nature and include more beneficiaries into its coverage.
- 3) The provision of basic education and health facility support in the remote project area is also required

Table 5.5: Financial trend analysis of the project during 6th FYP period
(financial figures in Lakh Taka)

Project Title: Climate Resilient Participatory Afforestation and Reforestation																							
Project ID: 007090 MoF Code: 45315016 ADP Sector: Agriculture ADP Subsector: Forestry Implementing Agency: Department of Forestry Implementation Period: (01/07/2012 31/12/2016) Lifetime: 4	Total Project Cost: 28350																						
	Total Allocation	Total GoB Contribution	Total Project Aid	Total Revenue	Total Capital																		
	11493	0	11493	0	9543																		
	DRR Sensitivity: High (85%)																						
	DRR Sensitive Total ADP Allocation	DRR Sensitive Total GoB Contribution	DRR Sensitive Total Project Aid	DRR Sensitive Total Revenue	DRR Sensitive Total Capital																		
	9769.05	0	9769.05	0	8111.55																		
	<ul style="list-style-type: none"> ■ Total GoB Contribution ■ Total Donor Contribution 100%		<ul style="list-style-type: none"> ■ Total Revenue ■ Total Capital 100%																				
<table border="1"> <caption>ADP Allocation (Lakh BDT)</caption> <thead> <tr> <th>Fiscal Year</th> <th>Revised ADP Allocation</th> <th>DRR Sensitive Revised ADP Allocation</th> </tr> </thead> <tbody> <tr> <td>2010-11</td> <td>0</td> <td>0</td> </tr> <tr> <td>2011-12</td> <td>0</td> <td>0</td> </tr> <tr> <td>2012-13</td> <td>0</td> <td>0</td> </tr> <tr> <td>2013-14</td> <td>3900</td> <td>3300</td> </tr> <tr> <td>2014-15</td> <td>7600</td> <td>6500</td> </tr> </tbody> </table>						Fiscal Year	Revised ADP Allocation	DRR Sensitive Revised ADP Allocation	2010-11	0	0	2011-12	0	0	2012-13	0	0	2013-14	3900	3300	2014-15	7600	6500
Fiscal Year	Revised ADP Allocation	DRR Sensitive Revised ADP Allocation																					
2010-11	0	0																					
2011-12	0	0																					
2012-13	0	0																					
2013-14	3900	3300																					
2014-15	7600	6500																					

5.4 Emergency 2007 Cyclone & Restoration Project (ECRRP): Recovery of Agriculture Sector (Crops) and Improvement Programme.

Project Location

Barguna, Bagerhat, Pirojpur, Patuakhali, Bhola, Barisal, Jhalokathi, Khulna and Satkhira.

Project Overview

Emergency 2007 Cyclone & Restoration Project (ECRRP) project was undertaken after cyclone Sidr 2007 following damage and loss assessment jointly done by GoB/World Bank. In this project there are six components, where the component Recovery of Agriculture Sector and Improvement Program, crop was subsector of component A. After cyclone Sidr, the coastal areas were highly affected by salinity. Addressing saline tolerant variety and introducing modern technology can make locals resilient to these adverse effects of salinity. In this project, technical support and the training were given to improve the agronomic knowledge. Under this project, supply agricultural instrument (e.g. power tiller, hoe etc.) was supplied and agriculture support structure (Irrigation canal) provided. In four upazilas Barguna district – Barguna Sadar, Bamna, Patharghata, Amtoli – 5251 agricultural instruments were given among 37747 beneficiaries and 52563 agricultural products were given among 56238 beneficiaries. The project became functional from August 2008 and continued till June 2014. The total estimated cost of this project was \$109 million. The project was implemented through Department of Agriculture Extension (DAE).

Consultation with the Implementation Agency

The ECRRP project mainly focuses on transforming agriculture from subsistence to commercial nature which is adaptive to climatic hazards. In order to do that, the implementing agency DAE supplied various agricultural instruments among the farmers and introduced them to the modern agricultural practices. They also supplied various logistic support e.g. digging canals for irrigation facility, introducing farmer field school etc. to enhance the effectiveness of the project. The farmers' field school arranged various training sessions for raising awareness and introduced them with new agricultural tools and technology. Using all these incentives the farmers were able to produce Boro crop in the field for the very first time. The yields in different season also increased. These improvements in agriculture have led to change in their socio-economic condition.

It was acknowledged by the implementing agency that sometimes the selection process of the beneficiary is a bit biased. Different social, cultural and political nepotism often comes up during the project beneficiary selection. Even the case of corruption at different level of project is not uncommon. The market economy is found to be an essential factor for achieving desired success of a project. Sometimes the final outcome of a project is a market product, for example manufacturing of certain commodity for generating alternative income sources. If the price of the new product does not comply with the market situation, the whole project becomes unsustainable. The lag time (difference between project approval date and actual start date) becomes a constraint, as it lessens the project's efficiency. The time gap between the inception of a project and its implementation puts the relevance of some projects at risk. This time gap should be reduced to ensure project efficiency.

The project changed the agriculture system and mechanization of agriculture by distribution of agriculture instruments. There was diversification of agriculture e.g. rice was taken over by pulse and sunflower. Illiterate farmers received some technical knowledge from farmer field school. Irrigation facilities were generated by newly dug canal. The project has contributed to developing the socioeconomic condition. The project was mainly designed for the farmers; farmers are mainly male member of this project area.

For this reason, female members are not included in this project. Due to political reasons, poor farmers sometimes may not get subsidy or soft loan from the govt. banks and other private banks/NGOs.

It was found that there has not been any immediate follow-up plan of this project. Another observation is sometimes these incentives makes the farmers lazy as that they do not want to get involved in any initiative, if there is no immediate monetary benefit.

Consultation with Project Beneficiary

Naltona, Barguna.

As the area is located in the southern coastal belt region of Bangladesh, the major disasters are Cyclone, tidal surge, water logging, salinity intuition (In month of Falgun, Chaitra and Boishakh of the Bangla calendar), drought (In the dry season). Local people take various steps to adapt to these disasters. For example, they change their cultivation season, which could reduce damage of their crops. They also make high seedbeds to preserve from water.

With the implementation of the project, some benefits have been offered to the people for reducing the vulnerability or increasing resilience. For example, farmers have received agricultural instruments, fertilizers, seeds, and training to adapt cultivation of crops which increase their resilience. At present, they can cultivate saline tolerant seeds (example- Paddy seed BIRI-47, Mug dal BIRI-Mug-6, sunflower seed Highsun-33), which have been given by the project. Under this project small canals have made and farmers use these canals for storing water to irrigate their croplands. About 60%-70% farmers of the area have received training under this project to reduce their vulnerability in agriculture sector.

The implementation of the project was offered by some problems such as –

- ✓ Administrative process of the implementation of the projects taking longer than the desired time.
- ✓ Market-economy problem (example- decrease the price of paddy instead of pulse and sunflower).
- ✓ The effectiveness of this project is reduced due to faulty design and poor maintenance of canals.
- ✓ Political problem (i.e. - Selection of farmers was maintained by union authority, most of the time the decisions were biased).
- ✓ Coordination problem among the stakeholders in the local area.

Recommendations

The project could have been executed in a better way if participatory measures were adopted in this project. The local people want more projects like this to get more incentives. Providing soft loan to the farmers for cultivation and introducing crops with more variations, which are salinity tolerant are recommended. Giving more training and introducing new technology in the field of agriculture to make them more resilient in context of the disasters of their area. From farmers' experience, it is seen that the economic return from paddy is much less than the economic return from other crops like pulse and sunflower. That is why farmers prefer to cultivate pulse and sunflower instead of paddy.



Project site of Emergency 2007 Cyclone & Restoration Project (ECRRP): Recovery of Agriculture Sector (Crops) and Improvement Programme, Patuakhali. Photo: NARRI

Table 5.6: Financial trend analysis of the project during 6th FYP period
(financial figures in Lakh Taka)

Project Title: Emergency 2007 Cyclone & Restoration Project (ECRRP): Recovery of Agriculture Sector (Crops) and Improvement Programme																							
Project ID: MoF Code: 43318396 ADP Sector: Agriculture ADP Subsector: Crops Implementing Agency: Department of Agricultural Extension Implementation period: (01/08/2008- 30/06/2014) Lifetime: 5	Total Project Cost: 9294																						
	Total Allocation	Total GoB Contribution	Total Project Aid	Total Revenue	Total Capital																		
	8531	0	8531	3687	4844																		
DRR Sensitivity: Medium (55%)																							
	DRR Sensitive Total ADP Allocation	DRR Sensitive Total GoB Contribution	DRR Sensitive Total Project Aid	DRR Sensitive Total Revenue	DRR Sensitive Total Capital																		
	4692.05	0	4692.05	2027.85	2664.2																		
<p>■ Total GoB Contribution ■ Total Donor Contribution</p> <p>0% 100%</p>			<p>■ Total Revenue ■ Total Capital</p> <p>57% 43%</p>																				
<p>ADP Allocation (in Lakh BDT)</p> <p>■ DRR Sensitive ADP Allocation ■ Weighted DRR Sensitive ADP Allocation</p> <table border="1"> <thead> <tr> <th>Year</th> <th>DRR Sensitive ADP Allocation</th> <th>Weighted DRR Sensitive ADP Allocation</th> </tr> </thead> <tbody> <tr> <td>2010-11</td> <td>1200</td> <td>600</td> </tr> <tr> <td>2011-12</td> <td>3600</td> <td>2000</td> </tr> <tr> <td>2012-13</td> <td>1600</td> <td>900</td> </tr> <tr> <td>2013-14</td> <td>2000</td> <td>1100</td> </tr> <tr> <td>2014-15</td> <td>0</td> <td>0</td> </tr> </tbody> </table>						Year	DRR Sensitive ADP Allocation	Weighted DRR Sensitive ADP Allocation	2010-11	1200	600	2011-12	3600	2000	2012-13	1600	900	2013-14	2000	1100	2014-15	0	0
Year	DRR Sensitive ADP Allocation	Weighted DRR Sensitive ADP Allocation																					
2010-11	1200	600																					
2011-12	3600	2000																					
2012-13	1600	900																					
2013-14	2000	1100																					
2014-15	0	0																					

5.5 Project Design Advance (PDA) for Coastal Town Improvement Project

Project Location

Char Gongamoti, Kolapara, Patuakhali.

Project Overview

Climate change and variability are critical development issues for Bangladesh, particularly in its low lying coastal areas naturally exposed to sea level rise, storm surges, and more frequent and intense storm events. The government, in its Sixth Five-Year Plan, has targeted assistance to vulnerable coastal populations with improvements in climate resilient water supply, sanitation, drainage, and flood protection infrastructure.

The project takes an integrated approach to urban environmental improvement in vulnerable coastal towns of Bangladesh that suffer deficits in basic urban services and are severely at risk to the impacts of climate change.

The project aims to provide climate resilient municipal infrastructure with key investments in water supply, sanitation, drainage, urban roads and bridges, solid waste management, slum improvements, and transport facilities.

The project design targets women and the poor. The project aims to help vulnerable coastal areas adapt to climate change. This ongoing project cost presently stands at \$120.4 million, of which \$56.0 million is financed with an Asian Development Fund loan and \$40.4 million co-financed by the Strategic Climate Fund (\$10.4 million grant, \$30.0 million loan). The government is financing the remaining \$24.0 million equivalent. The specific project locations are Barguna, Bhola, Patuakhali and Pirojpur districts. The executing agency for the PDA is the Local Government Engineering Department, who will implement the PDA in coordination with municipalities and/or city corporations. The project implementation period is 2014-2018.

Consultation with Implementation Agency

Various physical interventions are being undertaken to fulfill the goal of this project such as smart cyclone shelter building, piped water supply, sanitation facilities, emergency access roads, drainage connections, canal restoration, bridge construction etc. Though the project is still in the beginning phase, it is expected to have great impact on the poorer disadvantaged group like people living in slums and particularly on women. It is mainly because, the project is designed to be participatory, inclusive and it includes s Poverty Reduction Action Plan (PRAP) and Gender Action Plan (GAP). The major problems that are being faced during the implementation of the project are lack of awareness among people regarding the use and management of the built facilities. For example people throw their solid waste into the drainage system and make it dysfunctional or they encroach or grab lands from water bodies, which are very important for storm water storage and drainage. Pollution problem is also mainstream. To solve this problem the project is also undertaking extensive awareness program. The project impact may lead to many secondary benefits. The multi-purpose cyclone shelter they are building, is also help education as it is enhancing the infrastructure quality of a school. Also the cyclone shelter is a smart building as it has solar panel, rain water harvesting system, and separate facilities for women and killa (elevated open space in the lowest floor of a building) for livestock in the ground floor. To sustain the benefit of the project, a

regular follow up of the built infrastructures is required. An option is the project could be supported by the other future projects of the municipality authority.

Recommendations

Institutionally integrated project follow up system should be developed to sustain the benefits of the project.

Consultation with Project Beneficiaries

Interviewee: Focus Group Discussion (FGD) with project beneficiaries in ward no. 9, Barguna.

The community living near a cyclone shelter building project faces half a dozen of disasters every year. Cyclone, storm surge, flood, salinity are their major constraints for development. It is the same community who were once hard hit by the cyclone Sidr in 2007. They did not have any concrete adaptation strategy to fight against these disasters. They used to cope with these disasters by going to nearest higher ground or concrete buildings and used to rely on external reliefs. The cyclone shelters were far away and they did not have proper facilities for women, children and the elderly or livestock. This project will make their struggle a bit easier. This facility is very close one and it has considered all the facilities they need. It also helped strengthening their old school infrastructure.



Project site of Project Design Advance (PDA) for Coastal Town Improvement Project, Barguna Municipality.

Photo: NARRI

Recommendations

To enhance the project efficiency, the project beneficiaries suggested to incorporate some component would increase their resilience such as better education and income generation. They also asked for better fresh water technology during disasters and more access roads towards the cyclone shelter.

Table 5.7: Financial trend analysis of the project during 6th FYP period
(financial figures in Lakh Taka)

Project Title: Project Design Advance (PDA) for Coastal Towns Infrastructure Improvement Project					
Project ID: 006941 MoF Code: 37315078 ADP Sector: Physical Planning, Water Supply & Housing ADP Subsector: N/A Implementing Agency: Local Government Engineering Department Implementation Period: (01/05/2013- 30/04/2018) Lifetime: 5 years	Total Project Cost: 3494				
	Total Allocation	Total GoB Contribution	Total Project Aid	Total Revenue	Total Capital
	1506	224	1282	1462	44
DRR Sensitivity: Medium (55%)					
	DRR Sensitive Total ADP Allocation	DRR Sensitive Total GoB Contribution	DRR Sensitive Total Project Aid	DRR Sensitive Total Revenue	DRR Sensitive Total Capital
	828.3	123.2	705.1	804.1	24.2
2010-11	300	180	1200	650	1400
2011-12	300	180	1200	650	1400
2012-13	300	180	1200	650	1400
2013-14	300	180	1200	650	1400
2014-15	1200	650	1200	650	1400

5.6 Capacity Development on Natural Disaster Resilient Techniques of Construction and Retrofitting for Public Buildings

Project Location

Dhaka

Project Information

The project titled “Capacity Development on Natural Disaster Resilient Techniques of Construction and Retrofitting for Public Buildings” was implemented by Public Works Department under the Ministry of Housing and Public Works. The project started in 1st July, 2011 and was completed in 30th June, 2015. The aim was to develop capacity in building disaster resilient structures using retrofitting techniques and dissemination of relevant knowledge.

Consultation with Implementation Agency

Executive Engineer of Design Division, Public Works Department, was interviewed as the implementation authority of the project. As per the provided information, Dhaka city is vulnerable to earthquakes while the designs of existing buildings of the city are not resilient to earthquake shocks. The Bangladesh National Building Code (BNBC)¹ provides guidelines on constructing a resilient infrastructure. It addresses vulnerability to earthquake, salinity, etc. but does not provide guidelines increasing resilience of the existing buildings. Many countries of the world have already developed the guidelines that are largely missing in the context of Bangladesh.

Under this project, two buildings have already been retrofitted, which are, namely the Fire service and Civil Defense Station at Tejgaon of Dhaka district and a garments factory in Ashulia, Dhaka district. Two other buildings are in the process of being retrofitted. About 10 buildings are assessed in detailed way while 67 others have been preliminarily assessed. The main focus of retrofitting was to develop the capacity of the existing buildings to absorb shocks of earthquake. Concrete core and super structures were studied to assess and apply this technique.

The Tejgaon Fire Station was about 50 years old and was close to being considered for demolition. But the retrofitted this building is expected to last 40 more years without any problem. however, sometimes, retrofitting can hamper the normal functionality of the structure. Some people or elements have to be shifted which cause some inconvenience during the working stage. Retrofitting may cost 25-30 percent of what it would cost for a building to be rebuilt after demolishing it. The cost depends on the vulnerability level of the building.

In follow up of the project the second phase has started, which goes by the name “Project on Promoting Building Safety for Disaster Risk Reduction in the People’s Republic of Bangladesh.” This project aims at capacity development.

Consultation with Project Beneficiaries

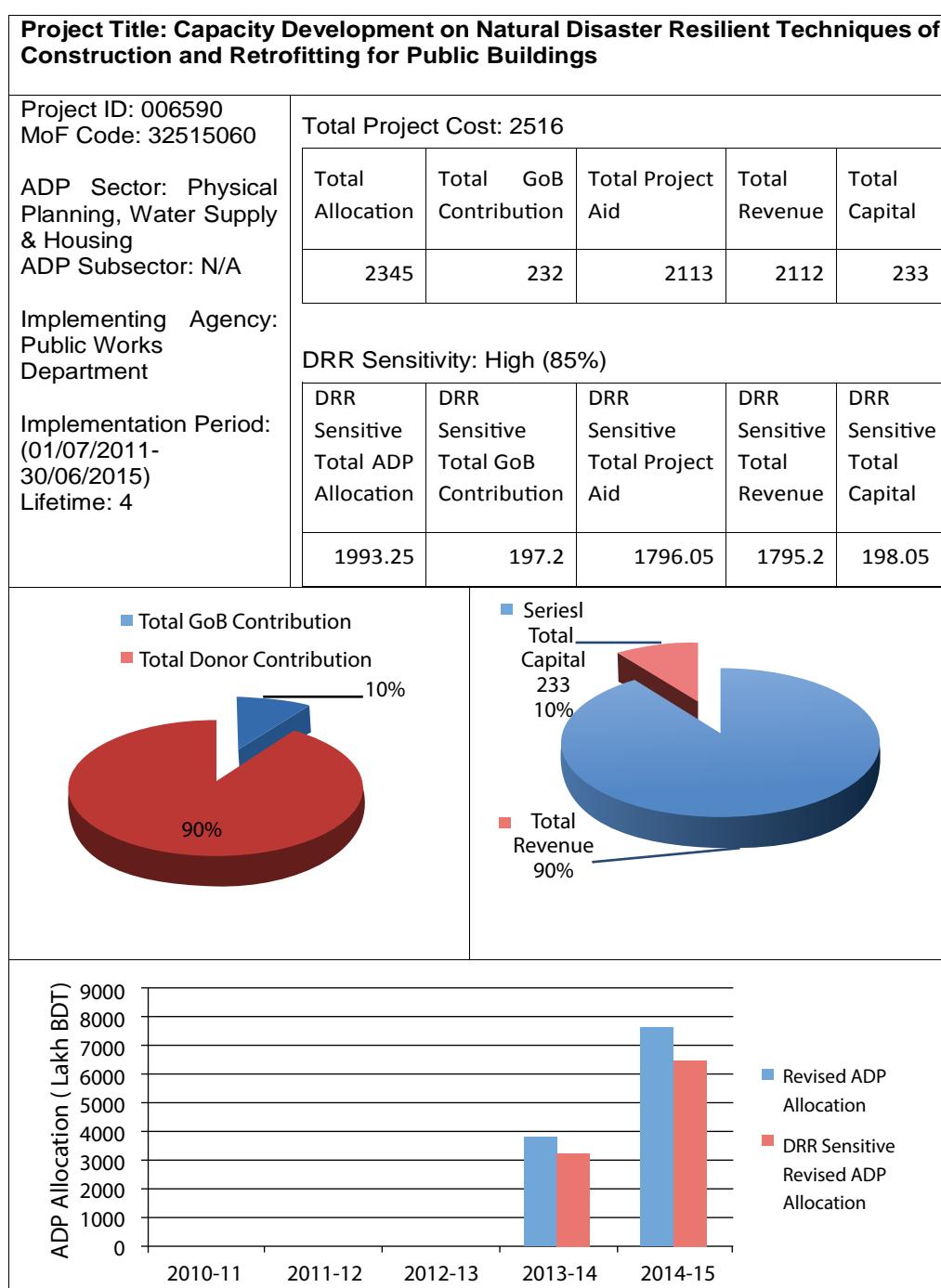
The Fire Service and Civil Defense station located at Tejgaon was visited to gather information about the implementation of the retrofitting project. An official of the FSCD was interviewed as he is working and staying here before the retrofitting started. According to him, the building was quite shaky and vulnerable to ground shaking. After the implementation of the project, the building has become more stable and resilient. The people staying or working here feel safer than they felt before. During the implementation stage people staying here had to face some inconvenience. They had to keep their cars in the yard. After implementation many of the problems were addressed.

¹http://pwd.gov.bd/document/library/BNBC_Part01.pdf

Recommendations

- Assistance from the higher level of the government for elaborated dissemination and integration of the knowledge about retrofitting
- Awareness campaigns on earthquake risk and building safety at a broader scale.
- Recruitment of trained manpower
- The knowledge needs to be integrated into curriculum of relevant educational institutes especially at postgraduate level
- A dedicated team of the Public Works Department needs to be assigned and trained for these works, as it is hard for the existing groups to handle.

Table 5.8: Financial trend analysis of the project during 6th FYP period
(financial figures in Lakh Taka)



Chapter 4

**Conclusions and
Recommendations**

This study was initiated to investigate the DRR & DP related interventions of ADP allocations in 6th Five Year Plan (FY 2011- FY 2015) period as well as to recommend how to address the existing loopholes to meet the future challenges for sustainable development following available national and international instruments. The introductory chapter focused on the context of disaster management of Bangladesh, the risk of the country in face of several forms of hazards most of which has recently been triggered by climate change related events and justified the need of a rigorous research to quantify the allocation for DRR & DP as well as its integration into the development projects implemented by the GoB.

The second chapter of the report provided a detailed idea about the methodology of this research. Tracking the allocations for DRR & DP in the development budget is always challenging, as the investment remains embedded in most of the instances. Therefore the sophisticated research methodology has been adopted to avoid the error or bias in data calculation as well as estimation. One major challenge in data processing and analysis was the subjectivity of data as it was gathered through KII and FGDs. The subjective nature of some of the findings point out the need for the development of appropriate coding system for expenditure tracking and monitoring.

Third chapter of the report made an analysis of the available policy instruments and programs related to DRR and DP in Bangladesh which were formulated or updated during the 6th Five Year Plan (FY 2011- FY 2015) period. The policies included namely, 6th Five Year Plan, Perspective Plan of Bangladesh, National Plan for Disaster Management, The Comprehensive Disaster Management Program, Standing Orders on Disasters, Cyclone Shelter Construction, Maintenance and Management Policy, Draft National Disaster Management Policy. Some key issues in Sendai Framework for Disaster Risk Reduction were also highlighted to check their integration into the national policies.

The budgetary data has been analyzed and explained in the fourth chapter of the report. In this study 2125 development projects, grossly modo, during Sixth Five Year Plan Period (2011-2015) from 39 ministries were taken into account. The total allocation for these projects was 270962 crore Taka. Six relevant ministries were selected which implemented 699 projects during the 6th FYP period. Out of the 699 projects, 164 were finally selected as disaster sensitive for detailed analysis. The DRR sensitive projects were later weighted and classified into three categories as per their relevance with DRR & DP. From the trend analysis it appeared that the disaster sensitive allocation for the 6 ministries was around 3.8% of total ADP allocation during 6th FYP period.

Fifth chapter of the report represents the insights from the field. Six different projects, one from each of the six selected ministries, were identified. The project implementation authorities as well as the beneficiaries were interviewed to understand the reality of DRR & DP integration into the development projects of Bangladesh. Several key findings and challenges came up through this field investigation.

The 6th Five Year Plan of GoB states that 1.8% of the annual GDP of Bangladesh is lost due to disasters, which is, almost equivalent to 10% of the national budget of Bangladesh¹. The situation clearly reveals the necessity of integrating DRR & DP into national development policies and projects. This research has tried to quantify the allocation and identify the gaps. But the answer on the investment gap against the annual loss of 1.8% GDP is largely missing. Once we know where we want to go, getting there will be so much easier. But on the basis of the research findings it is not reliable to predict the amount of investment required for meeting the loss.

In addition, the research was carried out with several limitations. Data extraction complexities, absence of digital database system were the major barriers towards smooth functioning of the research. Some major findings of this research have been established based on the interviews with government officials

¹<http://www.plancomm.gov.bd/sixth-five-year-plan/>

and experts of disaster management as well as group discussions with the project beneficiaries. The findings, therefore, have been subjective in nature. Moreover, time and resource constraints were also putting some hindrances which were finally overcome with the dedication of the researchers.

The overall research finally draws the conclusion that there is still ample scope for in-depth research to find out the details of development allocation & expenditure for DRR in Bangladesh. The government has consistently increased the gross allocation for DRR in 6th FYP period that comply with the 3rd priority action of Sendai Framework for DRR which states that, “Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment”¹.

Although the research demonstrates strong policy provisions for DRR, there is evidently low alignment of disaster sensitive allocation in the overall development budget. Therefore, the policy provisions are not well translated in to concrete actions. There is also insufficient understanding of the inclusion of structural and non-structural vulnerability in the project formulation as well as project implementation phases. This information asymmetry can be a barrier for DRR investment towards attaining its maximum return. The understanding between implementation agencies and the beneficiaries need more bridging. Hence, the following points are recommended for the stakeholders concerned about DRR in policy making level.

A) Integration of SFDDR, SDG's in national policies

National policies need to carefully integrate the global policy documents (e.g. Sendai Framework, Sustainable Development Goals) to determine the objective, vision and mission. Although the 7th FYP has integrated the SDGs, but a review can be done to incorporate the pillars of SFDRR.

B) Enhancing communication between ministries

There should be an official focal point in the relevant ministries to provide climate change and disaster management related financial information. The study shows that not only the 6 ministries have relevant investment for DRR part. There are several other ministries, e.g. Ministry of Education, Ministry of Women and Children Affairs, have carried out DRR related activities. Information and knowledge on the DRR issues need to be managed through intra and inter agency cooperation. A focal point can help in this regard.

C) Disaster Perspective Plan

Disaster perspective plan for 2030 could be formulated in accordance with the global policy instruments and national development priorities. This will provide strategic guidance to address the upcoming challenges in DRR and safeguard the public investment for the same purpose. 2030 marks the end of the SDG's and SFDRR. So, to complement the implementation of SDG's, SFDRR a new disaster perspective plan can provide visionary goals and strategic directions for overall disaster management including DRR & DP.

D) Project design

In each ADP more than 200 new projects are included with allocations. These projects should be designed in a standardized technique to objectively address the DRR components and increase the visibility of the embedded investments for DRR. The call for the review of the DPP format for addressing and complying with DRR issues and regulations as mentioned is page 6, the government has already reviewed the DPP format and includes “climate change and disaster” to be addressed for the targets of the projects. In addition, project titles, wherever possible, should precisely reflect the DRR objectives as per DPP.

E) Economic Codes for disaster management

DRR/DP/DRM expenditures could be integrated into the existing classification of economic codes/sub-codes. This will help in allocating and tracking public investment on disaster risk reduction.

¹Page18 - Sendai Framework for Disaster Risk Reduction 2015 - 2030

F) Disaster Impact Assessment (DIA)

At present the DPP includes the provision of Environmental Impact Assessment (EIA), which is not a comprehensive approach to assess hazard risk of development projects. In a separate article, Disaster Impact Assessment (DIA) should be added as an item in DPP in case of DRR sensitive projects that would be based on Disaster Risk Assessment i.e. CRA¹ & URA².

G) Central Database Management System

The database of Programming Division, IMED & the Ministry of Finance could be interlinked to exchange digital data and information. A central database management system will help to preserve the clean data and remove the digital data extraction complexities.

H) Lag Time Reduction

Sometimes the lag time³ becomes a constraint, as it lessens the project efficiency. The time gap between the inception of a project and its implementation puts the relevance of some projects at risk.

I) Smart Indicator Development

Smart indicators for monitoring and evaluation should be developed and applied to review the extent of DRR being addressed by a particular project.

¹Community Risk Assessment

²Urban Risk Assessment

³Difference between project approval date and actual start date

Annex I: Aims and Objectives of MTBF¹

Establishing linkage between strategic objectives stated in the policy documents of the Government and resource allocation

- Delegating more responsibility and authority to the line ministries
- Institutionalizing a system for measuring outputs/ results from the resources allocated
- Improving budget discipline and predictability
- Achieving greater budget effectiveness

Basics of Bangladesh MTBF

- Government budget is prepared within a medium-term context and include estimates and projections of revenues, financing and expenditures for the coming fiscal year and four outer years.
- Line ministries are allowed to plan their programmes in the knowledge of expected future funding levels.
- MTBF provides for more explicit linkage between government spending plans and its strategic policy objectives.
- Line ministries are being given greater authority over the allocation and management of budgetary resources in order that they can manage their programme more effectively and efficiently.
- Resource allocation is linked to performance criteria through MTBF frameworks

Building Blocks of MTBF

- A macroeconomic and fiscal framework
- An analysis of key strategies and choices
- Ministry level budget strategy frameworks
- Resource ceilings and expenditure plans
- Strengthened budget implementation procedures

Selected Ministry Wise MTBF Analysis (2014-2015)

Ministry of Agriculture

(Taka in Thousand)

Description	Budget 2014 -2015	Projection	
		2015 - 2016	2016 - 2017
Non – Development	10872,00,00	11415,52,88	12255,25,73
Development	1524,10,00	1918,26,12	2145,23,27
Total	12396,10,00	13333,79,00	1440,49,00
Revenue	11344,72,54	12365,20,16	13937,82,59
Capital	1051,37,46	968,58,84	462,66,41
Total	12396,10,00	13333,79,00	14400,49,00

¹https://www.mof.gov.bd/en/index.php?option=com_content&view=article&id=357&Itemid=1

Mission Statement:

Ensure food security by increasing productivity and production in the crop sector, improving marketing system as well as diversification of crops and production of more nutritious crops

Major Functions:

- Agricultural research and education program;
- Agricultural extension and training;
- Production, standardization, certification, preservation and distribution of quality seeds;
- Survey and examination of the quality of soil, and recommendations;
- Preservation and marketing of agricultural products;
- Agricultural support and rehabilitation;
- Innovation, procurement and management of agricultural inputs and machinery;
- Small irrigation programs.

Ministry of Environment and Forests

(Taka in Thousand)

Description	Budget 2014 - 2015	Projection	
		2015 - 2016	2016 - 2017
Non – Development	499,00,00	548,90,15	603,79,23
Development	412,87,00	455,58,85	501,13,77
Total	911,87,00	1004,49,00	1104,93,00
Revenue	619,08,46	682,42,59	750,65,93
Capital	292,78,54	322,06,41	354,27,07
Total	911,87,00	1004,49,00	1104,93,00

Mission Statement: Ensure habitable and sustainable environment for the present and the future generations of the country.

Major Functions:

- **Disaster Preparedness:** A project has been taken up to construct 200 multipurpose cyclone shelters in 78 upazilas of 14 coastal districts with a view to strengthening disaster response capacity. Along with the construction of physical infrastructure, the government has taken initiatives to create an efficient disaster response system and trained volunteer team for combating disaster.
- **Afforestation and Preservation of Bio-diversity:** Thirty four forests have been declared as reserve forests to preserve bio-diversity. To protect ecological balance, the government has taken up plans to carry out extensive afforestation in degraded forests, marginal and private land. Along with this, the concept of social afforestation is being used as a tool to protect biodiversity and reduce poverty.
- **Encouraging Environment-friendly Activities:** Bangladesh Bank has created a refinancing scheme to finance environment friendly products and sectors like solar energy, biogas plant, affluent treatment plant, etc. In order to reduce health hazards of mother and child and to save energy, around 20 lakh smoke-free improved stoves have been installed in households across

the country. There is a plan to install around 3 crore environment friendly stoves by 2030.

- **Eco-tourism:** We have taken a number of steps to expand eco-tourism industry.
- **Jute Products for Environmental Protection:** In order to protect erosion of river banks, roads and highways, a field trial of environment friendly jute geo-textile in Bangladesh and India has been completed following its invention

Ministry of Local Government

Local Government Division Mission Statement: Improve the living standard of the people by strengthening local government system, development of rural and urban infrastructure and implementation of socio-economic activities.

Rural Development and Co-operatives Division Mission Statement:

Improve the socio-economic conditions of the poor people living in rural areas through integrated rural development, cooperative-based activities and continuous research on rural development.

Local Government Division

(Taka in Thousand)

Description	Budget 2014 -2015	Projection	
		2015 - 2016	2016 - 2017
Non – Development	2001,00,00	2161,07,98	2333,96,54
Development	13457,00,00	14358,73,02	15837,83,43
Total	15468,00,00	16519,81,00	18171,79,97
Revenue	3061,89,55	3306,84,69	3571,39,43
Capital	12406,10,45	13212,96,31	14600,40,54
Total	15468,00,00	16519,81,00	18171,79,97

Rural Development and Co-operatives Division

(Taka in Thousand)

Description	Budget 2014 -2015	Projection	
		2015 - 2016	2016 - 2017
Non – Development	330,01,00	382,47,31	377,85,66
Development	1186,63,00	955,59,69	1094,02,34
Total	1516,64,00	1338,07,00	1471,88,00
Revenue	1172,03,48	984,46,23	1446,85,60
Capital	344,60,52	353,60,77	25,02,40
Total	1516,64,00	1338,07,00	1471,88,00

Ministry of Housing and Public Works

Ministry of Housing and Public Works

(Taka in Thousand)

Description	Budget 2014 -2015	Projection	
		2015 - 2016	2016 - 2017
Non-Development	985,99,00	1036,21,78	1110,61,03
Development	1073,47,00	1218,19,22	1369,23,97
Total	2059,46,00	2254,41,00	2479,85,00
Revenue	1015,42,26	1929,99,20	2337,00,45
Capital	1044,03,74	324,41,80	142,84,55
Total	2059,46,00	2254,41,00	2479,85,00

Mission Statement: Well planned housing and urbanization through proper use and development of lands to improve living standard of the people.

Major Functions

- Integrated Development Plan for Urbanization: Ensuring housing for all along with planned urbanization is one of the main pledges of our government. Detailed Area Plans for Dhaka and Khulna metropolis, and structural plans for Sylhet and Barisal divisions, expansion of Khulna metropolis to Mongla, and Chittagong metropolis have been formulated. An integrated plan has also been formulated for development of tourism in Cox's Bazar, Teknaf, Saint Martin and Moheshkhali. Moreover, formulation of Detailed Area Plan for Madaripur and Rajoir upazila and an action area plan for Benapol- Jessore highway corridor is in progress.
- Extension of Housing Facilities: Construction of around 43 thousand apartments in Dhaka and other divisional cities, districts and upazila is in progress.
- House Building Loans: Government has taken up several programmes to establish housing funds to provide loans to rural poor and to construct hostels/dormitories for the workers.

Ministry of Disaster Management and Relief

Mission Statement: To reduce risks for people, especially the poor and vulnerable, by strengthening the overall capacity of disaster management and to establish an efficient and capable emergency disaster response system to face large scale disasters.

Ministry of Disaster Management and Relief

(Taka in Thousand)

Description	Budget 2014 -2015	Projection	
		2015- 2016	2016- 2017
Non-Development	4861,49,13	5347,64,10	5882,40,58
Development	2425,39,05	2429,33,90	2672,27,42
Total	7286,88,18	7776,98,00	8554,68,00
Revenue	4948,20,88	5443,03,02	5987,33,40
Capital	2338,67,30	2333,94,98	2567,34,60
Total	7286,88,18	7776,98,00	8554,68,00

Major Functions:

- The Disaster Management Act-2012 has been promulgated. Construction, maintenance and management policy for cyclone shelters had been approved earlier. A programme has been undertaken to send the emergency messages to the disaster prone people through cell phones, and under this programme, pilot projects have been implemented in the districts of Cox's Bazar and Sirajgonj. New chapters on disaster risk reduction programme and emergency humanitarian assistance, fire, earthquake and tsunami have been included in the Standing Order on Disaster (SOD). The National Work Plan 2010-15 on disaster management has been formulated. Through Interactive Voice Response (IVR), weather forecastings including updated disaster messages can be known by dialing mobile phone number 20941. Besides, arrangements have been made to send disaster warnings and risk reduction messages through SMS. In the last three financial years, under the ultra-poor employment program, a total of 21.20 lakh unemployed ultra-poor rural workers have been given 80 days of employment; one third of them being women.
- From FY 2010-11 to FY 2012-13, 97951 projects have been completed under the Rural Infrastructure Reform (FFW) Programme spending 8.69 lakh MT of food grains, resulting in generation of employments for 32.68 lakh poor people, helping huge development of rural communication system. Under Rural Infrastructure Maintenance (TR) Programme, 566606 schemes have been implemented with 10.34 lakh MT of food grains, generating employments for 39.39 lakh poor people. As a result, there has been significant institutional development in educational, religious and public welfare institutions including rural infrastructure development. Under VGF programme, a total of 5.30 lakh MT of food grains have been distributed to 2.52 crore ultra-poor helpless destitute families.

Ministry of Water Resources

Mission Statement:

Ensure fulfilling the requirement of water for the people and sustainable development through balanced and integrated management of water resources.

Ministry of Water Resources

(Taka in Thousand)

Description	Budget 2014 - 2015	Projection	
		2015 - 2016	2016 - 2017
Non– Development	788,00,00	851,03,99	919,12,35
Development	2831,00,00	2892,26,01	3198,50,64
Total	3619,00,00	3743,30,00	4117,62,99
Revenue	1067,44,85	1147,24,83	1233,09,67
Capital	2551,55,15	2596,05,17	2884,53,32
Total	3619,00,00	3743,30,00	4117,62,99

Major Functions:

Expansion of Irrigation Facility, Flood Control and Protection of River Erosion: Due to expansion of irrigation facilities to the flood free areas, the production of food grains has increased manifold. During our current term, government will continue to bring new areas under irrigation facilities and take steps to protect them from flood. Government is implementing projects for the protection of riverbanks and townships prone to erosion while continuing with new projects of this kind.

Integrated Water Management of the Ganges Basin and Coastal Area Management: Work is going on at several levels to build a barrage on the Ganges River. We ('we' seems out of context here) have devised a priority investment programme for comprehensive and integrated development of the coastal region of the country. To this end, along with other development projects, 111 projects at a cost of Tk. 1 thousand 9 crore have been taken up under the Bangladesh Climate Change Trust Fund. There will be a budget allocation of Tk.100crore for this fund for the next fiscal.

Rehabilitation of Landless People of the Char Region: For the socio-economic development of the char region, Government plans to reclaim 20 thousand hectares of land by constructing cross dams in the coastal areas, and rehabilitate 16 thousand families there.

Annex II: List of Identified DRR sensitive 164 Projects

#	Title	Implementing Agency	DRR Sensitivity
ADP Sector: Agriculture			
Ministry of LGRDC (RDCC)			
1.	Action Research on Integrated Water Management (1st Revised) (01/01/2011-31/12/2014)	Rural Development Academy, Bogra	Low
Ministry of Disaster Management and Relief			
2.	Capacity Building for Disaster Risk Financing (01/01/2013-30/06/2015)	Ministry of Disaster Management and Relief	High
3.	Construction of Bridge/Culvert (upto 12 m long) on the Rural Bypass Road (2nd phase) (1/7/09-30/6/12)	Directorate of Relief and Rehabilitation	Medium
4.	Construction of Bridge/Culverts (upto 12m long) on the Rural Roads at Chittagong Hill Tracts Region (01/07/2010-30/06/2013)	Directorate of Disaster Management	Medium
5.	Construction of Flood Shelter in the Flood prone and river erosion areas (Revised) (01/07/2008-30/06/2010)	Directorate of Relief and Rehabilitation	Medium
6.	Construction of Flood Shelters in the Flood-Prone and River Erosion Areas (Phase-2) (01/07/2013-30/06/2016)	Directorate of Disaster Management	Medium
7.	Construction of Multipurpose Cyclone Shelters in the Coastal Belt of Bangladesh (01/03/2011-31/12/2014)	Directorate of Disaster Management	Medium
8.	Construction of Small Bridges/Culverts (up to 12 m Long) at Chittagong Hill Tracts Region (2nd Phase) (01/01/2014-31/12/2016)	Directorate of Disaster Management	Medium
9.	Construction of small Bridges/Culverts (upto 12m long) on the Rural Roads (01/07/2012-30/06/2015)	Directorate of Disaster Management	Medium
10.	Procurement of Saline Water Treatment Plant (01/07/2013-31/12/2015)	Department of Public Health Engineering	High

#	Title	Implementing Agency	DRR Sensitivity
Ministry of Environment and Forests			
11.	Afforestation in the Denuded Hill Areas of Chittagong North Forest Division (2nd Phase) (1st Revised) (01/07/2008-30/06/2013)	Department of Forest	Medium
12.	Clean Air and Sustainable Environment (CASE) Project (2nd Revised) (01/07/2009-30/11/2016)	Department of Environment	High
13.	Climate Change Capacity Building and Knowledge Management (01/01/2012-30/06/2014)	Ministry of Environment & Forests	High
14.	Climate Resilient Participatory Afforestation and Reforestation (01/07/2012-31/12/2016)	Department of Forest	High
15.	Community Based Adaptation to Climate Change through Coastal Afforestation in Bangladesh (1st Revised) (01/07/2009-30/06/2014)	Department of Forest	High
16.	Community Based Sustainable Management of Tanguar Haor (Phase-III) (01/07/2012-30/06/2015)	Ministry of Environment & Forests	Medium
17.	Community Based Sustainable Management of Tanguar Haowar Project (2nd Phase) (01/04/2010-30/04/2012)	Ministry of Environment & Forests	Medium
18.	Participatory Social & Extension Forestry in Chittagong Hill Tracts (01/07/2008-30/06/2013)	Department of Forest	Medium
19.	Preparation of the Full Size Project Document on Ecosystem Based Approach to Adaptation (EBA) in Drought Prone Barind Tract and Haor Wetland Area (01/11/2014-30/05/2015)	Department of Environment	Medium
20.	Restoration and Conservation of Biodiversity in the Denuded Hills of Sitakunda, Mirsharai, Banskhali, Inani Forest Area, Barind Dhamuirhat Sal Forest and Singra Sal Forest (01/07/2011-30/06/2014)	Department of Forest	Medium
21.	Secretariat for Bangladesh Climate Change Resilience Fund (01/07/2013-31/03/2014)	Ministry of Environment & Forests	High
22.	Strengthening the Environment, Forestry and Climate Change Capacities of the Ministry of Environment and Forests and its Agencies (30/10/2013-30/10/2016)	Ministry of Environment & Forests	Low
32.	Sundarban Environmental and Livelihood Security (SELS) (1st Revised) (01/10/2010-31/12/2014)	Department of Forest	Medium
24.	Support to Essential Management Capacity in the Sundarban World Heritage Site Following the Passage of Cyclone SIDR (Phase-II) (01/05/2010-28/02/2011)	Department of Forest	High
25.	Supporting Implementation of the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) (01/07/2009-31/12/2013)	Ministry of Environment & Forests	High

#	Title	Implementing Agency	DRR Sensitivity
26.	Sustainable Development and Biodiversity Conservation in Coastal (Protection) Forest (SDBC-Sundarban) (01/07/2012-30/06/2015)	Department of Forest	Medium
Ministry of Agriculture			
27.	Construction of Rubber Dams in Small & Medium River for Increasing of Food Production (01/07/2009-30/06/2016)	Department of Agricultural Extension	Medium
28.	Emergency 2007 Cyclone & Restoration Project (ECRRP): Recovery of Agriculture Sector (Crops) and Improvement Programme (01/08/2008-30/06/2014)	Department of Agricultural Extension	Medium
29.	Enhancing Food Security Through Improved Crop Water Management Practices in the Southern Coastal Areas of Bangladesh (01/03/2013-31/12/2014)	Department of Agricultural Extension	High
Ministry of Water Resources			
30.	Dhepa River Left Bank Flood Control, Drainage and Irrigation Project (01/08/2010-30/06/2012)	Bangladesh Water Development Board	High
31.	Dhepa-Punorbhaba Water Management under Biraj Upazila in Dinajpur District (1st Revised) (01/07/2006-30/06/2011)	Bangladesh Water Development Board	Low
32.	Environmental Impact Assessment (EIA) Study of Different BWDB Project to be Implemented under Climate Change Trust Fund (01/10/2012-31/12/2013)	Bangladesh Water Development Board	Medium
33.	Integrated Flood Control, Drainage and Irrigation Project at Right Bank of Karotoa River (01/07/2013-30/06/2014)	Bangladesh Water Development Board	High
34.	Muhuri-Kahua Flood Control, Drainage and Irrigation Project (1st Revised) (01/07/2004-30/6/2012)	Bangladesh Water Development Board	High
35.	Re-excavation of Bairab River Project (01/07/2014-30/06/2016)	Bangladesh Water Development Board	Medium
36.	Rehabilitation of Bhutiar Beel and Barnai-Salimpur-Kulabashukhali Flood control and Drainage Project in Khulna Districts (2nd Phase) (01/10/2013-30/06/2018)	Bangladesh Water Development Board	High
37.	Rehabilitation Works of Teesta Main Canal and Related Structures under Command Area of Teesta Barrage Project (01/07/2012-30/06/2014)	Bangladesh Water Development Board	Low
38.	Southwest Area Integrated Water Resources Planning and Management Project. (Special Revised) (1/4/06-30/6/14)	Bangladesh Water Development Board	Medium
39.	Surma Right Bank Flood Control, Drainage and Irrigation Project (01/07/2011-30/06/2014)	Bangladesh Water Development Board	High
40.	Tarail Pachuria Flood Control Drainage and Irrigation Project (2nd Phase) (01/03/2010-30/06/2014)	Bangladesh Water Development Board	High

#	Title	Implementing Agency	DRR Sensitivity
41.	Teesta Barrage Project, 2nd Phase (Unit-1) (2nd Revised) (01/07/2006-30/06/2015)	Bangladesh Water Development Board	Low
ADP Sector: Physical Planning, Water Supply & Housing			
Ministry of Housing and Public Works			
<p>42. A Study and Determination of the Geotechnical Properties of Soil under Detail Area Plan (01/07/2014-31/12/2015)</p> <p>43. Application of Ferrocement Technology in Rural Housing (01/07/2014-31/12/2015)</p> <p>44. Capacity Development on Natural Disaster Resilient Techniques of Construction and Retrofitting for Public Buildings. (01/07/2011-30/06/2015)</p> <p>45. Experiment and Disseminations of Sustainable Cost Effective Houses Against Natural Disasters (01/07/2010-30/06/2013)</p> <p>46. Preparation of Detailed Area Plan for Khulna Master Plan Area (01/01/2009-30/06/2014)</p> <p>47. Preparation of Development Plan of Cox's Bazar and Sea-beach upto Tacknaf (01/01/2009-31/12/2010)</p> <p>48. Preparation of Structure Plan, Master Plan and Detailed Area Plan upto Mongla Town by Extending the Southern Boundary of Khulna Master Plan (1st Revised) (1/7/2005-31/12/2011)</p> <p>49. Preparation Structure Plan and Action Area Plan for Madaripur and Rajair Upazillas of Madaripur District (01/01/2013-30/06/2014)</p> <p>50. Study of production of high strength economy clay brick and created masonry block by adapt in high-rise building at Dhaka city (01/01/2009-31/12/2010)</p> <p>51. Study on Exploration and Development of Alternative to Bricks (01/07/2014-31/12/2015)</p>			
Ministry of LGEDC (LGD)			
52.	Arsenic Mitigation Project Ground Water Management and TAPP for Survey, Investigation and Feasibility Study in Upazila and Growth Center Level Pourashavas Having no Pipe Water Supply System (1/7/2007-30/6/2014)	Department of Public Health Engineering	Low
53.	Coastal Town Infrastructure Development (01/01/2014-31/05/2020)	Local Government Engineering Department	High

#	Title	Implementing Agency	DRR Sensitivity
54.	Construction of Drains to Alleviate Water Logging Problem at Rajshahi City (3rd Phase) (01/07/2013-30/06/2016)	Rajshahi City Corporation	High
55.	Emergency Disaster Rehabilitation (Sector) Project-2007 (Part-C, Municipal Infrastructure) (01/01/2008-31/03/2011)	Local Government Engineering Department	Low
56.	Enhancing climate Resilience in Water Supply, Drainage and Sanitation system in Coastal Areas due to climate change (01/11/2011-31/08/2013)	Local Government Engineering Department	High
57.	Improvement of Physical Infrastructure, Drainage and Water Supply System in Khulna City (01/07/2007-30/06/2010)	Khulna City Corporation	Low
58.	Infrastructure Development of Bhola Pourashava (01/11/2013-31/10/2015)	Local Government Engineering Department	Medium
59.	Project Design Advance (PDA) for Coastal Towns Infrastructure Improvement Project (01/05/2013-30/04/2018)	Local Government Engineering Department	Medium
60.	Project Rural Water Supply in South Western Part of Bangladesh (1/7/2007-30/6/2013)	Department of Public Health Engineering	High
61.	Rehabilitation and Maintenance SIDR Effected Infrastructure Facilities of Barisal Town (01/07/2010-30/06/2011)	Barisal City Corporation	High
62.	Removal of Water Logging in Dhaka City (Phase-2) (1st Revised) (1/7/2010-30/6/2014)	Dhaka WASA	High
63.	Survey to Mitigation Water Logging Problem in Khulna City (01/07/2009-30/06/2011)	Khulna City Corporation	High
64.	Water Supply and Sanitation Project in Cyclone prone & SIDR affected Coastal Areas of Bangladesh (1st Revised) (01/07/2010-30/06/2015)	Department of Public Health Engineering	Medium
ADP Sector: Public Administration			
Ministry of Disaster Management and Relief			
65.	Comprehensive Disaster Management Programme (2nd Phase) (01/01/2010-31/12/2014)	Ministry of Disaster Management and Relief	High
66.	Disaster Preventive Reconstruction in Selective Communities in the Costal District of Barguna and Patuakhali (01/07/2011-30/06/2012)	Directorate of Disaster Management	High
67.	Emergency 2007 Cyclone Recovery & Restoration Project (ECRRP): Disaster Risk Mitigation and Reduction (Sub Component D-1) (Revised) (01/08/2008-30/06/2014)	Directorate of Disaster Management	High

#	Title	Implementing Agency	DRR Sensitivity
68.	Procurement of Equipment for Search and Rescue Operation for Earthquake and Other Disasters (1/7/2006-30/6/2010)	Directorate of Disaster Management	High
ADP Sector: Rural Development & Rural Institutions			
Ministry of LGRDC (LGD)			
69.	Climate Change Adaptation Project (01/07/2015-30/06/2016)	Local Government Engineering Department	Low
70.	Climate Resilient Infrastructure Improvement in Coastal Zone (01/10/2011-29/02/2012)	Local Government Engineering Department	High
71.	Construction of Multipurpose Disaster Shelter (01/07/2015-30/06/2020)	Local Government Engineering Department	High
72.	Construction of Newly Created & River Eroded Upazila Parishad Complex Bhabans (Revised) (1/7/2005-31/12/2015)	Local Government Engineering Department	Medium
73.	Construction of Submersible Road in Haor Area of Mithamoin & Asutagram Upazila under Kishorganj District (01/01/2013-30/06/2015)	Local Government Engineering Department	Low
74.	Coastal Climate Resilient Infrastructure Improvement Project (01/07/2012-30/06/2017)	Local Government Engineering Department	High
75.	Emergency 2007 Cyclone Recovery and Restoration Project (ECRRP) (Revised) (01/08/2008-31/12/2017)	Local Government Engineering Department	High
76.	Emergency Disaster Damage Rehabilitation (Sector) Project-2007 (Part-B: Rural Infrastructure) (01/01/2008-31/12/2010)	Local Government Engineering Department	Low
77.	Enhancing Resilience under Bangladesh Country Programme (01/07/2008-30/06/2012)	Local Government Engineering Department	High
78.	Haor Flood Management and Livelihood Increment (01/07/2015-30/06/2022)	Local Government Engineering Department	High
79.	Haor Infrastructure and Livelihood Improvement Project (01/07/2012-30/06/2019)	Local Government Engineering Department	Medium
80.	Local Climate Adaptive Living for Selected Upazils and Union Parishads of Bangladesh (01/01/2014-30/06/2015)	Local Government Division	High
81.	Rehabilitation of Aila Affected Rural Infrastructure (RAARIP) (1st Revised) (01/01/2011-30/06/2015)	Local Government Engineering Department	High

#	Title	Implementing Agency	DRR Sensitivity
82.	Rehabilitation of Rural Infrastructure Damaged in Gaibandha and Kurigram District by Flood 2007 (01/07/2010-30/06/2011)	Local Government Engineering Department	Medium
83.	Sustainable Rural Infrastructure Improvement Project (SRIPP) (01/01/2011-30/06/2016)	Local Government Engineering Department	Low
84.	WFP Assisted Enhancing Resilience to Disaster and the Effects of Climate Change Project (01/01/2012-31/12/2016)	Local Government Engineering Department	High
ADP Sector: Water Resources			
Ministry of Water Resources			
85.	Bank Protection of Jamuneswary, Chickly and Charalkata River at Kishoregonj, Taragonj of Badarganj Upazila (01/01/2015-30/06/2017)	Bangladesh Water Development Board	High
86.	Bank Protective Work Along the Left Bank of Madhumati River at Fukra and Both Bank of Madaripur BeelRoute Channel at Koligram and Manikdaha in Gopalganj District (01/01/2011-30/06/2014)	Bangladesh Water Development Board	High
87.	Bharaib Bandar Protection Project (01/04/2010-30/06/2013)	Bangladesh Water Development Board	High
88.	Bhola Town Protection Project (3rd Phase) (01/07/2012-30/06/2015)	Bangladesh Water Development Board	Medium
89.	Blue Gold Program (BWDB Component) (01/01/2013-31/12/2018)	Bangladesh Water Development Board	Medium
90.	Buriganga River Restoration Project (New Dhaleswari-Pungi-Bangshai- Turag- Buriganga River System) (1/4/2010-31/12/2015)	Bangladesh Water Development Board	Medium
91.	Capital (Pilot) Dredging of River System in Bangladesh (st Revised) (1/3/2010-30/06/2016)	Bangladesh Water Development Board	Medium
92.	Char Development and Settlement Project-IV (CDSPIV) (01/01/2011-31/12/2016)	Bangladesh Water Development Board	Medium
93.	Charfesson and Monpura Town Protection Project in Bhola District (1st Revised) (01/07/2009-30/06/2014)	Bangladesh Water Development Board	Medium
94.	Coastal Embankment Improvement Project Phase-1 (CEIP-1) in Satkhira, Khulna, Bagerhat, Pirojpur, Barguna and Patuakhali District (01/07/2013-30/06/2015)	Bangladesh Water Development Board	High
95.	Construction of Embankment and other Ancillary Works in Tannery Industrial Area Under Savar Upazila in Dhaka District (01/07/2007-30/06/2011)	Bangladesh Water Development Board	High

#	Title	Implementing Agency	DRR Sensitivity
96.	Construction of Embankment from Kazirhat to Satbaria in Pabna District (1st Revised) (1/7/2005-30/6/2011)	Bangladesh Water Development Board	High
97.	Construction of Embankment from Zia Nagar to Hularhat in Pirojpur District (1st Revised) (1/7/2005-30/6/2012)	Bangladesh Water Development Board	High
98.	Construction of Sonahat Bridge and Bhurungamari-Madargong Road from the Erosion of Dudhkumar River at Bhurungamari Upazilla & Bank Revetment Work at Left Bank of Teesta River from Gunajgach to Bozra Senior Madrasha at Ulipur Upazilla in Kurigram District	Bangladesh Water Development Board	High
99.	Development Phase of Water Management Infrastructure in Bhola District (DWMB Project (27/01/2013-30/06/2015)	Bangladesh Water Development Board	Low
100.	Emergency 2007 Cyclone Recovery and Restoration Project (ECRRP) (BWDB Part) (1st Revised) (01/08/2008-30/06/2014)	Bangladesh Water Development Board	High
101.	Emergency Disaster Damage Rehabilitation (Sector) Project-2007 (Part-E: Water Resource) (2nd Revised) (01/01/2008-31/03/2011)	Bangladesh Water Development Board	High
102.	Environmental Impact Assessment (EIA) Study of 30 different BWDB Project to be Implemented under Climate Change Trust Fund (CCTF) (01/10/2012-30/06/2014)	Bangladesh Water Development Board	Medium
103.	Estuary Development Programme (01/07/2002-30/11/2011)	Bangladesh Water Development Board	Medium
104.	Excavation of a Pilot Channel at the Downstream of Feni Regulator under Sonagazi Upazilla of Feni District and Bank Protection Works on the Left Bank of Feni River at Pashchimjoar under Mirsarai Upazilla of Chittagong District (01/10/2011-30/06/2014)	Bangladesh Water Development Board	High
105.	Excavation of Chandana-Barasia River (1st Revised) (01/07/2010-30/06/2014)	Bangladesh Water Development Board	Medium
106.	Faridpur Town Protection Project (01/12/2009-30/06/2014)	Bangladesh Water Development Board	Medium
107.	Feasibility Study and Detailed Engineering for Ganges Barrage Project (1/7/2004-30/6/2014)	Bangladesh Water Development Board	Medium
108.	Feasibility Study/Survey for Integrated Water Management Project of Gangajuri Howar Area (01/08/2009-30/06/2011)	Bangladesh Water Development Board	Low
109.	Flood and Bank Erosion Risk Management Program (01/07/2014-30/06/2019)	Bangladesh Water Development Board	High
110.	Gorai River Restoration Project (2nd Phase) (3rd Revised) (01/07/2009-30/06/2017)	Bangladesh Water Development Board	Medium
111.	Haor Flood Management and Livelihood Improvement (01/07/2014-30/06/2022)	Bangladesh Water Development Board	High

#	Title	Implementing Agency	DRR Sensitivity
112.	Institutionalization of Integrated Water Resources Management (IWRM) Process in compliance with Bangladesh Water Act-2013 (01/11/2013-31/10/2016)	Water Resources Planning Organization	Medium
113.	Integrated Planning for Sustainable Water Management (IPSWAM) Project (2nd Revised) (1/7/99 -30/6/2011)	Bangladesh Water Development Board	Medium
114.	Integrated Water Management Project at Polder 34/2 in Bagherhat District (01/07/2012- 30/06/2015)	Bangladesh Water Development Board	Medium
115.	Jamuna-Meghna River Erosion Mitigation Project (ADB Aided) (2nd Revised) (1/7/02-30/6/2011)	Bangladesh Water Development Board	High
116.	Kalni-Kushiaṛa River Management Project (01/04/2011-30/06/2014)	Bangladesh Water Development Board	Medium
117.	Khalrajuri Flood Control and Drainage Project (2nd Revised) (1/7/03-30/6/2012)	Bangladesh Water Development Board	High
118.	Main River Flood and Bank Erosion Risk Management Program (01/04/2012-30/06/2014)	Bangladesh Water Development Board	High
119.	Modernization and Integration of Hydrological Monitoring Network of Bangladesh and Environmental and Social Impact Assessment on Gorai River Restoration (01/12/2010- 30/11/2011)	Bangladesh Water Development Board	Low
120.	Naogan Town Protection Project (01/07/2011-30/06/2014)	Bangladesh Water Development Board	Medium
121.	New Dakatia and Old Dakatia Little Feni River Drainage Project (Part of South Comilla and North Noakhali comprehensive Drainage Project) (4th Revised) (01/07/2003-30/06/2014)	Bangladesh Water Development Board	Medium
122.	Norshingdi Town Protection Project (01/07/2006-30/06/2011)	Bangladesh Water Development Board	High
123.	Patuakhali Town protection embankment project.(1st Revised) (01/07/2007-30/06/2012)	Bangladesh Water Development Board	High
124.	Pre-Monsoon flood Protection and Drainage Improvement in Haor Areas (01/07/2011- 30/06/2015)	Bangladesh Water Development Board	High
125.	Preparation of Master Plan and Development of Database for Haors and Wetlands (01/01/2010- 31/12/2011)	Bangladesh Haor and Wetland Development Board	High
126.	Procurement of Dredgers and Ancillaries for River Dredging of Bangladesh (01/07/2010- 30/06/2015)	Bangladesh Water Development Board	Medium
127.	Protection of Alatuli Area of Chapainawabgong District from the Erosion of the Padma River (01/09/2012-30/06/2015)	Bangladesh Water Development Board	High

#	Title	Implementing Agency	DRR Sensitivity
128.	Protection of Alternative Embankment of Megna River from Ramgoti and Kamolnagar Upazila under Laxmipur District (01/07/2014-30/06/2017)	Bangladesh Water Development Board	High
129.	Protection of Barhmaputra River Right Bank at Bairagirhat and Chilmari Bandar Area of Chilmari & Ulipur Upazila in Kurigram District (Phase-II) (01/11/2012-30/06/2016)	Bangladesh Water Development Board	High
130.	Protection of Both Bank of Barnai river at Sharkutia & Kaligonj-Sadhonpur in Natore District (01/07/2013-30/06/2016)	Bangladesh Water Development Board	High
131.	Protection of Chandpur Irrigation Project Area from the erosion of the Meghna River (Haimchar) and Protection of Left Bank of the River Meghna at Bancharampur (1st Revised) (1/12/2009-30/06/2015)	Bangladesh Water Development Board	High
132.	Protection of Chandpur irrigation Project from erosion of the Meghna River at Ibrahimpur-Sakhua adjacent to Puran Bazar of Chandpur District (1st Revised) (1/4/2010-30/06/2015)	Bangladesh Water Development Board	High
133.	Protection of Chapai Nawabganj Sadar and Shibgonj Upazila from the Erosion of the Padma River (1st Revised) (01/07/2007-30/06/2012)	Bangladesh Water Development Board	High
134.	Protection of Chowhali Upazilla of Sirajgonj District from the erosion of the river jamuna (1/4/2010-30/06/2012)	Bangladesh Water Development Board	High
135.	Protection of Faridpur FCD Project (Area-1) from erosion of Padma River at Bakshipur-Sengram Area in Rajbari District, Bank Protection of the Nabaganga River at Mohajan Bazar Area in Narail District and River Bank erosion protection of the Gorai River at	Bangladesh Water Development Board	High
136.	Protection of Flood Embankment Along the Right Bank of Jamuna River at Antarpara, Dariapara and Adjacent Area under Bogra District (01/11/2010-30/06/2014)	Bangladesh Water Development Board	High
137.	Protection of Kalna Ferryghat from Erosion of the Madhumati River at Kashiani Upazilla in Gopalgonj District and Protection of Madaripur Town and Adjacent Area from erosion of Arialkhon River (01/01/2010-30/06/2012)	Bangladesh Water Development Board	High
138.	Protection of Lauhajang Upazilla Complex Area under Lauhajong Upazilla in Munshigonj District from the Erosion of the River Padma (01/01/2013-30/06/2015)	Bangladesh Water Development Board	High
139.	Protection of Left Bank of Padma River from Komorpur to Shara-Jhaudia in Ishwardi Upazila under Pabna District and Tilkopur to Gouripur in Lalpur Upazila under Natore District (01/01/2013-30/06/2015)	Bangladesh Water Development Board	High
140.	Protection of left Bank of the Jamuna River from Bahadurabad ghat to Futani Bazar at Dewangonj & Islampur Upazila, Peigna Bazaar area at Sharishabari Upazilla under Jamalpur District (1st Revised) (1/4/2010-30/06/2014)	Bangladesh Water Development Board	High
141.	Protection of Right Bank of Jamuna River at Kazipur Upazilla under Sirajganj District (01/10/2010-30/06/2014)	Bangladesh Water Development Board	High

#	Title	Implementing Agency	DRR Sensitivity
142.	Protection of Shaghata Bazar and its Adjacent Areas from Erosion of the River Jamuna at Shaghata Upazilla in Gainandha District & Protection of Left Bank of the Brahmaputra River at Shahiber Alga (near BOP Camp) in Datbhanga Union under Roumari Upazila 0	Bangladesh Water Development Board	High
143.	Protection of Shahbazpur Gas field from erosion of the Meghna River under Borhanuddin upazilla of Bhola District (Phase-II) (1st Revised) (1/3/2010-30/06/2014)	Bangladesh Water Development Board	High
144.	Protection of Soilabari and Adjacent Areas of Sirajgonj Town from the Erosion of Jamuna River in Upazila Sirajganj Sadar, District-Sirajganj (1st Revised) (01/07/2007-30/06/2011)	Bangladesh Water Development Board	High
145.	Protection of Teesta River Left Bank from Teesta Barrage to Chandimari Project (01/07/2009-30/06/2013)	Bangladesh Water Development Board	High
146.	Rajbari Town Protection Project (01/07/2009-30/06/2012)	Bangladesh Water Development Board	Medium
147.	Re-excavation of Benelia, Lagan Balbhadrā River under Nasirnagar Upazilla in Brahmanbaria and Habiganj District (01/07/2010-30/06/2014)	Bangladesh Water Development Board	Medium
148.	Re-excavation of Narod River, Musakhan River (Part) and intake Channel or Charchhat Regulator (01/07/2008-30/06/2011)	Bangladesh Water Development Board	Medium
149.	Rehabilitation and Strengthening of Embankment on Both Sides of Gumti River (01/01/2011-30/06/2015)	Bangladesh Water Development Board	High
150.	Rehabilitation of most risk oriented Coastal Polders (1st Revised) (01/07/2003-30/06/2011)	Bangladesh Water Development Board	High
151.	Rehabilitation of Sirajgonj Hard Point (1st Revised) (01/07/2010-30/06/2012)	Bangladesh Water Development Board	High
152.	Rehabilitation of Structure of BWDB Damaged by Cyclone Aila in Costal Area (South-Western Zone) (2nd Revised) (01/07/2010-30/06/2015)	Bangladesh Water Development Board	High
153.	Removal of Drainage Congestion from the Beels Adjacent to Bhaboddha Area Under Jessoré District (1st Revised) (1/7/06-30/6/2015)	Bangladesh Water Development Board	High
154.	Removal of Drainage Congestion from the Kobadak River Basin (Phase-2) (01/07/2011-30/06/2015)	Bangladesh Water Development Board	High
155.	Right Bank Protection of the Jamuna River in Bogra District (01/01/2012-30/06/2016)	Bangladesh Water Development Board	High
156.	River Bank Protection & Development and Town Protection Project (Phase-IV) (2nd Revised) (1/7/2008 - 30/6/2014)	Bangladesh Water Development Board	High
157.	River Bank Protection at Tamaruddin and Banglabazar of Polder73/1 (A+B) at Hatiya Upazila under Noakahli District (01/11/2010-30/06/2014)	Bangladesh Water Development Board	High

#	Title	Implementing Agency	DRR Sensitivity
158.	River Bank Protection of Vulnerable Part at Lalmoni Upazila under Bhola District (2nd Phase) (01/07/2013-30/06/2016)	Bangladesh Water Development Board	High
159.	River Bank Protective Work of Left and Right Bank of Karnaphuli river, Boalkhali, Raikhali Khal at Boalkhali & Raujan Upazila under Chittagong District (01/07/2013-30/06/2016)	Bangladesh Water Development Board	High
160.	River Bank Protective Work of Left Bank Erosion of the Padma River at Different Places in Sujanagar Upazila and Right Bank Erosion of the Jamuna River at Raghunathpur in Bera Upazilla of Pabna District (01/01/2011-30/06/2014)	Bangladesh Water Development Board	High
161.	Secondary Towns Integrated Flood Protection Project, Phase-2 (Kushthia, Rajshahi, Gaibandha, Jamalpur, Mymensingh, Manikgonj, Munshigonj, B.Baria and Sunamgonj Town (01/07/2004-30/06/2013)	Bangladesh Water Development Board	High
162.	Study for Sureswar Flood control Drainage & Irrigation project (01/05/2010-31/12/2011)	Bangladesh Water Development Board	High
163.	Upper Surma-Kushiara Project (1st Revised) (1/7/2001-30/6/2016)	Bangladesh Water Development Board	Low
164.	Water Management Improvement Project (WMIP) (2nd Revised) (1/7/2004-31/12/2015)	Bangladesh Water Development Board	Medium

Annex III: Terminology

Adaptation

The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Capacity

The combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals.

Capital Expenditure

A capital expenditure is an amount spent to acquire or improve a long-term asset such as equipment or buildings. Usually the cost is recorded in an account classified as Property, Plant and Equipment. The cost (except for the cost of land) will then be charged to depreciation expense over the useful life of the asset. In other words, Capital expenditure is money that is spent on things that will be used for several years (e.g., vehicles, computers etc), and has depreciation over the years.

Climate change

The Inter-governmental Panel on Climate Change (IPCC) defines climate change as: “a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings, or to persistent anthropogenic changes in the composition of the atmosphere or in land use”.

Critical facilities

The primary physical structures, technical facilities and systems which are socially, economically or operationally essential to the functioning of a society or community, both in routine circumstances and in the extreme circumstances of an emergency.

Disaster

A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

Disaster risk

The potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period.

Disaster risk management

The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.

Disaster risk reduction

The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the

causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

Environmental impact assessment

Process by which the environmental consequences of a proposed project or programme are evaluated, undertaken as an integral part of planning and decision-making processes with a view to limiting or reducing the adverse impacts of the project or programme.

Exposure

People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses.

Hazard

A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Hydrometeorological hazard

Process or phenomenon of atmospheric, hydrological or oceanographic nature that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Mitigation

The lessening or limitation of the adverse impacts of hazards and related disasters.

Natural hazard

Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Preparedness

The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.

Prevention

The outright avoidance of adverse impacts of hazards and related disasters.

Recovery

The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.

Resilience

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Response

The provisions of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensures public safety and meet the basic subsistence needs of the people affected.

Revenue Expenditure

A revenue expenditure is an amount that is expensed immediately, thereby being matched with revenues of the current accounting period. Routine repairs are revenue expenditures because they are charged directly to an account such as Repairs and Maintenance Expense. Even significant repairs that do not extend the life of the asset or do not improve the asset (the repairs merely return the asset back to its previous condition) are revenue expenditures. In other words, revenue expenditure is money spent on things/services used in that financial year (e.g., wages, rent etc).

Risk

The combination of the probability of an event and its negative consequences.

Sustainable Development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Vulnerability

The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

Weather

The state of the atmosphere of the earth, and the major components of that atmosphere that criminologists examine (and on which the local meteorologist reports) are temperature, humidity, precipitation, cloudiness, wind, and barometric pressure. Weather commonly refers to short-term atmospheric conditions, usually thought of in terms of hours or days. - Glossary of Meteorology (Glickman, 2000).

Annex IV: Questionnaire

Department of Disaster Science and Management University of Dhaka

Analyzing the ADP Allocations for Disaster Risk Reduction and Disaster Preparedness during the Period of 6th Five Year Plan

Sample Questionnaire:

1. What is the overall mandate of the ministry?
2. What kind of activities the ministry does in the field of disaster management?
3. Please describe the Disaster Management related previous/ongoing projects in your ministry.
4. What are the current enablers and barriers regarding Disaster Management related projects in your ministry?
5. Please rank the following projects of your ministry based on their relevance to Disaster Management. The relevance to Disaster Management means, percentage of the total expenditure allocated in the following criteria and its significance, as per mentioned in DPP of a given project. The scale is given below.

1	2	3	4	5
Very Low	Low	Medium	High	Very High

Sample Project Title: (2014-15 fiscal year projects)

Criteria	Yes/ No	Scale					Cost (%)
		1	2	3	4	5	
DRR Awareness		1	2	3	4	5	
Accountability		1	2	3	4	5	
DRR Mainstreaming		1	2	3	4	5	
DRR Evaluation Tool		1	2	3	4	5	
Capacity Building		1	2	3	4	5	
Risk Assessment		1	2	3	4	5	
Risk Information		1	2	3	4	5	
Cost Appropriation		1	2	3	4	5	
Prevention and Mitigation		1	2	3	4	5	
Preparedness and Risk Transfer		1	2	3	4	5	
Measuring Progress In DRR		1	2	3	4	5	

Screening Questions for Ranking the DRR Relevance

DRR Awareness: Whether the project or investment has thought about awareness-raising on DRR?

Accountability: Did the ministry or agency or project authority accept greater accountability for hazard-related human, physical and economic losses?

DRR Mainstreaming: Did the specific project investment helped the ministry in creating enabling environment for DRR e.g. strategies or incentives for mainstreaming DRR among the stakeholders?

DRR Evaluation Tool: Whether and to what extent the project has helped in the development of DRR tools and instruments in decision making?

Capacity Building: Training and technical support to implement DRR Programming

Risk Assessment: Did the project conduct any risk assessment for the project outcome?

Or,

Whether the project component was designed as an outcome of risk assessment?

Risk Information: Did the project helped to produce disaster risk information?

Or,

Did the project enhanced cost to redesign the project due to addressing risk information for achieving outcome?

Cost Appropriation: Whether the project adjusted cost to incorporate the disaster risk issues into design?

Prevention and Mitigation: Did the project invest on the disaster prevention and mitigation measures?

Preparedness and Risk Transfer: Did the project assist the project beneficiaries in building their preparedness measures (early warning system and dissemination, evacuation plan, disaster shelter, search and rescue capacity, develop emergency volunteers)?

Measuring Progress in DRR: Did the project take deliberate effort to measure DRR progress in the project monitoring and evaluation e.g. identification of DRR related targets and indicators, engagement dedicated expert to measure and report progress of DRR?

Analysis Technique:

Step 1: Understanding and defining the relative importance of the selected criteria on the basis of project objective.

Step 2. Weighting the criteria based of expert opinion-

Criteria	Weight
DRR Awareness	
Accountability	
DRR Mainstreaming	
DRR Evaluation Tool	
Capacity Building	
Risk Assessment	
Risk Information	
Cost Appropriation	
Prevention and Mitigation	
Preparedness and Risk Transfer	
Measuring Progress In DRR	

Step 3: Calculating the total score of a given project by multiplying the KII rank and weight of the criteria and then summing them.

Step 4: Classifying the score and re-ordering the projects.

Step 5: Select projects for field investigation from the ordered list (consider step 1 for differentiating between similar scored projects).

Step 6: Assess the projects in the field based on similar criteria.

Step 7: Compare and contrast the findings from the field with the findings from KII and DPP analysis.

Step 8: Drawing conclusions.

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