BANGLADESH
CLIMATE FISCAL FRAMEWORK

2020

Finance Division, Ministry of Finance
Government of the People's Republic of Bangladesh

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The Bangladesh Climate Fiscal Framework 2020 has been developed as an updated version of Climate Fiscal Framework 2014 by Finance Division with support from its Inclusive Budgeting and Financing for Climate Resilience (IBFCR) Project. The project is financed by Government of Bangladesh and United Nations Development Programme (UNDP).

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FOREWORD

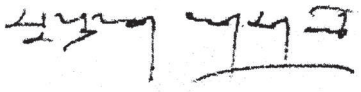
Climate change is one of the topical agenda in development discourse today as it adversely affects the life and livelihood of communities at large, particularly those who are the poor and vulnerable. Bangladesh unfortunately is an innocent victim of climate change because of its geographical location in a low-lying delta. Given the country's exposure to significant climate risks and vulnerabilities, the Government of Bangladesh began adopting wide ranging policies, plans and strategies since the mid-1990s. However, attention to the issue of integrating them with the resource allocation process remained, by and large, inadequate till the adoption of Climate Fiscal Framework (CFF) in 2014.

CFF 2014 was intended to provide necessary guidelines and tools for embedding climate dimension in our Public Financial Management (PFM) systems together with the budget setting process under Medium Term Budget Framework (MTBF).

I am indeed delighted to learn that Finance Division is going to bring out an updated version of CFF given the fact that five years have elapsed since its adoption in 2014. It entailed revisiting the contents of the document and providing new inputs to make it relevant to the current context bearing in mind many visible changes in the domain of climate finance both at the national and international levels.

My colleagues in the Finance Division with support from Inclusive Budgeting and Financing for Climate Resilience (IBFCR) Project being funded by UNDP took up the task of updating the document and finally produced an updated version with new and additional contents. Indeed, it was an arduous task. I would like to place on record my sincere appreciation for their unrelenting efforts to enrich it with the new insights they gathered.

I am confident that the policymakers, researchers, academia, planners and development partners will be happy to see that this is a living document which accommodates changes taking place in a fast-evolving context and incorporates their views. The updated CFF, I am sure, will provide adequate guidelines required to take forward the climate finance governance agenda in Bangladesh.



A H M Mustafa Kamal, FCA, MP
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PREFACE

Bangladesh began its journey with climate finance governance agenda since the adoption of Climate Fiscal Framework (CFF) in 2014. Globally, adoption of CFF was a pioneering attempt which was prompted by a study called Climate Public Expenditure an Institutional Review (CPEIR) conducted in 2012. Since the adoption of CFF in 2014, there have been significant changes in climate finance landscape and climate policy architecture both nationally and globally which necessitated an update of the framework.

At the national level, the Government embraced SDGs as its development framework in 2015; prepared Country Investment Plan for Environment, Forestry and Climate Change (CIP-EFCC) in 2017 and Bangladesh Delta Plan-2100 in 2018. In addition, the Government adopted a five-year comprehensive Public Financial Management (PFM) reform Strategy in 2016 that has changed and will continue to change the whole PFM landscape upon which the CFF was built. At the global level, following the Paris Agreement, efforts are being made to mobilize and scale up climate finance from a wide variety of sources, instruments, and channels. All these changes need to be incorporated in the CFF to ensure its continued relevance.

Inclusive Budgeting and Financing for Climate Resilience (IBFCR) Project being implemented by Finance Division in partnership with UNDP embarked upon the task of updating CFF as part of its agenda and passed through a rigorous consultative process with various groups of stakeholders to complete it. The updated CFF is, therefore, different from its previous version on several counts, for example, it deals with fiscal policy implications of climate change in a more elaborate way, broadens its remit by inclusion of financial sector, highlights the role of private sector and NGO/CSOs in climate finance, brings to the fore the innovative climate financing options and widens the coverage of transparency and accountability functions.

I would like to place on record my deep appreciation for all the stakeholders who came forward to offer their comments and views which certainly have enriched the contents of the document. My special thanks go to the IBFCR team, colleagues from the Finance Division and UNDP who took up the task with zeal and completed it amidst many challenges.

I am confident that the updated CFF will stand in good stead in taking forward the agenda of climate finance governance in the country. It will deliver useful pointers to the policymakers in calibrating financing policies and strategies to implement climate actions to address the vulnerabilities of the communities who disproportionately bear the burden of the adversities arising from climate change.

Abdur Rouf Talukder
Finance Secretary

ACKNOWLEDGEMENTS

We gratefully acknowledge the invaluable guidance from the Secretary, Finance Division throughout the process of updating the Climate Fiscal Framework (CFF) which was adopted in 2014.

While reviewing the existing CFF, it was felt that its remit should be broadened to include some important issues of both fiscal and financial sectors to make it more comprehensive. The project team, therefore, had to consult with a number of institutions/ agencies which include, among others, the Office of the Comptroller and Auditor General (OCAG) of Bangladesh, National Board of Revenue (NBR), Bangladesh Bank, and Insurance Development and Regulatory Authority (IDRA) to take on board their views. We would like to place on record the generous support they provided during consultation.

The officials of Finance Division from Budget, Macroeconomic, and Treasury and Debt Management Wings voluntarily offered their valuable suggestions at various stages of developing and calibrating the contents of updated framework which in many ways enriched the document. We acknowledge their contributions with deep gratitude.

We also gratefully acknowledge the contributions made by the members of Technical Advisory Group (TAG) of IBFCR Project, the committee constituted to examine the draft CFF 2020 and the participants of the national validation workshop held in March 2019 which reinforced our efforts to give the document a good shape. The IBFCR team, amidst many challenges, has successfully concluded the whole initiative which entailed a long and arduous process. Our special thanks to the team for its tenacity as well as its outstanding efforts to put together all information in a coherent manner to make the framework a useful reference document for the researchers, academics, think tanks and institutions/agencies working for climate finance agenda.

It would be remiss on our part if we do not acknowledge the services from our support staff who worked hard behind the scene to keep the process on an even keel.

Ramendra Nath Biswas
Additional Secretary, Finance Division
Ministry of Finance
and
National Project Director, IBFCR Project

EXECUTIVE SUMMARY

Bangladesh is one of the most climate vulnerable countries in the world, ranked seventh among countries most vulnerable to climate change-induced natural calamities, according to the global Climate Risk Index (CRI) 2019. The changing weather patterns and natural disasters mainly induced by climate change are damaging crops, livestock, poultry, fishery, land and water resources etc. and will have significant impacts on the economy - on GDP growth, private investment, employment and government revenues. These need to be integrated into macro-economic and budget decision-making.

In 2010, the Government of Bangladesh (GoB) took up for implementation the Planning Commission's Poverty, Environment and Climate Mainstreaming (PECM) Project, which aimed to institutionalise the mainstreaming of environment and climate change issues into the planning process. At the initiative of PECM, the Climate Public Expenditure and Institutional Review (CPEIR) was conducted in 2012 which analysed the policy and institutional context together with the financial management arrangements of the agencies involved in climate adaptation and mitigation activity in Bangladesh and advanced recommendations for next steps. Following CPEIR recommendations, the government formulated a Climate Fiscal Framework (CFF) in 2014 aimed at (a) establishing greater national ownership of climate finance, (b) promoting government–NGO-private sector partnership, (c) enhancing results management, (d) increasing mutual accountability, and (e) broadening the opportunity for resilient development and green growth in Bangladesh. The CFF essentially laid the foundation for pursuing the agenda of a climate inclusive public financial management (PFM) system in Bangladesh through a project titled Inclusive Budgeting and Financing for Climate Resilience (IBFCR) being implemented by Finance Division.

ROLE OF THE CLIMATE FISCAL FRAMEWORK

Climate Fiscal Framework (CFF) provides principles and tools for climate fiscal policy-making, helping to identify the demand and supply sides of climate funds and to ensure that climate fiscal policies are transparent and sustainable in the longer term. Combating adverse climate change effects in Bangladesh requires a framework for tracking climate-related expenditure while estimating potential costs of long-term finance. In this regard, the CFF aims to provide incentives and guidance for costed and prioritised climate actions reflected within the existing Medium-Term Budget Framework (MTBF), including estimation of potential costs of long-term financing needs to combat adverse climatic effects. The framework will promote an enabling environment, so that the government can more effectively access international climate finance and establish national funds for climate change. It will also routinely track climate-related allocation and expenditures and identify areas of institutional weakness and skills gaps, and on that basis recommend further institutional development and capacity building in the Planning Commission and the Finance Division, aiming to develop long-term expenditure plans in accordance with BCCSAP, NAPA, NAP,

NAMA, Country Investment Plan for Environment, Forestry and Climate Change (CIP-EFCC) for 2016-2020, Implementation Roadmap for Nationally Determined Contribution (NDC), Bangladesh Delta Plan (BDP) 2100, and other climate change policy and planning documents.

RATIONALE FOR UPDATING THE CLIMATE FISCAL FRAMEWORK

Since the adoption of the current CFF in 2014, the government adopted SDG's as its new development framework in 2015 and adopted a five-year comprehensive PFM reform strategy (2016-2021). This has changed the whole PFM landscape upon which the CFF was built. There are also emerging gaps such as limited attention to fiscal policy, private sector engagement, and developments in the international arena in this area. Therefore, there is an overriding need to tune the CFF with these changes. Accordingly, the task of updating the document was taken up under the IBFCR Project of Finance Division in partnership with the United Nations Development Programme (UNDP).

The updated climate fiscal framework broadens its remit to include the role of private sector, NGOs and CSOs in an attempt to make it more citizen-centric and thereby raise its profile. In addition, together with highlighting the fiscal policies like tax, VAT, subsidy and pricing, it also brings to focus some policies, namely lending policy and insurance policy as these are closely linked with the fiscal policies of the government. The updated CFF, therefore, brings to sharper focus the supply side of climate finance given the country's vulnerability and the risks of loss and damage arising from climate change.

METHODOLOGY

The methodology of updating the CFF included a review of the existing strategic documents adopted by Bangladesh wherein resource requirements and potential sources have been identified. This was followed by a review of the policies governing the fiscal and financial sectors to determine how far they are amenable to climate change and identifying the opportunities for making them climate inclusive. Finally, the framework reviewed the arrangements governing public finance and identified the entry points for climate change agenda within the various stages of the PFM cycle.

The updated CFF has been built around the assumptions that loss and damage due to climate change impacts will continue to increase, necessitating additional funds for adaptation; and that climate investment will not only reduce the vulnerability of the affected communities but also ensure their broader wellbeing. These assumptions reinforce the rationale for its adoption to guide the process of embedding climate dimension in public finance management.

MACROECONOMIC PERSPECTIVE OF CLIMATE CHANGE

Different studies suggest that the adversities of climate change will continue to have major impacts on the economy of Bangladesh. Despite increased resilience, theses impacts will be particularly pronounced on GDP growth, investment, employment and government revenues. As the impacts are inescapable, there is a need to integrate them into macroeconomic and budget decision-making.

SUPPLY OF CLIMATE FINANCE

While government is the principal source of domestic climate finance, NGOs and private sector are the potential sources. On the other hand, the financing windows like GCF, Adaptation Fund, and LDCF are the main sources of international climate finance. Domestically, the government is providing resources to address vulnerabilities arising from climate change. In FY2019-20, out of 58.11 percent of the total national budget against 25 Ministries/Divisions, 7.8 percent was climate relevant, which was 0.8 percent of GDP. Among the sources of international climate finance, GCF is the most prominent source which has so far provided US$ 94.7 million, along with US$ 72.6 million co-financing from the government.

CLIMATE INCLUSIVE FISCAL POLICIES

Fiscal policy has a key role to play in addressing climate change. The CFF showcases existing climate-friendly tax provisions, such as tax holiday and VAT exemption for low carbon technology and examines subsidy and pricing policy of fossil fuels and electricity using a climate lens, including past trends of fossil fuel price movements and a way forward. It also explores the option of levying carbon tax on fossil fuels to curb emissions and raise funds for climate adaptation and mitigation interventions.

DEVELOPMENT PLANNING AND BUDGETING

CFF 2020 also discusses the current process and entry points of integrating the climate dimension into the national budgeting and planning process. These include steps such as a macro-econometric modelling exercise undertaken by the Finance Division to include the climate dimension in macroeconomic indicators, revision of budget circular of climate relevant ministries, inclusion of climate dimension in MBFs, development of a climate finance tracking methodology and use of a new IT based system named iBAS++ for climate finance tracking. It also brings to focus the importance for integrating adaptation and mitigation issues into national procurement processes and details of accountability and oversight of climate finance flows, including the oversight roles of OCAG, the Parliament, CSOs and media. In addition, the CFF details the roles of different state actors - Planning Commission, IMED etc. in monitoring and evaluation of climate finance.

FINANCIAL SECTOR POLICIES

CFF 2020 highlights the need for reviewing the lending policy of Bangladesh to promote funding for projects that help adapt to climate change and promote green growth, and the insurance policy to target differentiated impacts of climate change on different groups and address risks of loss and damage. It also sheds light on climate investment and strategies to promote green banking in Bangladesh, including Bangladesh Bank's role in this process.

IMPLEMENTING THE FRAMEWORK

Finally, the document outlined an implementation plan for CFF 2020. It also highlights the need of supportive institutional arrangements for its successful implementation, as well as successfully building on existing reforms and policies, including the National Adaptation Plan and revised BCCSAP. It stresses the importance of skills and capacity development of key actors, ranging from relevant ministries to private sector organisations, enhanced collaboration between private and public entities, civil society and academia, and knowledge sharing through south-south cooperation, for effective climate finance governance.

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
ADP	Annual Development Programme
AIT	Advance Income Tax
ATV	Advance Trade VAT
BACS	Budget and Accounting Classification System
BAU	Business as Usual
BBS	Bangladesh Bureau of Statistics
BCCRF	Bangladesh Climate Change Resilience Fund
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BCCT	Bangladesh Climate Change Trust
BCCTF	Bangladesh Climate Change Trust Fund
BDP	Bangladesh Delta Plan 2100
BERC	Bangladesh Energy Regulatory Commission
BPC	Bangladesh Petroleum Corporation
BPDB	Bangladesh Power Development Board
BWDB	Bangladesh Water Development Board
CAG	Comptroller and Auditor General
CBO	Community-Based Organisation
CCGAP	Climate Change and Gender Action Plan
CD	Customs Duty
CDM	Clean Development Mechanism
CFF	Climate Fiscal Framework
CHT	Chattogram Hill Tracts
CIP-EFCC	Country Investment Plan for Environment, Forestry and Climate Change
CNG	Compressed Natural Gas
CO_2	Carbon Dioxide
COP	Conference of the Parties
CPEIR	Climate Public Expenditure and Institutional Review

CRI	Climate Risk Index
CSO	Civil Society Organisation
CSR	Corporate Social Responsibility
DPP	Development Project Proforma/Proposal
EPS	Environment Protection Surcharge
ERD	Economic Relations Division
ETP	Effluent Treatment Plant
FI	Financial Institutions
FY	Financial Year
FYP	Five Year Plan
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GoB	Government of Bangladesh
GPP	Green Public Procurement
HS	Harmonised System
iBAS++	Integrated Budget and Accounting System
IBFCR	Inclusive Budgeting and Financing for Climate Resilience
ICS	Improved Cook Stove
IFC	International Finance Corporation
ILO	International Labour Organisation
IMED	Implementation Monitoring and Evaluation Division
IT	Information Technology
KPI	Key Performance Indicator
KWH	Kilowatt Hour
LDC	Least Developed Country
LDCF	Least Developed Countries Fund
LED	Light-Emitting Diode
LEG	Least Developed Countries Expert Group

MBF	Ministry Budget Framework
MoEFCC	Ministry of Environment, Forest and Climate Change
MoF	Ministry of Finance
MTBF	Medium Term Budget Framework
$MtCO_2$	Metric Tonnes of Carbon Dioxide
MTMF	Medium Term Macroeconomic Framework
MTMPS	Medium Term Macroeconomic Policy Statement
NAMA	Nationally Appropriate Mitigation Action
NAP	National Adaptation Plan
NAPA	National Adaptation Programme of Action
NBR	National Board of Revenue
NDC	Nationally Determined Contributions
NGO	Non-Government Organisation
NIE	National Implementing Entity
OCAG	Office of the Comptroller and Auditor General
PAC	Public Accounts Committee
PDB	Power Development Board
PECM	Poverty, Environment and Climate Mainstreaming
PEI	Poverty Environment Initiative
PFM	Public Financial Management
PKSF	Palli Karma Sahayak Foundation
PPP	Purchasing Power Parity/Public Private Partnership
SAI	Supreme Audit Institution
SCCF	Special Climate Change Fund
SDG	Sustainable Development Goals
SME	Small and Medium Enterprise
SMEF	Small and Medium Enterprise Foundation
SPP	Sustainable Public Procurement
SRO	Statutory Regulatory Order
TAPP	Technical Assistance Project Proforma/Proposal

Tk	Taka
UK	United Kingdom
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value Added Tax
WRI-CAIT	World Resources Institute-Climate Access Indicators Tool

CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION TO CLIMATE CHANGE AND ITS IMPACTS

Climate change is at the heart of development discourses taking place both nationally and globally. It is also inextricably linked with the global agenda of Sustainable Development Goals (SDG) being pursued by countries across the world, including those which are vulnerable to the adverse impact of climate change. The succeeding paragraphs in this section reflect on what climate change is, global consensus on climate actions and the scale of Bangladesh's vulnerability highlighting the loss and damage it has already suffered due to natural disasters together with the impact of climate change on its economy.

CLIMATE CHANGE

Climate in a narrow sense is usually defined as the average weather, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organisation. The relevant quantities are most often surface variables such as temperature, precipitation and wind.

Climate change refers to 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 forcing such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use.[1] The United Nations Framework Convention on Climate Change (UNFCCC), in its Article 1, defines climate change as: 'a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.' The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition and climate variability attributable to natural causes.

Given abundant evidence that the global climate is indeed changing, a growing world-wide consensus suggests that ways must be found to contain and to the extent possible, reverse these changes. This is reflected in different landmark conventions, protocols and agreements that emerged from the engagement of international community to strengthen global response to the threat of climate change.

BANGLADESH'S VULNERABILITY

The geographical location of Bangladesh makes it most exposed to the risks and vulnerabilities arising from natural disasters due to tropical cyclones, storms, tidal surges and other climatic events**.** According to the global Climate Risk Index (CRI) 2019, Bangladesh ranks seventh among those 10 countries in the world's most vulnerable to climate change-induced natural calamities in the period 1998-2017.[2] While determining the average weighted rank of each country, the CRI incorporated death toll, deaths per 100,000 inhabitants,

[1] IPCC (2018) *Special Report on Global Warming of 1.5 °C, Annex I – Glossary*, p. 544.

[2] Eckstein, D. *et al* (2019) *Global Climate Risk Index 2019*. Germanwatch e.V, Bonn, p. 8.

total losses in million US$ PPP, losses per unit GDP in percentage and number of events (total 1998-2017). In its report, Germanwatch estimated that during this period, Bangladesh sustained US$ 2.403 billion in damages wrought by a variety of natural disasters.

In terms of spatial impacts, climate will most affect the coastal zone of more than 47,000 square kilometres, which is the home to over 36 million people, who will face more storm surges and projected sea level rise, increasing erosion and salinity. The division with the largest area permanently affected by a 1-meter sea-level rise will be Khulna, while Dhaka could see up to 14 percent of its area temporarily flooded.[3] Meanwhile National Geographic ranked Bangladesh as the most vulnerable nation to the impacts of climate change in the coming decades. Several other research studies also came up with similar findings.

MACROECONOMIC CONTEXT

Climate change will have significant impacts on the Bangladeshi economy which will need to be integrated into macro-economic and budget decision-making. Estimate suggests that a total of 129 tropical cyclones of different categories hit Bangladesh coasts from 1978 to 2013 causing huge damage.

Bangladesh Bureau of Statistics indicates that the cyclone induced damage during that time stood at around US$ 355 million where total disaster damage stood at around US$ 2.3 billion.[4] These damages include crops, livestock, poultry, fishery, land resources and the consequences like food and nutrition insecurity, unemployment, additional workload on women of the poor sections of the community who are living in the climate and disaster hotspots.

A study report by the World Bank (2010) point to the fact that despite increased resilience, climate change induced natural disasters continue to result in huge economic losses for example; loss of output and slowed progress in reduction of poverty.[5] The report noted that the 1998 monsoon flood inundated over two-thirds of Bangladesh and resulted in damages and losses of over US$ 2.0 billion, or 4.8 percent of annual GDP. Similarly, Cyclone *Sidr* resulted in damages and losses of US$ 1.7 billion, or 2.6 percent of GDP in FY2007-08.

At the macro-economic level, climate change is having impacts on GDP growth, private investment, employment and government revenues. The Asian Development Bank (ADB, 2014) estimated that with current emission levels, climate change would impose annual economic costs equivalent to 2 percent of its GDP by 2050, increasing to 9.4 percent by 2100.[6]

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[3] ibid.

[4] BBS (2015) *Bangladesh Disaster Releted Statistics 2015: Climate Change and Natural Disaster Perspectives, Impact of Climate Change on Human Life (ICCHL) Programme.*

[5] World Bank (2010) *Economics -of Adaptation to Climate Change - Bangladesh*. The World Bank Group, Washington DC, pp. xi-xii.

[6] Asian Development Bank (2014) *Bangladesh Could See Climate Change Losses Reach Over 9% of GDP*. Available at: https://www.adb.org/news/bangladesh-could-see-climate-change-losses-reach-over-9-gdp-report [Accessed: 03 September 2019].

1.2 CLIMATE FINANCE

Climate finance generally refers to the flow of funds that is required to support activities aimed at reducing GHG emission and adapting to the adverse effects of climate change. Low carbon and climate resilient development call for investments from both public and private actors like development financing institutions, governments and private sector investors. These investments will essentially take into account long-term opportunities and risks arising from climate change, promote wider socio-economic welfare and minimize social and environmental hazards.

In the context of Bangladesh, climate finance basically refers to flow of funds to programmes on adaptation and to a limited extent to those on mitigation.[7] However, GoB has demonstrated its commitment to undertake both adaptation and mitigation efforts as part of its agenda for sustainable development. It is evidenced by the fact that every year the government channels a lot of resources for significant investment in projects/programmes for ensuring climate resilience and encourages mitigation efforts by embarking on solar energy projects, afforestation and reforestation programmes in climate hotspots, programmes for promoting the use of new technology to replace coal-fired kilns, etc.

1.3 OBJECTIVES

The CFF provides principles and tools for climate fiscal policy-making, helping to identify the demand and supply sides of climate funds and to ensure that climate fiscal policy is transparent and sustainable in the long run. The objective of combating adverse climate change effects in Bangladesh requires a framework for tracking climate-related expenditure while estimating potential costs of long-term finance.[8]

In establishing such a framework, there is a need to (i) identify their existing expenditures and modalities for delivering climate-related finance; (ii) identify additional expenditure requirements, drawing upon action plans such as BCCSAP; (iii) identify financing gaps and preferred modalities for delivering further sources of public investment (external and domestic); and (iv) create an enabling environment for private finance flows to implement climate actions.

Combating adverse climate change effects in Bangladesh requires a framework for tracking climate-related allocation and expenditure while estimating potential costs of long-term finance.[9] To this end, CFF 2020 aims to promote an updateable country system to (i) cost and prioritise climate actions; (ii) access international and national sources for climate finance; (iii) deliver climate finances; (iv) track climate expenditures; and (v) make climate finance and expenditure accountable. More specifically, the CFF 2020 means to develop a framework that incorporates the following features:

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[7] Finance Division (2014), *Climate Fiscal Framework.* Finance Division.

[8] Cubasch U. *et al* (2001) Projections of Future Climate Change. In *Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, and C.A. Johnson, eds). Cambridge University Press, Cambridge, UK and NY, USA, pp. 527–578.

[9] ibid.

- It should provide incentives and guidance for costed and prioritised climate actions reflected within the existing MTBF. This includes estimation of potential costs of long-term financing needs to combat adverse climate change effects
- The framework should promote an enabling environment, so that the government can more effectively access international climate finances and establish national funds for climate change
- It should routinely track and monitor climate-related allocation and expenditures, and
- The framework should identify areas of institutional weakness and skills gap, and on that basis recommend further institutional development and capacity of relevant agencies including Finance Division, Ministry of Environment, Forest and Climate Change, and Planning Commission.

1.4 CFF 2014: ACHIEVEMETS

The achievements under CFF 2014 are mainly attributable to the project titled Inclusive Budgeting and Financing for Climate Resilience (IBFCR) being implemented by Finance Division since 2016 with support from UNDP Bangladesh. A snapshot of the achievements is presented below:

FISCAL POLICY AND CLIMATE CHANGE

A review of existing fiscal policies (tax, VAT, subsidy and pricing) was conducted to identify areas where (i) revenue measures should recognise the effects of climate change and indicate tax incentives for low carbon green development, (ii) the government can provide subsidy for green products and reduce it where it harms the process of low carbon green development and improved climate adaptive livelihood, and (iii) the government should adjust its energy pricing policy to promote the renewable energy generation options. The results of the review have been incorporated in this framework.

BUDGET FORMULATION AND EXECUTION INTEGRATING CLIMATE CHANGE

Climate dimension has been embedded in Budget Circular (BC) as part of the process of linking the major climate policies and strategies (e.g., BCCSAP) with the budget setting process under MTBF. MBF of 25 Ministries/Divisions was turned climate inclusive. Climate Budget Report are being produced annually using the budget and expenditure data of these Ministries/Divisions since FY2017-18. In addition, climate change dimension has been embedded in two strategically important policy documents i.e., MTMPS and Bangladesh Economic Review.

CLIMATE CHANGE EXPENDITURE TRACKING

Climate Finance Tracking Methodology, in line with the thematic areas and programmes set out in the BCCSAP 2009, has been developed to track climate allocation and expenditure subsumed in the total budget of relevant Ministries/Divisions. Based on the tracking methodology, a separate climate finance module incorporated in the iBAS++ using new BACS to carry out the tracking exercise.

OVERSIGHT AND TRANSPARENCY OF CLIMATE EXPENDITURE

Climate change related activities and climate investments by the government have been brought under the purview of CAG's regular audit operation through the introduction of Climate Performance Audit (CPA). In order to mainstream the new audit protocol several activities were carried out such as (i) developing Generic Criteria for Climate Performance Audit and Guidelines for Climate Performance Audit Planning, (ii) developing Training Manual on Climate Performance Audit Planning, (iii) imparting training on CPA to create a critical mass of auditors in the audit department, (iv) conducting climate performance audits and publishing climate performance audit report by the OCAG.

1.5 RATIONALE FOR UPDATING THE CLIMATE FISCAL FRAMEWORK

The existing CFF was developed five years ago in 2014 considering the prevailing country policy context as well as the operational realities on the ground. Since then, significant changes have taken place both at the national and global level to address the climate change issues. These may be categorised as follows:

CHANGES IN THE LAST 5 YEARS IN CLIMATE FINANCE LANDSCAPE OF THE COUNTRY

These include adoption of SDG in 2015 as a new development framework, changes with climate policies and strategies, such as the launching of CIP-EFCC, implementation roadmap for Nationally Determined Contributions (NDC), and Bangladesh Delta Plan 2100. In tandem, there have been new developments with public financial management reforms, such as the introduction of BACS supported by iBAS++.

DEVELOPMENTS IN INTERNATIONAL ARENA

In 2014, Bangladesh presented the world's first CFF, but now other countries have developed their climate fiscal and financing frameworks with new insights prompting an update of Bangladesh's CFF.

GAPS THAT HAVE EMERGED

The gaps include both substantive issues such as limited attention to fiscal policies, private sector engagement and oversight and governance of climate finance with regard to the development of CFF 2014.

1.6 SCOPE OF THE FRAMEWORK

Climate change and its adverse impacts present a constellation of fiscal, environmental, poverty, gender, and development issues and ramifications regarding mitigation of, and adaptation to, the harmful impacts of climate change. This CFF focuses mainly on fiscal issues vis-à-vis climate change. However, any effective and comprehensive framework relating to climate change must encompass issues of gender and broader development perspectives including equity.

The updated CFF broadens its remit to include the role of private sector, NGOs and CSOs to make it more citizen-centric and thereby raise its profile. In addition, together with highlighting the fiscal policies like tax, VAT, subsidy and pricing, it also brings to focus some policies, namely lending policy and insurance policy as these are linked with the fiscal policies of the government.

1.7 APPROACH AND METHODOLOGY FOR UPDATING THE FRAMEWORK

APPROACH

Since climate change has an economy wide impact due to huge loss and damage caused by extreme climatic events, this CFF starts with a review of the existing strategic documents adopted by Bangladesh wherein resource requirements for recovery of such loss and damage has been identified together with the sources from which resources will flow. Then it goes on to review the policies governing the two interlinked sectors - fiscal and financial to determine how far they are amenable to climate change and identify the opportunities for making them climate inclusive. Finally, the framework reviews the arrangements governing public finance like planning, budgeting, accounting, monitoring, audit and evaluation, and parliamentary oversight. This also identifies the entry points for climate change agenda within the various stages of the PFM cycle.

The updated CFF has been built around the following key assumptions:

- Loss and damage due to climate change will continue to increase in the long run as the climate induced extreme events will take place with greater intensity and frequency. Therefore, additional funds will be required to implement projects and programmes targeting the improvement of community's capacity to adapt; and
- The climate investment will not only reduce the vulnerability of the affected communities but also ensure their broader wellbeing.

These assumptions together reinforce the rationale for its adoption to guide the process of embedding climate dimension in public finance.

METHODOLOGY

It comprises mainly of the following:

- a desk review of international conventions, protocols and agreements together with national climate change related policies, plans and strategies
- wider consultation with various groups of stakeholders that include Finance Division, National Board of Revenue (NBR), Planning Commission, Economic Relations Division (ERD), Ministries of Environment, Forest and Climate Change, Office of the Comptroller and Auditor General, Bangladesh Bank, relevant line ministries, Palli Karmasashyak Foundation (PKSF), non-government organisations (NGOs) and private sector
- an in-depth review of fiscal policies (pricing, taxation, and subsidies) and their role in economic development of Bangladesh; a review of annual development programmes, MTBFs and the new BACS adopted by the government together with the Finance Division's IT platform supported by iBAS++

- a general review of the lending policies of the Bangladesh Bank and the national insurance policy and the procurement regulatory framework comprising Public Procurement Act 2006 and Public Procurement Rules 2008 in the light of climate change implications
- analysis and review of cross-country experiences in designing strategies to access international financing for climate change related consequences
- a review of aid policies, climate change funds, studies on macroeconomic consequences on climate change etc
- a cross-country review comparing areas of institutional weaknesses and skills gaps in CFF implementation
- a national validation workshop to elicit the wider stakeholders on the contents and approach of updated CFF (Appendix-1)

1.8 LIMITATIONS

While updating the CFF, all overarching national plan documents have been thoroughly consulted to put the framework on right premise. However, in the meanwhile, the government is poised to embark on preparation of 8th FYP, Vision 2041, and well on course to finalise new BCCSAP. Since these plans and strategies are yet to be finalised, it was not possible to capture here the priorities set out in these documents in relation to climate finance.

CHAPTER 2

THE CLIMATE FISCAL FRAMEWORK

2.1 THE FRAMEWORK

A cohesive nationally owned CFF will be at the heart of the climate finance governance agenda being pursued by the government. It aims to embrace the whole gamut of climate finance to identify the relationship between the components which will allow the government to manage its complex financing landscape more strategically. The following schematic diagram captures the interconnectedness of those components and shows how they interact with each other.

Figure 1: Schematic Diagram of the Climate Fiscal Framework

2.2 INTEGRATION OF CLIMATE CHANGE POLICIES AND PUBLIC FINANCE

The country was one of the first least-developed countries (LDCs) to complete its NAPA in 2005, citing 'urgent and immediate' adaptation needs. NAPA was funded by UNFCCC's LDC Fund. It consisted mainly of a list of stand-alone adaptation actions.

In 2008, the government adopted the BCCSAP which reflected the changing development priorities of the government. It was subsequently revised in 2009, when more areas of action were added, including (i) the development and harnessing of water resources through better management of river course and training, and (ii) mitigation policy directions such as the 'low-carbon development path'. The BCCSAP is

presented in two parts. The first part provides the background based on physical and climatic contexts, core socioeconomic realities and policies in the country and the consequent rationale for a strategy on climate change. The thrust of the strategy is on sustainable development, poverty reduction and increased well-being of all vulnerable groups in society with special emphasis on gender sensitivity. The second part elaborates a set of programmes based upon six pillars or broad areas of intervention which was elaborated in the first part. The BCCSAP sums up Bangladesh's current thinking on desirable activities to build climate resilience into the economy and society of Bangladesh through adaptation to climate change as well as mitigation for a low carbon development path.

BCCSAP is built on six thematic areas: (i) food security, social protection, and health; (ii) comprehensive disaster management; (iii) infrastructure; (iv) research and knowledge management; (v) mitigation and low-carbon development; and (vi) capacity building and institutional strengthening. Under these thematic areas, 44 programmes to address climate change challenges have so far been planned.

It is vital that the threat of adverse climate change impacts be addressed now. However, financing the implementation of BCCSAP 2009 in itself presented the government with a great challenge. In this context, Bangladesh decided to initiate action with national and international funds. This led to the creation of two separate funds: the Bangladesh Climate Change Trust Fund (BCCTF) in 2009, and the Bangladesh Climate Change Resilience Fund (BCCRF) in 2010. While the former is resourced entirely from the Government's own budget, the latter comprised funds pledged and provided by developed countries or groups such as Sweden, the United Kingdom (UK), and the European Union (EU). The operation of BCCRF continued till June 2017 while that of BCCTF is continuing with funding support from the government annually. With differing governance and management arrangements, both the funds were meant to support implementation of BCCSAP.

Following the Conference of the Parties (COP) of 2010 held in Cancun, Mexico, the Least Developed Countries Expert Group (LEG) of UNFCCC, now also provides technical advice on (i) NAPA revision and updates; (ii) reinforcement of gender considerations and considerations regarding vulnerable communities; (iii) integration of NAPAs into development planning; (iv) identification and implementation of medium and long-term adaptation; and (v) implementation of the LDC work programme. LEG also provides technical guidance and support to the formulation of National Adaptation Plan (NAP) and Nationally Appropriate Mitigation Action (NAMA).

In 2010, the government took up for implementation the Planning Commission's Poverty-Environment-Climate Mainstreaming (PECM) project. The project, part of an Asia-Pacific regional and global Poverty Environment Initiative (PEI) financed by UNDP and UNEP, was intended to provide targeted support for development planning and budgeting processes through the establishment of poverty-environment climate linkages. Under PECM, a Bangladesh Climate Public Expenditure and Institutional Review (CPEIR) was conducted in 2012. CPEIR advanced a number of recommendations, including the key proposal to develop a CFF that would incorporate, inter alia, (i) a set of climate fiscal codes for Bangladesh to track climate change expenditures for policy analysis and reporting; and (ii) an estimate of long-term climate finance needs by identifying potential climate-related public expenditures across government ministries. Following CPEIR recommendations, the government adopted its first CFF in 2014-a pioneering attempt to make the country's PFM system climate inclusive. Since then there have been significant development in the policy landscape of the country. The government adopted SDGs as its new development framework by internalising the Global Agenda 2030 and launched CIP-EFCC, Roadmap for Implementation of NDC and BDP 2100 which will have a significant bearing on the CFF 2020.

2.3 RESOURCE REQUIREMENT FOR ADAPTATION AND MITIGATION

The resource requirement for adaptation and mitigation is broadly reflected in several strategic documents adopted by the Government since 2008. This section brings to focus the financing requirements for implementing strategies laid out in those documents.

BANGLADESH CLIMATE CHANGE STRATEGY AND ACTION PLAN (BCCSAP)

The implementation of the BCCSAP is mainly financed through government's own resources and external support that were available from the development partners as well as the specific international funds created for the purpose of immediate actions such as strengthening disaster management, research and knowledge management, capacity building and public awareness programmes, and urgent investments such as cyclone shelters and selected drainage programmes. Up to December 2019, US$ 453 million has been allocated to implement BCCSAP programmes through Bangladesh Climate Change Trust Fund. In addition, allocation has been made through ADP for implementation of BCCSAP projects. The terminal year of existing BCCSAP was 2018. It is being updated with a new tenure using the lessons learnt from the experience of implementation over the past decade.

BANGLADESH COUNTRY INVESTMENT PLAN FOR ENVIRONMENT, FORESTRY AND CLIMATE CHANGE (CIP-EFCC)

The government has adopted the CIP-EFCC to enhance the contribution for EFCC sectors to ensure sustainable development through the provision of ecosystem services, thereby helping to reduce the poverty, improve environmental and human health benefits, and increase resilience to climate change. The CIP-EFCC, through its programmatic, financial, institutional and monitoring frameworks, is expected to help (a) prioritise investment areas in environmental management; (b) earmark the investment areas to the most relevant ministries and agencies for implementation; (c) quantify the financial requirements of investment gaps to implement appropriate and adequate programmes and projects in those areas; and (d) assess annual performance (with identified challenges and recommendations) in order to improve the next cycle of annual development planning. The plan should also facilitate achievement of NDC and SDG targets, particularly SDG 13 and 15. There is a total of 43 programmes under 4 thematic areas namely, climate change, environmental governance, natural resources management, and pollution abatement.

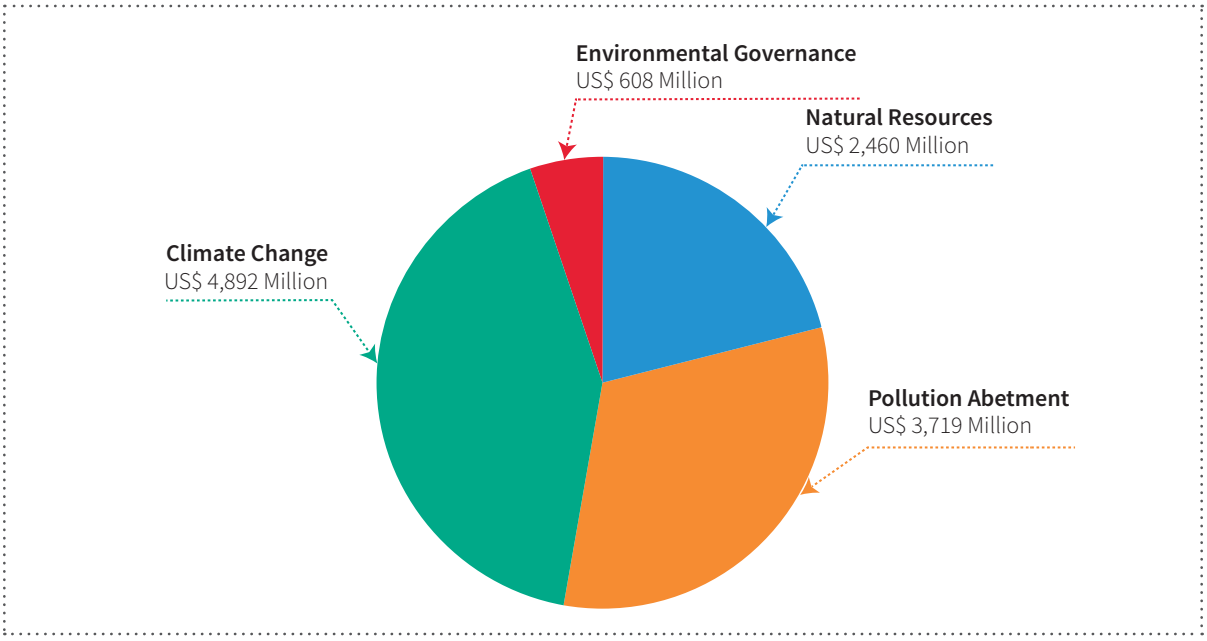

Figure 2: Resource Requirement for CIP-EFCC Implementation

The total cost of the CIP-EFCC is estimated at about US$ 11.7 billion, of which 40 percent (i.e., about US$ 4.7 billion) is already financed through the government's own budget allocations. Hence, the financing gap is estimated at about US$ 7 billion, or 60 percent of total implementation costs. According to the plan, programmes in the areas of ecosystem management, sustainable infrastructure, and mitigation are already funded by the government. However, areas like pollution control, environmental governance, and gender equity remain significantly underfunded. For some programmes, the financing gap approaches up to 100 percent with a very few projects and resources, the underfinance remains at 98 percent for pollution in agriculture, 94 percent for enhancing sustainable management and socioeconomic benefits from forests, and 99 percent for improving stakeholder participation and gender equity, among others.

NATIONALLY DETERMINED CONTRIBUTIONS

The roadmap for implementation of Nationally Determined Contributions (NDC) was adopted in 2015 to initiate a number of mitigation actions that will help limit the country's GHG emissions. The main springboard of NDC comprises of Bangladesh's existing strategies and plans, in particular, BCCSAP, Renewable Energy Policy 2008, the Energy Efficiency and Conservation Master Plan, the forthcoming National Adaptation Plan, the National Sustainable Development Strategy, the Perspective Plan and the Five-Year Plans, the National Plan for Disaster Management and the Disaster Management Act 2012. The NDC of Bangladesh consists of the following elements:

(a) An unconditional contribution to reduce GHG emissions by 5 percent from Business as Usual (BAU) levels by 2030 in the power, transport and industry sectors, based on existing resources;

(b) A conditional 15 percent reduction in GHG emissions from BAU levels by 2030 in the power, transport, and industry sectors, subject to appropriate international support in the form of finance, investment, technology development and transfer, and capacity building;

(c) A number of further mitigation actions in other sectors which the plan intends to achieve is subject to the provision of additional international resources.

Although further action should be taken to assess the scale and scope of investment needs for mitigation activities, examples of the types of investment required to implement key mitigation measures are set out in the document. Estimated costs of key mitigation measures stand at US$ 27 billion giving special emphasis on super-critical coal power generation, elevated express highways in Dhaka, Dhaka mass rapid transit system, among others. NDC also put forward the costs for adaptation for 2015-2030 that are synergistic with the mitigation plan. Implementation of identified adaptation measures are very critical to increase the resilience of the country to climate change. It was estimated that Bangladesh will need to invest US$ 40 billion from 2015 to 2030 to implement identified adaptation measures to address adverse impacts of climate change. This includes the actions included in the NAPA, BCCSAP as well as new adaptation needs for the period 2015-2030 based on the current NAP Roadmap and the 7th Five Year Plan.

BANGLADESH DELTA PLAN 2100

The government adopted the Bangladesh Delta Plan 2100 in September 2018 as part of its efforts to secure the future of water resources and mitigate the likely effects of climate change including natural disasters. It is a long-term integrated and holistic plan that takes long-term view on water resource management, climate change and environmental challenges with a view to supporting long-term development of Bangladesh.[10] The BDP 2100 aims to achieve three higher level national goals[11] together with six BDP specific goals.[12] The Plan highlighted six hotspots including coastal areas (27,738 square kilometres), Barind and drought-prone region (22,848 square kilometres), haor and flash flood prone areas (16,574 square kilometres), CHT region (13,295 square kilometres), river region and estuaries (35,204 square kilometres) and urban region (19,823 square kilometres). It is expected that under BDP policy option, Bangladesh will be able to achieve its GDP growth target of 8 percent by 2020 and maintain an average growth rate of 9 percent until 2041.[13] A total of 80 projects have been selected for implementation under the investment plan at the first phase at a cost of US$ 37 billion. Of them, 65 would be infrastructure projects while 15 others would aim to enhance institutional capacity, efficiency and research.

Among these 80 projects, 34 have direct climate change component with projected cost of US$ 23.23 billion, out of which climate financing is US$ 4.65 billion during 2018-2040 (Appendix-2). At present, however, the government spends only 0.8 percent of GDP on delta management projects and programs. This will need to be more than tripled to 2.5 percent of GDP - if 80 projects of the plan are to be implemented. To reach this total, Bangladesh is likely to get US$ 2 billion assistance from Green Climate Fund (GCF) every year if the case is effectively pursued. The remaining costs will be met by other development partners, foreign direct investment, and the private sector. The Plan envisages that the private sector has the potential to generate sizable resources to finance the delta plan and according to its projection, Bangladesh will be able to mobilise at least 0.5 percent GDP per year from private sector for financing the plan.

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[10] General Economics Division (2018) *Bangladesh Delta Plan 2100 (Abridged Version)*. General Economics Division, Dhaka, p. 13.

[11] Higher level: Goal 1. Eliminate extreme poverty by 2030, Goal 2 Achieve upper middle-income status by 2030 and Goal 3: Being a prosperous country beyond 2041.

[12] Specific: Goal 1: Ensure safety from floods and climate related disasters, Goal 2: Enhance water security and efficiency of water usages, Goal 3: Ensure sustainable and integrated river systems and estuaries management, Goal 4: Conserve and preserve wetlands and ecosystems and promote their wise use, Goal 5: Develop effective institutions and equitable governance for in-country and trans-boundary water resources management and Goal 6: achieve optimal and integrated use of land and water resources.

[13] Bangladesh Delta Plan 2100, Volume 1; Strategy (2018), General Economics Division. Dhaka.

2.4 CLIMATE INCLUSIVE FISCAL POLICIES

2.4.1 REVENUE AUGMENTATION THROUGH FISCAL INTERVENTIONS

Fiscal policies generally refer to government policy decisions that alter the production, distribution, and consumption of real output in the economy. These deliberate decisions, also known as 'discretionary' fiscal policies, are implemented through two types of fiscal instrument: taxation and government spending.

Taxation policy of the government has an impact on actions/programmes taken up to address the adverse effects of climate change. In the expenditure side, subsidies, notably, the subsidies for fuel also may have similar impact. Pricing policy of different products, for example, pricing for fuels, fertilisers etc. have implications for poverty reduction of the communities living in climate vulnerable areas. In essence, all the above instruments may be applied to address the negative impacts of climate change.

AREAS OF CURRENT TAX POLICY TUNED WITH CLIMATE CHANGE

Countries around the world are implementing a variety of tax and regulatory measures to reduce the level of CO_2 emissions. In line with low carbon policy, the Government of Bangladesh has also introduced some provisions in tax law in the form of tax holiday, exemption, and surcharge. The existing climate-friendly tax provisions are as follows:

Table 1: Existing Climate Friendly Provisions in Tax Policy

Item	Tax policy	Law/SRO	Comments
Auto/Green Bricks	Tax Holiday	By the section 21 of the Finance Act, 2019 (section 46BB(2)(a)(iii) of the Income-tax Ordinance, 1984)	This fiscal measure gives incentive to low carbon technology brick manufacturing which directly contributes to reduce 'Greenhouse Gas (GHG)'emission
Photovoltaic cell (H.S. Code: 8541.40.10) Solar module or panel (H.S. Code: 8541.40.20)	VAT is exempted at both import & production level	By SRO No 172-Ain/2019/29-Musak dated 13th June 2019	It gives incentive to low carbon technology which directly contributes to reduce GHG emission. It helps to reduce cost of solar energy
Solar Battery (up to 60 ampere) (Heading no. 85.07)	VAT is exempted at production level	By SRO No 172-Ain/2019/29-Musak dated 13th June 2019	Solar battery is used in lighting, motor vehicles, irrigation, boat running, etc. VAT exemption reduces cost of solar energy

Item	Tax policy	Law/SRO	Comments
Environment Protection Surcharge (EPS)	Environment Protection Surcharge at the rate of 1 percent is imposed on goods produced by the industries polluting environment	By the section 67 of the Finance Act, 2014	This surcharge has not been fully implemented yet
Electric cars (H.S. Code: 8703.40.56 and H. S. code: 8703.50.56)	Concessionary 5 percent CD on import	By First Schedule of Customs Act,1969	The concessions in import along with other incentives would be helpful in reducing cost of procuring and operating electric cars
Photovoltaic cell (H.S. Code: 8541.40.40)	Zero percent import duty on import of Photovoltaic cell	By First Schedule of Customs Act,1969	This will make Photovoltaic cell cheaper

TAX INTERVENTIONS FOR ADAPTATION AND MITIGATION

NDC of Bangladesh has planned an unconditional contribution to reduce GHG emissions by 5 percent from Business as Usual (BAU) levels by 2030 and a conditional 15 percent reduction in GHG emissions from BAU levels by 2030 in the power, transport, and industry sectors subject to appropriate international support in the form of finance investment, technology development and transfer and capacity building. The implementation of Power Division's 'Energy Efficiency and Conservation Master Plan, 2015' is also essential to achieve the NDC's goal. Without incentive programmes, the private sector may not be mobilised towards achieving this goal. Implementation of rainwater harvesting equipment, hydroponic cultivation, seed of salinity, storm surge, drought and flood resistant/tolerant agricultural products, hybrid and electric motor vehicles, wind power plant, geo-thermal power plant and renewable sources of energy etc. requires the government to take several tax-policy measures. The list of climate related tax provisions above shows that the issue is yet to be addressed adequately. There are several other interventions that facilitate different climate relevant activities. The tax measures may be divided into two ways such as tax interventions to facilitate adaptation against climate change and tax interventions for mitigation of climate change. The detailed proposal may be seen in Appendix-3 for adaptation and Appendix-4 about mitigation measures. However, quantification of the impact of proposed intervention in tax regime needs to be worked out using appropriate climate inclusive revenue modelling.

EXPLORING THE CARBON EMISSION TAX OPTION

A carbon tax is a tax on the carbon content of fuels (principally coal, oil, and natural gas) that generate carbon dioxide (CO_2) emissions when burned. The tax would apply at a specific rate per tonne of coal, per barrel of oil, or per million cubic feet of gas, with the amounts adjusted to equalise implied taxes on carbon content. The rationale of such a tax is to reduce GHG emissions primarily responsible for climate change.

Carbon taxes increase the costs of carbon-emitting fossil fuels. Thus, carbon taxes are expected to reduce the use of carbon-emitting fuels, while encouraging the use of environment-friendly and non-carbon emitting renewable energy sources. The revenue generated through such taxes may be used to finance clean energy and energy saving projects.

The design and implementation of carbon taxes may vary from country to country. There are differences in rates, applicability, and point of taxation, coverage, administration and the use of the revenues collected through carbon taxes. Nevertheless, there are also similarities in the approach towards taxing carbon. So, the basis on which the rate will be determined becomes important in the context of the goals or policy objectives of a country. There are different approaches to determine the carbon tax rate such as revenue approach, abatement approach and the Social Cost of Carbon (SCC) approach. The amount of revenues the government may want to generate through carbon tax is called revenue approach. The abatement approach determines the carbon tax for achieving a given level of reduction in the emissions, for example, the targets promised in the NDCs under the UNFCCC. The SCC approach estimates the cost that the society bears from the emission of one tonne of carbon dioxide or carbon equivalent emissions at a given point of time.[14]

Carbon taxes were first introduced in the early 1990s. Finland first adopted such a tax in 1990, followed by Norway and Sweden in 1991, and Denmark in 1992. The early 2010s saw, for the first time, carbon taxes being used in emerging economies as well. Countries such as Argentina, South Africa, Mexico, and Chile are either imposing carbon taxes or contemplating the imposition of carbon tax. According to a World Bank report (2019), over 57 national and sub-national level jurisdictions have adopted or are proposing to adopt carbon taxes.[15]

According to another World Bank report published in 2019, the government of Argentina implemented carbon tax for fuels at the rate of US$ 10 per tonne CO_2 emission in January 1, 2018 for fuels. Due to the depreciation of the Argentine peso in 2018, the equivalent carbon tax rate is US$ 6 per tonne CO_2 emission from April 1, 2019.[16]

The Republic of Korea launched Emissions Trading Scheme (ETS) in 2015. the first national cap-and-trade system in operation in East Asia. The current rate is US$ 24 per tonne CO_2 emission. The Korea ETS plays an important role in meeting Korea's 2030 NDC target of 37 percent GHG emission reductions below BAU emissions, aiming to reduce GHG emissions in a cost-effective manner, transform the Korean industry to a low-carbon highly energy efficient industry and create new growth through green technology.

Since 2012, the government of Japan implemented carbon tax to put fair burden for the use of all fossil fuels based on their CO_2 content to realise a low-carbon society and strengthen climate change mitigation. The current rate of the carbon tax on all fossil fuels in Japan is US$ 3 per tonne CO_2 emission.

Carbon tax may have inflationary impact on essential commodities and, hence, affect the people who are not offenders of emission. So, the social impact of carbon tax is to be considered before introducing it. However, a symbolic carbon tax at a very low rate may be introduced.

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[14] Ernest & Young LLP, & Shakti Sustainable Energy Foundation (2018) *Discussion Paper on Carbon Tax Structure for India*. Ernest & Young LLP, Kolkata, pp. 17-18. Available at: https://shaktifoundation.in/report/discussion-paper-carbon-tax-structure-india-full-report/ [Accessed: 04 September 2019].

[15] World Bank (2019) *State and Trends of Carbon Pricing*. The World Bank Group, Washington DC. Available at: https://openknowledge.worldbank.org/handle/10986/13334

[16] ibid.

2.4.2 SUBSIDY AND PRICING

Taxes on fossil fuel energy, carbon pricing, fossil fuel subsidy reforms and subsidy on renewable energy are the main fiscal policy instruments for addressing the adverse effects of climate change from the mitigation point of view. On the other hand, subsidy in food, agricultural sector and certain types of export may be considered as effective fiscal policy tools from the adaptation perspective. Before discussing the climate sensitivity of subsidy and pricing policies in Bangladesh, it would be worthwhile to look at some of the current policies.

SUBSIDY POLICIES IN BANGLADESH

Bangladesh is yet to formulate any comprehensive national subsidy policy. However, some individual sector policies, such as Export Policy 2015-2018, National Food Policy 2006, National Energy Policy 2004, Power Sector Master Plan 2010, and National Agriculture Policy 2013 have highlighted several interventions using subsidy in reaching their respective goals. Moreover, the government has developed a systematic mechanism for determining the rate and products of cash incentives for promoting export recently. Under this mechanism, selection of export products for subsidy is made by a high-powered committee headed by the Minister of Finance. The rates of cash incentives for different products are also finalised by this committee. Now, the government announces different rates of cash incentives for 27 types of products. The rate varies from 2 percent to 20 percent.

PRICING POLICIES IN BANGLADESH

Fuel prices in Bangladesh are regulated by the government and are not frequently adjusted in line with price movements in international market. The domestic oil prices in Bangladesh are not flexible with market demand and supply. Mainly, two types of fossil fuels are consumed in Bangladesh which is liquid oil and natural gas. On behalf of Ministry of Power Energy and Mineral Resources, 'Bangladesh Energy Regulatory Commission (BERC) mainly fix the wholesale and retail prices of different types of liquid oil. Historically, liquid oil prices in Bangladesh remained below the international price due to subsidy intervention. However, since 2015, the scenario has started to reverse following the massive fall in oil prices in the international market.

There was an initiative by the BERC to introduce an automatic oil pricing mechanism in 2012 to pass through international prices to the domestic consumers. However, the implementation of the mechanism is yet to take place. In the absence of holistic pricing policies, the attention of pre-tax price setting remains on the sensitivity of the respective petroleum product in terms of the observed impact on consumer welfare. Once pre-tax price is set, the amount of VAT, the margin for distributing companies and a little margin for transportation and 'Bangladesh Petroleum Corporation's (BPC) development fund are added to this price to determine main oil depot price. Finally, the retail price of the petroleum products is determined by adding transportation cost, depreciation and evaporation cost of dealers including their profit margin. The pricing consideration of some of the key petroleum products are furnished below:

Diesel and Kerosene: Diesel is mainly used in agricultural and transportation sector while kerosene is consumed mostly by low income households for lighting their homes. The pricing policy, therefore, suggests a subsidy for these products. Generally, retail prices of both diesel and kerosene remain equal while wholesale prices charged to the marketing companies differ slightly. According to BERC, the prices of diesel and kerosene were adjusted downward in April 2016 at Tk. 65 per litre for allowing domestic pass through of decline in international price. Moreover, the pre-tax prices of kerosene are higher than that of diesel. Hence, given the equal prices of both products, the profit margin of kerosene is smaller than that of diesel.

Octane and Petrol: Octane and petrol are primarily used by the affluent class of the society and hence are subject to higher prices with taxation. According to BERC, the prices of octane and petrol were adjusted downward direction in April 2016 at Tk. 89 per litre and Tk. 86 per litre respectively due to decline in international oil price.

Furnace Oil: In Bangladesh, furnace oil is mainly used for power generation by the private producers. It is also used in manufacturing sector. The price of furnace oil was adjusted downward in March 2015 at Tk. 42 per litre due to decline in international oil price.

Natural Gas: In Bangladesh, natural gas is mainly consumed for electricity generation including captive power, and fertiliser production. It is also consumed by industrial sectors, commercial sectors, tea garden and household level. BERC mainly determines retail prices of natural gas at the consumer level. Like liquid oil price, no formula of predictable mechanisms is being followed in determining gas price. The prices of natural gases for different classes of consumers are determined on ad-hoc basis by considering the socio-economic realities of the country. However, there is a system of public hearing for fixing the price.

The price of natural gas for different consumer level varies and increased over the period as shown in the following table. The gas prices for household consumption also increased significantly during this period.

Table 2: Natural Gas Prices in Bangladesh

(Tk. Per Cubic Metre)

SL	Classes of consumer	Aug 2009	Aug 2015	Mar 2017	June 2017	July 2019
01	Electricity	2.82	2.82	2.99	3.16	4.45
02	Captive power	4.18	8.36	8.98	9.62	13.85
03	Fertiliser	2.58	2.58	2.64	2.71	4.45
04	Industry	5.86	6.74	7.24	7.76	10.70
05	Tea garden	5.86	6.45	6.93	7.42	10.70
06	Commercial	9.47	11.36	14.20	17.04	17.04
07	CNG	30.00	35.00	38.00	40.00	43.00
08	Household					
	a) Metered	5.16	7.0	9.10	11.20	12.60
	b) Single burner (per month)	400.00	600.00	750.00	750.00	925.00
	c) Double burner (per month)	450.00	650.00	800.00	800.00	975.00

Source: Bangladesh Energy Regulatory Commission

Electricity: Electricity tariff is determined by BERC in consultation with the government in two steps. In the first step, BERC fixes the bulk tariff rate by official gazette notification which is imposed by the Bangladesh Power Development Board (BPDB) for the distribution companies. In the second step, BERC determines the retail tariff rate by similar notification which is imposed by power distribution companies on the final consumers. In 2004, the government approved a 'Power Pricing Framework' which provides some basic principles of electricity tariff adjustment.

Following the principles set out in the framework, BERC gradually increased average bulk supply tariff with some variation among different clients. The existing bulk rate does not cover the whole supply cost of electricity even though production cost is lowered by subsidising fuel cost such as natural gas, coal, diesel etc. As a result, BPDB has incurred losses by selling electricity at prices lower than the break-even point. Retail electricity tariff structure also differ across different sectors, levels of consumption, and time of consumption. In practice, retail electricity tariff is relatively lower in agriculture and residential consumption compared to that for industrial and commercial sectors. In the residential sector, tariff rate increases with the level of consumption.

HISTORICAL PRICE MOVEMENT OF DIFFERENT TYPES OF FOSSIL FUEL IN BANGLADESH

Historically, the price of natural gas remained most underpriced in Bangladesh compared to the other classes of fossil fuels. Figure-3 compares the price indices of different kinds of fossil fuel in relation to GDP deflator which shows that prices of furnace oil and diesel was increasing at a faster pace compared to GDP deflator while natural gas price index increases at slower pace. However, the prices of natural gas are mostly subsidised, and more than 55 percent of natural gas is consumed in power, and industry sector.[17]

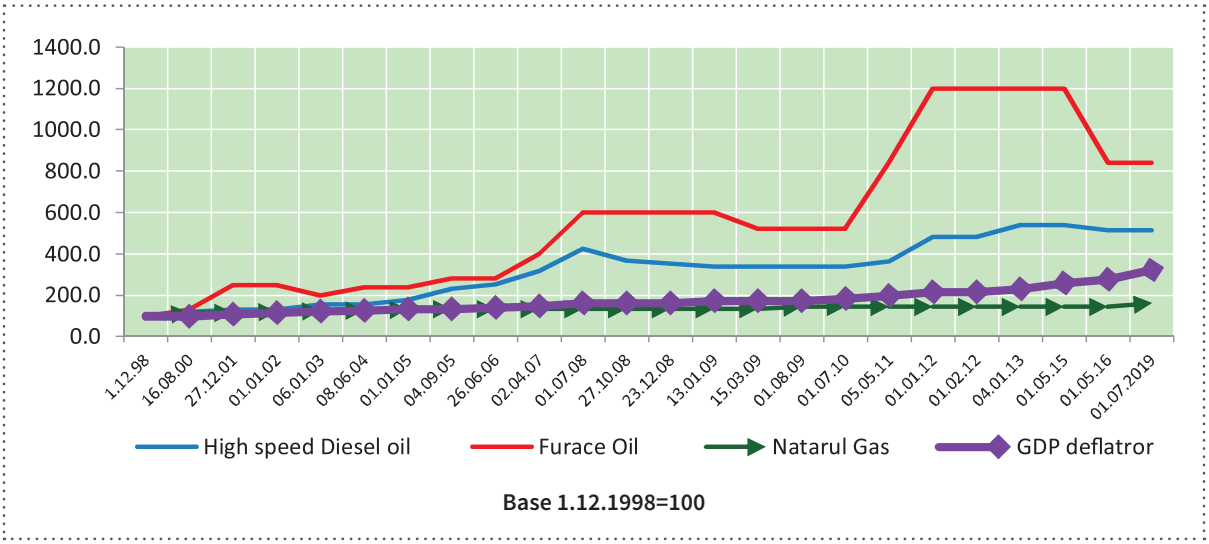

Figure 3: Fuel Price Index and GDP Deflator

Source: BPC

[17] Petro Bangla, sector wise gas consumption in FY2016-17.

CLIMATIC AND ENVIRONMENTAL ASPECTS IN PRICING AND SUBSIDY POLICIES

Environmental cost imposed by added carbon emission due to fossil fuel burning by different sectors is not internalised in their pricing mechanism in Bangladesh. Rather prices of such fuel in Bangladesh have historically remained below the market price due to government subsidy. Fossil fuels are the most important primary inputs in communication, power, agriculture, and household and industry sectors. Hence, raising their prices is associated with increase in production cost which is ultimately linked with cost push inflation. As a result, neither the real supply cost nor the environmental cost is reflected in the existing fossil fuel pricing mechanism. While discussing the climatic aspects in pricing and subsidy of Bangladesh, the following relevant facts are taken into consideration:

- Agriculture, energy, land use change and forestry, waste and industrial processes are the main emissions sectors in Bangladesh. The agriculture sector contributed (37 percent) most to GHG emission followed by energy sector (33 percent). Rice is the main agricultural crop in Bangladesh mostly concentrated in irrigated field which shows the highest rate of methane emissions (Figure-4). In the energy sectors, electricity and heat production contribute most to GHG emissions. Other fuel combustion, manufacturing and construction and transportation sub-sectors are also the important contributors in energy sector. Side by side, land use change and forestry, waste and industrial process were responsible for 15 percent, 9 percent and 5 percent emission respectively in 2014.

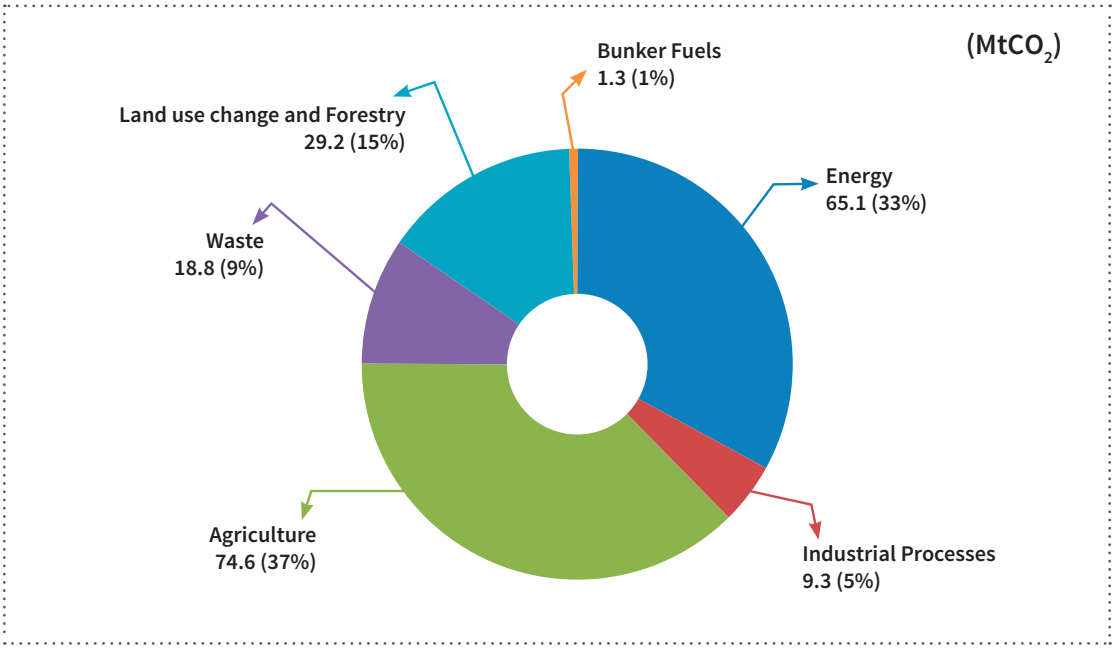

Figure 4: Emission by Sectors

Source: WRI CAIT, 2019

- According to World Resources Institute database, total GHG emissions in Bangladesh grew by 2.18 percent annually since 1990 to 2014 (Figure-5) where the contribution of agriculture sector was stable over time. On average, GHG emissions from this sector grew at 1 percent annually. On the other hand, the emissions from energy sectors showed an increasing trend over time. The growth rate of GHG emissions from this sector was on average 6.74 percent with substantial variations. Emissions from industrial sectors were almost non-existent in the 1990s. But the growth rate from industrial sector has got momentum in the recent years. For example, annual emission from industry sector was 0.18 Mt in 1990 which increased to 9.3 Mt in 2014 growing annually by 17.9 percent.

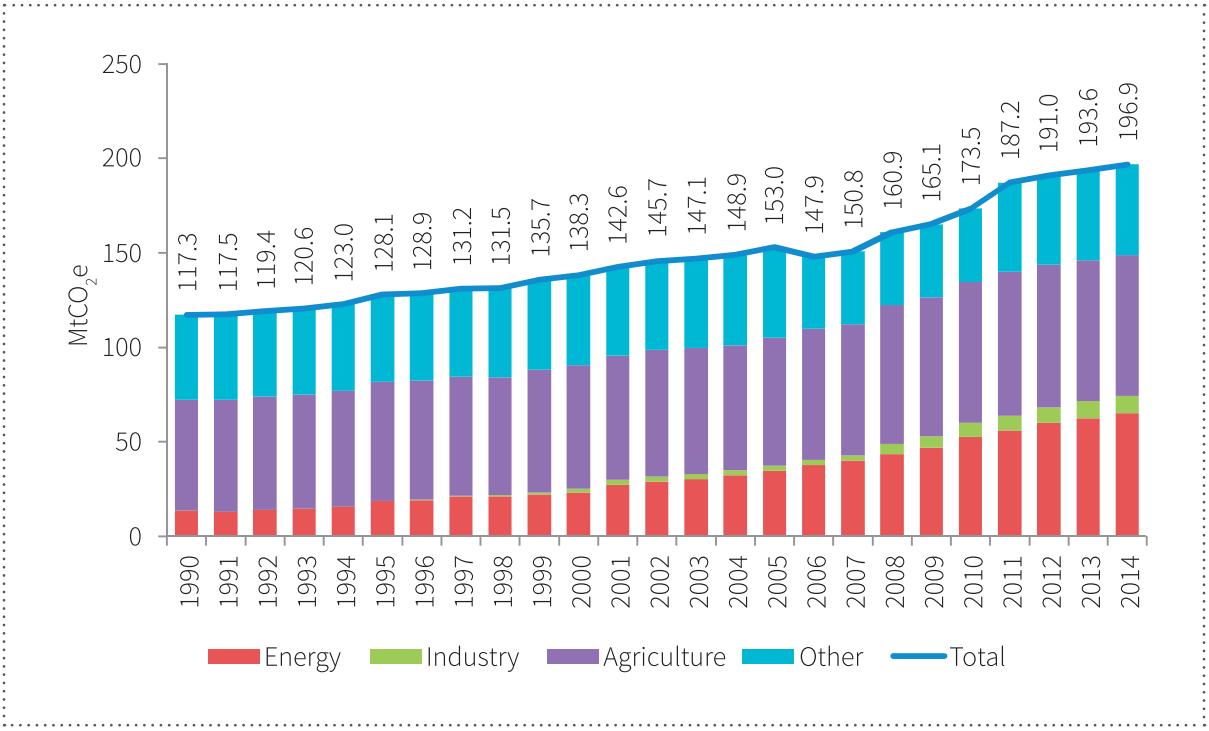

Figure 5: Historical Trend in GHG Emissions in Bangladesh

Source: WRI CAIT, 2019

- Bangladesh is one of the smallest GHG emitters in the world. Thus, the scope for applying appropriate fiscal policy tools to mitigate GHG is very limited. Although agriculture sector is the highest GHG producer in Bangladesh, it is one of the most subsidised sectors as well. This does not necessarily mean that the withdrawal of subsidy from agriculture would be a desirable option. In agriculture, even though irrigated rice fields show the highest rate of methane emission, it is the most productive sector. Thus, withdrawal of subsidy from this sector may reduce the rice production which will hamper the food security.

- Energy sector is the second highest emitter in Bangladesh, and it is increasing over time. As per World Resource Institute database, 65 Mt CO_2 was emitted by energy sector in 2014 where the contributions of electricity/heat, other fuel combustion, manufacturing/construction and transportation sub-sector were 50.5 percent, 20.3 percent, 15.6 percent, and 13.6 percent respectively. It may be mentioned that most of basic inputs of energy production in Bangladesh are subsidised and underpriced. Power generation in Bangladesh is significantly natural gas-based followed by liquid fuel. According to BPDB, in FY2017-18, nearly 63.5 percent electricity was generated using natural gas, 24.5 percent by liquid fuel (furnace oil 17.3 percent and diesel 7.2 percent), 2.7 percent by coal, 1.6 percent by hydro and a negligible amount (0.1 percent) from renewable energy.[18] In addition, 7.6 percent of electricity was added from imported source. The fuel mix in power generation is changing over time. In FY2007-08, the contribution of natural gas was 86.3 percent while the share of liquid fuel was only 5.6 percent. The share of hydro was 3.9 percent and coal were 4.3 percent, among others. The change in the fuel mix of power generation has substantial impact on the cost structure as well as on the total subsidy cost. Given this scenario, removal of subsidy and proper pricing policy in the energy sector can help reduce emissions from this sector.

[18] Bangladesh Power Development Board (2018) *Annual Report. 2017-18*. Bangladesh Power Development Board, Dhaka, p. 13.

- According to Finance Division and BPC, among the petroleum products, diesel and kerosene which altogether accounted for 71 percent of consumption in FY2016-17 were the most subsidised items in Bangladesh and most of the products were consumed in communication and power sectors. Thus, gradual withdrawal of petroleum subsidies along with establishing market-based pricing may help reduce emission by reducing consumption of diesel in communication and power sectors. Market based pricing of petroleum products may hurt agriculture sector by reducing real income of farmers. A compensatory measure of providing income support to the marginal farmers can be taken by strengthening social safety nets. In this case, withdrawal of energy sector subsidy will increase fiscal space for funding increased adaption spending.

ALIGNING SUBSIDY REGIME WITH CLIMATE RELATED SDGs

In the preceding sections, an analysis of fossil fuel subsidy along with other subsidy regimes in Bangladesh has been presented. From the analysis, it is evident that, fossil fuel subsidies are given in Bangladesh to make fuel products cheaper to common masses in order to help improve their living standard. However, because of the market distorting character of subsidies, investment in the cleaner and renewable energy is being hindered. As Bangladesh has been striving to achieve SDGs, the subsidy regime of the government should be aligned in such a way that environment and climate-friendly energy production and consumption are encouraged. Besides, the subsidy in agriculture and export should also be reformulated in a way so that it conforms environmental and climate related SDG objectives.

2.5 SUPPLY OF CLIMATE FINANCE

The supply of climate finance may come from both domestic and external sources. Government, NGOs and private sector are the potential sources of domestic climate finance while the financing windows like GCF, Adaptation Fund, LDCF are the main sources of international climate finance.

2.5.1 RESOURCE FLOWS

Several entities such as the government, private sector agencies, think-tanks, international institutions, banks and other financial institutions are involved in myriad activities related to climate finance. Climate finance generally refers to the flow of funds that is required to support activities aimed at reducing GHG emission and adapting to the adverse effects of climate change. Mitigation involves the reduction in the concentrations of GHG, either by reducing their sources or by increasing their sinks. Examples of climate expenditure towards mitigation includes use of fossil fuels more efficiently for industrial processes or electricity generation, switching to renewable energy (solar energy or wind power). Adaptation to the impact of global warming can be defined as adjustments of a system to reduce vulnerability and to increase the resilience of a system to change. Example of climate expenditure for adaptation includes new seed varieties that can resist water stress and flooding in Bangladesh.

The government has demonstrated its commitment to undertake both adaptation and mitigation efforts as part of its agenda for sustainable development. It is proved by the fact that every year the government channels a lot of resources for significant investment in projects/programmes for ensuring climate resilience and encourages mitigation efforts by embarking on solar energy projects, afforestation programs in climate hotspots, programmes for promoting the use of new technology to replace coal-fired kilns, etc. In reality, Bangladesh is meeting the challenges of climate change with whatever resources it can mobilise from both domestic and external sources as shown in the following schematic diagram.

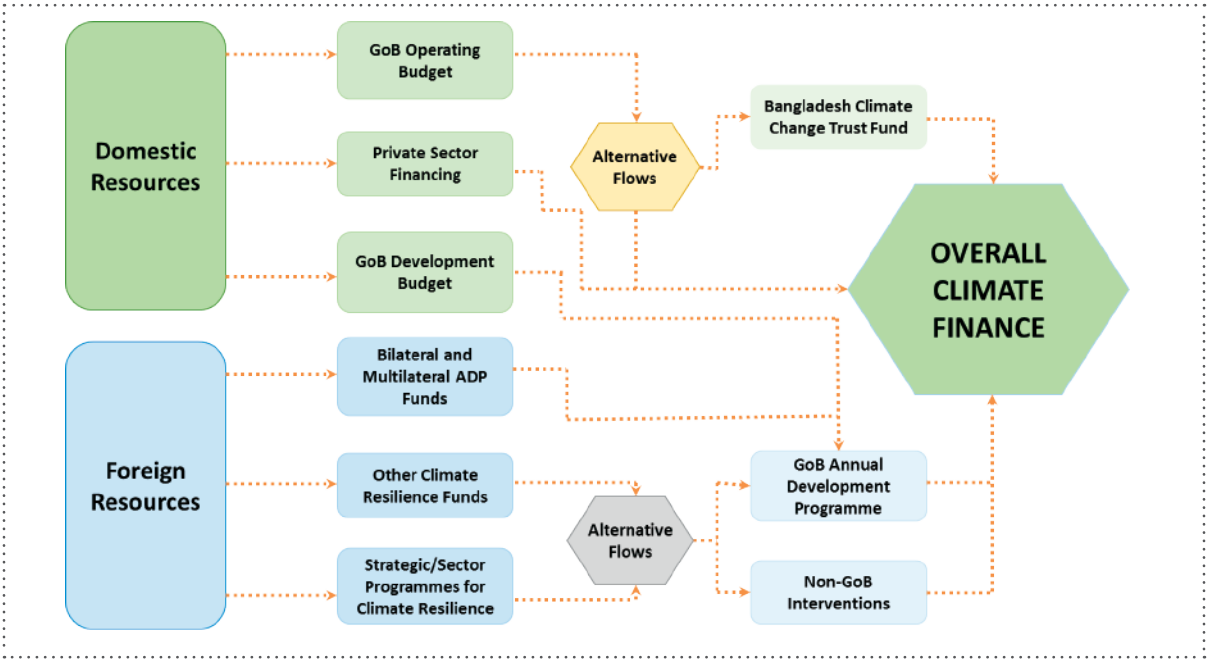

Figure 6: Climate Funds Flow in Bangladesh

2.5.2 PUBLIC SECTOR CLIMATE FINANCE

DOMESTIC CLIMATE FINANCE

Bangladesh is politically committed to address the issues associated with climate change and take forward the climate change agenda to combat its adverse effects. The country has been reflecting its commitments by putting in place supportive policy and regulatory regime and climate investment programmes. The focus of climate activities in Bangladesh is on increasing resilience. However, reduction of GHG emission is also quite prominent in the climate change agenda being pursued.

To inform the wider stakeholders about the resource commitment towards climate investment, Finance Division has already published four climate budget reports. The first one was published in June 2017 titled Climate Protection and Development covering six climate spending Ministries and presented before Parliament with budget documents for FY2017-18. The second climate budget report titled 'Climate Financing for Sustainable Development' for FY2018-19 was published in June 2018. After that, the third and fourth reports for FY2019-20 and FY2020-21 were published under the same title. All the reports were presented before Parliament along with the budget documents. The last report covered the allocation and expenditures of twenty-five Ministries/Divisions.

The climate relevant allocation of the twenty-five Ministries/Divisions account for 56.69 percent of the total national budget of FY2020-21. Out of this total allocation, 7.52 percent was climate relevant. For these Ministries/Divisions, total climate change relevant allocation increased significantly from FY2016-17 to FY2020-21 by 69.14 percentage point. The climate relevant allocation for operating budget decreased from 7.60 percent in FY2016-17 to 6.50 percent in FY2020-21 while that for development budget increased from 7.1 percent to 8.5 percent over the same period. In absolute terms, over these five years the climate relevant allocation increased from Tk. 14,323.10 crore to Tk. 24,225.70 crore, which is 0.8 percent of GDP of FY2020-21. The following table presents the trends of climate financing for twenty-five Ministries/Divisions (Appendix-5).

Table 3: Trends of Climate Financing in Twenty-Five Ministries/Divisions

Budget Description	Annual Budget/Expenditure *(amount in crore taka)*								
	2020-21	2019-20		2018-19			2016-17		
	Budget	Budget	Revised	Budget	Revised	Actual	Budget	Revised	Actual
Operating Budget	**156254.4**	**143712.0**	**143994.2**	**132361.3**	**134986.2**	**132749.4**	**113058.8**	**107346.2**	**99779.9**
climate relevant allocation	*10073.8*	*9886.3*	*9287.4*	*9580.3*	*9232.1*	*8804.0*	*8570.2*	*7509.0*	*5702.8*
as % of operating budget	*6.5*	*6.9*	*6.5*	*7.2*	*6.8*	*6.6*	*7.6*	*7.0*	*5.7*
Development Budget	**165730.6**	**160326.2**	**157852.2**	**133734.5**	**135224.2**	**125812.9**	**80750.8**	**84192.9**	**77829.0**
climate relevant allocation	*14151.9*	*13873.3*	*13506.5*	*11850.4*	*12275.5*	*11332.9*	*5752.9*	*6454.6*	*5776.4*
as % of development budget	*8.5*	*8.7*	*8.6*	*8.9*	*9.1*	*9.0*	*7.1*	*7.7*	*7.4*
Total Budget	**321985.0**	**304038.2**	**301846.3**	**266095.8**	**270210.4**	**258562.3**	**193809.6**	**191539.1**	**177608.9**
climate relevant allocation	*24225.7*	*23759.6*	*22793.9*	*21430.8*	*21507.6*	*20136.9*	*14323.1*	*13963.6*	*11479.2*
as % of total budget	*7.5*	*7.8*	*7.6*	*8.1*	*8.0*	*7.8*	*7.4*	*7.3*	*6.5*
as % of GDP	0.8	0.8		0.8			0.7		

Source: Finance Division, Ministry of Finance

The following table shows allocation and expenditure according to BCCSAP thematic areas for FY2016-17 to FY2020-21 of selected Ministries/Divisions. Of the six thematic areas, Food Security, Social Protection and Health received the highest allocation across the years under review followed by Infrastructure. It appears that out of the total climate change relevant allocation, the share of Food Security, Social Protection and Health is 41.3 percent and that of Infrastructure is 26.0 percent in FY2020-21. In FY2016-17, actual climate relevant expenditure against the revised budget was 82.21 percent, while in FY2018-19, it was around 92.63 percent.

Table 4: Allocation Across BCCSAP Thematic Areas in Selected Ministries/Divisions

BCCSAP Thematic Areas	Climate Relevant Allocation/Expenditure *(amount in crore taka)*								
	2020-21	2019-20		2018-19			2016-17		
	Budget	Budget	Revised	Budget	Revised	Actual	Budget	Revised	Actual
Food security, social protection and health	**9,992.7**	**9,233.6**	**8,614.6**	**8,890.9**	**8,482.2**	**7,596.8**	**7,065.7**	**6,233.2**	**4,623.6**
% of climate relevant allocation	41.3	38.9	37.8	41.5	39.4	37.7	49.3	44.6	40.3
% of Ministry/Division budget	3.1	3.0	2.9	3.3	3.1	2.9	3.7	3.3	2.6
Comprehensive disaster management	**1,810.7**	**2,134.0**	**1,765.3**	**1,997.4**	**1,850.8**	**1,448.7**	**1,777.8**	**1,392.0**	**794.0**
% of climate relevant allocation	7.5	9.0	7.7	9.3	8.6	7.2	12.4	10.0	6.9
% of Ministry/Division budget	0.6	0.7	0.6	0.8	0.7	0.6	0.9	0.7	0.5
Infrastructure	**6,303.9**	**6,787.8**	**7,226.8**	**5,726.5**	**5,963.5**	**5,454.1**	**2,395.3**	**2,811.8**	**2,851.2**
% of climate relevant allocation	26.0	28.6	31.7	26.7	27.7	27.1	16.7	20.1	24.8
% of Ministry/Division budget	2.0	2.2	2.4	2.2	2.2	2.1	1.2	1.5	1.6
Research and knowledge management	**848.6**	**894.4**	**754.4**	**857.8**	**887.2**	**853.9**	**805.7**	**806.4**	**724.0**
% of climate relevant allocation	3.5	3.8	3.3	4.0	4.1	4.2	5.6	5.8	6.3
% of Ministry/Division budget	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
Mitigation and low-carbon development	**4,003.4**	**3,514.7**	**3,435.9**	**2,987.1**	**3,406.5**	**4,002.1**	**1,110.9**	**1,582.7**	**1,426.6**
% of climate relevant allocation	16.5	14.8	15.1	13.9	15.8	19.9	7.8	11.3	12.4
% of Ministry/Division budget	1.2	1.2	1.1	1.1	1.3	1.6	0.6	0.8	0.8
Capacity building and institutional strengthening	**1,266.3**	**1,195.2**	**996.8**	**971.1**	**917.3**	**781.4**	**1,167.7**	**1,137.6**	**1,059.9**
% of climate relevant allocation	5.2	5.0	4.4	4.5	4.3	3.9	8.2	8.2	9.2
% of Ministry/Division budget	0.4	0.4	0.3	0.4	0.3	0.3	0.6	0.6	0.6
Total Climate Relevance (TK.)	**24,225.6**	**23,759.6**	**22,793.9**	**21,430.8**	**21,507.5**	**20,136.9**	**14,323.0**	**13,963.6**	**11,479.2**
% of Total Budget	**7.5**	**7.8**	**7.6**	**8.1**	**8.0**	**7.8**	**7.4**	**7.3**	**6.5**

Source: Finance Division, Ministry of Finance

In addition to development and operating budgets, there are other funding mechanisms which are identified as follows:

BANGLADESH CLIMATE CHANGE TRUST FUND (BCCTF)

In the backdrop of inadequacy of climate finance from both multilateral and bilateral sources, the government has created the Bangladesh Climate Change Trust Fund (BCCTF) in 2009 from its own revenue and enacted a piece of legislation called Climate Change Trust Act 2010 to provide BCCTF a legal footing. The BCCTF was created to combat climate change impacts as well as to implement BCCSAP 2009 by undertaking projects based on the thematic areas and programmes mentioned in BCCSAP. Up to FY2020-21, BCCTF received a total allocation of Tk. 3,900 crore and till August 2020, a total of 789 projects under BCCTF have been approved of which 728 projects are implemented by the government Ministries/Divisions while the remaining 61 projects were implemented by different NGOs under the supervision of Palli Karma Sahayak Foundation (PKSF). Among the Ministries/Divisions, Local Government Division received the highest allocation of Tk. 1,312.96 crore followed by Ministry of Water Resources and Ministry of Environment, Forest and Climate Change with allocation of Tk. 1043.766 crore and 415.15 crore respectively. The table below shows the number of projects and amount of allocation according to Ministries and Divisions:

Table 5: Projects and Allocation from BCCTF

S.l	Name of Ministry/Division	Number of approved Projects	Project allocation *(crore taka)*
1	Ministry of Water Resources	132	1,043.76
2	Local Government Division	441	1,312.96
3	Ministry of Environment, Forest and Climate Change	68	415.15
4	Ministry of Agriculture	21	135.54
5	Ministry of Disaster Management and Relief	8	125.51
6	Ministry of Power, Energy and Mineral Resources	3	56.02
7	Ministry of Shipping	3	51.76
8	Ministry of Education	29	76.66
9	Ministry of Defence	9	45.21
10	Ministry of Health and Family Welfare	3	22.12
11	Ministry of Science and Technology	2	19.31
12	Ministry of Women and Children Affairs	2	8.00
13	Ministry of Chattogram Hill Tracks Affairs	3	8.53
14	Ministry of Fisheries and Livestock	1	2.00
15	Ministry of Home Affairs	1	2.00
16	Ministry of Civil Aviation	1	1.00
17	Ministry of Public Administration	1	0.19
	Total	**728**	**3,325.75**

Source: BCCTF 2020

It appears from the analysis of administrative division-wise allocation that Barishal Division has received the highest number of projects and allocation followed by Chattogram and Dhaka Division respectively. In contrast, Mymensingh Division, with 31 projects and a little over Tk. 114.51 crore, has received the smallest number of projects and allocation. The following table (Table-6) shows the division-wise projects and budget allocation from BCCTF:

Table 6: Division-wise Projects and Allocation from BCCTF

	Division	Number of Projects	Allocation *(crore taka)*
1	Dhaka	122	540.72
2	Chattogram	131	618.60
3	Barishal	134	687.59
4	Khulna	79	282.71
5	Rajshahi	75	197.43
6	Rangpur	58	168.27
7	Sylhet	41	138.97
8	Mymensingh	31	114.51
9	More than one Division	57	576.90
	Total	**728**	**3,325.75**

Source: BCCTF 2020

An analysis of allocation and number of projects according to BCCSAP thematic areas reveals that Infrastructure accounted for 60.91 percent of total allocation with 395 projects which was the highest among the thematic areas followed by Mitigation and Low Carbon Development and Food Security, Social Protection and Health receiving 18.30 percent and 10.78 percent allocation respectively (Table-7).

Table 7: BCCSAP Thematic Area-wise Projects and Allocation from BCCTF

Thematic Area	Number of Projects	Allocation *(crore taka)*	Percent of Allocation
Food Security, Social Protection and Health	104	358.80	10.78
Comprehensive Disaster Management	12	158.80	4.80
Infrastructure	395	2,025.95	60.91
Research and Knowledge Management	35	131.56	3.95
Mitigation and Low Carbon Development	173	608.62	18.30
Capacity Building and Institutional Strengthening	9	42.01	1.26
Total	**728**	**3,325.75**	**100**

Source: BCCTF 2020

EXTERNAL CLIMATE FINANCE

Bangladesh Climate Change Resilience Fund (BCCRF) - BCCRF owned and managed by the government was established in May 2010 to support implementation of BCCSAP after signing a memorandum of understanding with multiple development partners. The Fund activities continued till 30th June 2017 since it came into operation. Funds were allocated to projects and activities in accordance with BCCRF objectives. The investment projects of BCCRF collectively disbursed US$ 71.13 million by the end of December 2016. The following table presents the disbursement details:

Table 8: Disbursement Against BCCRF Investment Projects

Sl. No.	Projects and Operating Expenses	Disbursements *(million US$)*
1	Emergency 2007 Cyclone Recovery and Restoration Project (ECRF)	23.06
2	Secretariat for BCCRF	0.30
3	Community Climate Change Project	12.98
4	Climate Resilient Participatory Afforestation and Reforestation Project (CRPARP)	29.89
5	Rural Electrification and Renewable Energy Development Project II (REDD II), Solar Irrigation Project	5.00
	Total	**71.13**

Source: BCCRF Annual Report 2016

International Sources- The government of Bangladesh receives funds from various funding windows like Adaption Fund, LDCF, GCF. Green Climate Fund (GCF) which was created to support the efforts of developing countries to respond to the challenge of climate change, helps them to limit or reduce their greenhouse gas (GHG) emissions and adapt to climate change. Bangladesh took the strategic decision to establish the National Designated Authority (NDA) at ERD, Ministry of Finance and since establishment it has been proactive in seeking National Implementing Entities (NIEs) to access GCF. Bangladesh is having some successes in accessing GCF through multilateral entities, but less with direct access by government entities. The main challenge for the government departments is the mismatch between accessing criteria and the country systems and practices in relation to public finance systems. Bangladesh will be deprived of the climate funding from GCF if the public-sector entities of the country meet those criteria. While the public-sector entities of the country have got quite a robust planning, budgeting, monitoring and evaluation framework, they all have solid experience of implementing projects using this framework.

Considering the existing systems and procedures of the country, the accessing criteria introduced by the GCF should be reconsidered for Bangladesh given its extreme vulnerability to climate change. What is important to note is that the country's fiduciary performance is improving with the implementation of reforms in budgeting, accounting and government auditing over the past two decades.

GCF so far approved four projects for Bangladesh such as 'Climate Resilient Infrastructure Mainstreaming', 'Enhancing adaptive capacities of coastal communities, especially women, to cope with climate change induced salinity', 'Global Clean Cooking Program – Bangladesh' and Extended Community Climate Change Project-Flood (ECCCP-Flood). Total project value for these projects is US$ 167.3 million of which US$ 94.7 million from GCF as grant and the remaining US$ 72.6 million as government co-financing.

A project preparation facility application submitted for US$ 345,800 by IDCOL was approved in 2018 to help finance the preparation of a Funding Proposal package for the proposed project titled 'Promoting private sector investment through large scale adoption of energy saving technologies and equipment for textile sector of Bangladesh'. In March 2019, Bangladesh also received from Global Adaptation Fund a grant worth around US$ 10 million for a project being implemented by the Department of Environment to enhance the climate resilience of vulnerable communities living in coastal islands and riverine chars in Bangladesh.

Bangladesh's 'Country Programme for Green Climate Fund' prepared by the NDA Secretariat in 2018 reflect the identified strategically important project/programmes and concept notes that were identified through a competitive project idea prioritisation process. These projects include both the full-fledged project proposals that are being developed and/or received preparatory finance from GCF. Indicative cost for these projects stands at US$ 3.3 billion, including government co-financing, which is presented at Appendix-6.

2.5.3 PRIVATE SECTOR CLIMATE FINANCE

Private sector can play an important role in financing climate adaptation and mitigation actions. However, on a global basis, adaptation is still seen as more of a public-sector focus than mitigation. This means that the private sector engagement in adaptation is still not adequate. There have been some notable success stories in the area of mitigation, especially the large-scale roll- out of rural solar systems which was a joint venture between Grameen Shakti, an NGO, and Rahimafrooz, a large local conglomerate as well as a Clean Development Mechanism (CDM) project by Waste Concern. While there is a greater focus, particularly on the private sector, on mitigation opportunities in climate change, there is a growing recognition that increased focus and investment should be made on adaptation.

The private sector with its expertise in technology and service delivery has competencies to make a unique contribution to adaptation, through innovative technology, design of resilient infrastructure, development and implementation of improved information systems and the management of major projects. There are future investment opportunities in adaptation in water resources, agriculture and environmental services. In agriculture, investment may be needed for developing irrigation equipment and technologies as well as fertilizers. Provision of clean water is another opportunity, requiring investment in water purification and treatment technologies such as desalination, and wastewater treatment technologies. Environmental services such as weather derivatives are also a possible area for investment.

BUSINESS SECTOR CLIMATE FINANCE

Bangladesh has a track record of leadership and innovation in climate change management, and many Bangladeshi businesses have already started harnessing opportunities of providing new products and services that build resilience and reduce emissions. For example, a number of commercial activities under the umbrella of "green economy", within the fields of renewable energy, energy efficiency, waste management and recycling are being undertaken by businesses in Bangladesh. Agribusiness companies are developing and marketing climate resilient seed varieties. First-mover companies report multiple drivers for undertaking a climate-related activity, highlighting that climate change presents a window of opportunity to take action on issues and areas that are already important to the business. For example, Rahimafrooz Renewable Energy sees an opportunity to improve its key business function of logistics and the company's ability to deliver service in remote areas. Companies also cited energy or resource efficiency initiatives to reduce costs. Recycling the millions of tonnes of garment waste being created daily has become a business for hundreds of SMEs in Bangladesh, supported by the Small and Medium Enterprise Foundation (SMEF). The primary driver for this enterprise was reducing the consumption of materials and creating new materials from the waste garments.

One important constraint in private sector engagement in climate change projects, for both mitigation and adaptation, is the lack of capacity of financial institutions to evaluate climate projects. This lack of understanding of specific types of climate change investments and their risk profiles means that banks often find it difficult to develop and structure appropriate financial products. Most of the commercial banks in Bangladesh rely on short term deposits, and more concerned with asset-liability mismatch. This also limits their ability and willingness to structure financial products with the longer tenure that is typically needed for climate change investments.

CHANGING THE ECONOMICS OF CLIMATE CHANGE INVESTMENTS

This can be done on several fronts including the tax regime, low cost debt financing, equity investments and even sharing of research and development costs. A mindset shift is required in the corporate sector to understand that those companies that adapt to the profound impact of climate change will gain major competitive advantage versus those that do not. One of the key messages to get across to both policymakers and corporate bodies, is that the resources and strategies adopted to tackle climate change in both mitigation and adaptation can be a source of national and company level competitiveness. This was amply illustrated by a country such as Denmark that used the energy crisis triggered by a spike in oil prices in the 1970s to move away from the over-reliance on fossil energies. This, in turn, created new industries and export capabilities whereby now Danish companies are world leaders in products such as wind turbines. On private sector involvement in adaptation, the following points are worth noting:

- The private sector can provide financial resources for adaptation through investments, financial risk management, commercial provision of capital and philanthropic provision of resources through private foundations. However, the private sector will only provide investments for a specific rate of economic return. Below that rate, public investments remain essential.
- Financial risk management tools such as insurance schemes could provide an incentive for initiatives to reduce vulnerability before an event occurs, as well as provide economic relief after an event occurs. Any such insurance mechanism would need to reflect actual risks associated with specific locations and activities. It is possible to think of various types of insurance that could address climate change risks: insurance for investments, insurance for property, and insurance for large-scale catastrophes.
- The suite of financial risk management tools includes: commodity price hedging, economic shock funds, commodity price insurance, alternative risk transfer, hedge funds, alternative risk financing, structured risk financing mechanisms, effective use of developed captive insurance, credit and political risk coverage, hybrid insurance products, and catastrophe bonds.
- Regarding the provision of capital for adaptation actions, market finance (including venture capital, commercial loans and revolving credits) could become a viable option in the future. In many instances, adaptation actions are already being undertaken by private actors, whether individuals or firms. However, at this point, in contrast with financing for mitigation, the public sector is expected to be the main source of funding for adaptation.

A few general concepts emerge which are useful as guidance:

- The need to “pay the innovator”: As the carbon market provides incentives and rewards for innovation, finding ways of rewarding private sector actions which enhance adaptation will be necessary to massively upscale private sector engagement.
- The need to fill information gaps and build awareness: An important first step in this regard has been supporting the efforts of the government to identify immediate adaptation priorities for the

private sector through the preparation of NAP. A next step may be to publicize these needs in a form that will encourage business engagement.

- The need to share the risks associated with climate change impacts and with taking adaptive measures. For instance, finding ways of lowering the barriers for private insurers to make appropriate insurance products available for low income communities, and at a national level could have significant benefits for reducing the vulnerability of individuals and communities to climate risks.
- The need to build the capacity to engage as partners with the private sector in a way that improves the likelihood that the needs and interests of the country will be protected.

2.5.4 NGO-CIVIL SOCIETY CLIMATE FINANCE

Civil society expenditures will be primarily motivated by concerns to improve society by way of gender empowerment and social inclusion primarily through service provision in health, education and agriculture sectors as well as micro-credit and skills upgrading. These objectives are also highly relevant to climate which falls most heavily on women and the most marginalised in society and is linked to agricultural practices. Data on foreign funding for NGOs in Bangladesh shows that this was US$ 695 million (Tk. 57 billion) in FY2014-15 according to the NGO Affairs Bureau.[19]

2.5.5 OTHER FINANCING OPTIONS

CLIMATE BOND

According to the NDC targets, Bangladesh will need to invest over US$ 67 billion in various adaptation and mitigation measures by 2030. In order to mobilise such large funds, different avenues need to be explored. The most promising but least harnessed method is the use of climate bonds. A climate bond is one of the innovative instruments through which resources can be mobilised from financial market for climate change adaptation, mitigation, renewable and other climate related and environment-friendly projects. Different countries of the world have started to introduce this instrument as a financing option.

Box 1: Country examples - Issuance of climate bond

Issuance of climate bond has been popular in many countries of the world as a financing window. According to Climate Bonds Initiative's database, global green bond issuance reached US$ 167.3 billion in 2018, and surpassed 2017 volume of US$ 162.1 billion by 3 percent. In 2018, the United States, China and France accounted for 47 percent of global green bond issuance. The US issuers contributed US$ 34.1 billion to the total, and Franch – US$ 14.2 billion. Emerging markets (EM) are showing encouraging signs of growth in the issuance of such bonds. China retained a leading role with 78 percent of 2018 EM issuance volumes and 18 percent of global volumes, up from 14 percent in 2017. China continued to be important with the 2018 issuance with its investment at US$ 30.9 billion. The Republic of Indonesia also issued US$ 1.25 billion green sukuk sovereign bond in March 2018. Moreover, Nigeria became the first African country to issue sovereign green bond in 2017 while the pacific island country Fiji also issued sovereign green bond.

In keeping with practice being pursued by different countries, Bangladesh may look towards the introduction of climate bond as a tool to finance climate investments as well as to further its economic development. However, Bangladesh faces different sets of challenges in taking forward the climate bond initiative. For

[19] Bangladesh Financial Intelligence Unit (2015) *NGO/NPO Sector Assessment of Bangladesh*. Financial Intelligence Unit, Dhaka, p. 36. Available at: https://www.bb.org.bd/pub/research/sp_research_work/srw1505.pdf [Accessed: 04 September 2019].

example, the secondary capital market is very much in its infancy and has not yet been able to produce a meaningful benchmark yield curve due to lack of debt instruments and thereby the markets remain inactive. As a result, there has hardly been any public issue of corporate bonds in the bond market. To develop a successful climate bond market, coordination among the key market players/stakeholders in the public and private sector are necessary. Although, no specific legal requirements are mandatory for issuing climate bonds, appropriate rules and regulations are required for ensuring good governance and building trust among the potential investors. Moreover, appropriate guidelines or rules and regulations for listing of climate bonds are also needed. In Bangladesh, while revising the existing medium-term debt strategy, climate bond could be included as a promising financing window for mobilising finance for climate investments.

BLENDED CLIMATE FINANCE

Most of the developing countries in the world suffer from a chronic deficit of infrastructure (energy, water and sanitation, ICT, water management, housing and public buildings) at varying scales. This constrains economic growth, leaves the most vulnerable communities without access to basic services and hampers attempts to achieve the goal of "no poverty" as articulated in SDGs- the global development agenda. Studies suggest while there is a never increasing demand for infrastructure investment, there is a huge financing gap which cannot be solely met either by public finance or private finance. It is in this context, there is a need for seeking innovative sources of development finance for infrastructure. Blended finance is one such innovative approach which can channel resources to large and critical infrastructure projects.

Blended finance generally refers to the "complementary use of grants (or grant equivalent instruments) and non-grant financing from private and/or public resources to provide financing on terms that would make the projects financially viable and/or financially sustainable". This innovative approach to development finance has the potential to achieve a number of objectives- from increasing the volume of development finance in the context of constrained resources, to increasing the viability of investments, to enhancing the overall effectiveness of investment. In addition, there are "main five potential benefits associated with blended finance: (i) improved financial viability of projects (ii) additionality (the net impact of blending after taking into account what would have happened in the absence of grant), (iii) positive demonstrative effects, (iv) improved financial sustainability and (v) improved coordination among donors and Development Finance Institutions (DFIs)."

Climate events like floods, intense storms, droughts are already wreaking havoc on the planet. Avoiding widespread damage arising from the onslaught of these events will require effective and efficient use of public and private financing in support of building low-carbon, climate resilient infrastructure (LCR). An estimate indicates that the annual cost of such investments would be in the order of trillions of dollars.

Another estimate suggests that by 2030, globally there will be a need to put in place approximately US$ 85 trillion worth low-carbon climate-resilient (LCR) infrastructure to meet the Paris climate change agreement's goal of keeping the global average temperature increase well below 2 degrees Celsius by 2050. Meeting this infrastructure investment need will call for doubling today's global capital stock.

LCR infrastructure links the climate and development agenda in a variety of ways. For one, the impact of climate change is being felt most acutely by the poorest and most vulnerable people in developing countries. This link between climate change and poverty is reflected in the SDGs, which recognize addressing climate change as a development outcome.

In Bangladesh where public finances are constrained, blending of finance could be an option to meet the LCR infrastructure needs by emulating practice of blending in different countries bearing in mind the associated challenges that need to be managed.

MOBILISING BUDGET SUPPORT FOR IMPLEMENTATION OF BCCSAP

Since the government has got a clearly laid out strategy called BCCSAP together with result-focused public financial management system, transparent reporting and public accessibility of information, the option of mobilising budget support from Development Partners (DPs) to implement the activities set out in the document may be explored.

CROWDFUNDING

Crowdfunding represents a new and largely untapped source of private sector financing. Mobilising funds through crowdfunding and disbursing it through microfinance institutions (MFIs) can be considerably faster than ODA and lower in transaction cost. Crowdfunding can tap into a more risk-tolerant segment of individual donors/lenders/investors and enable MFIs and small-scale financing institutions to venture into new business fields which still need to be tested in large scale application and pose additional risk to lenders.

EMISSIONS TRADING

Emissions trading is a market-based approach used to control pollution by providing economic incentives for achieving reductions in the emissions of pollutants. Emissions trading works by setting a quantitative limit on the emissions produced by emitters. The economic basis for emissions trading is linked to the concept of property rights. The economic problem with climate change is that the emitters of greenhouse gases (GHGs) do not face the full cost implications of their actions. The future trend of carbon emission projected by the World Bank in 2010 shows Bangladesh's CO_2 emissions for the benchmark, high-growth and low-growth scenarios. As expected, the projections show sharp increases in CO_2 emissions due to increasing energy demand by the growing and more affluent population. Some perspectives on these projections include:

- The projected 2050 level of the benchmark scenario (628 Mt of CO_2 emissions) is about one tenth of what the United States is currently emitting with an only slightly higher population than what Bangladesh projected to have in 2050
- The projected 2050 level of the high-growth scenario (913 Mt of CO_2 emissions) is about 16 percent of what the United States is emitting
- The projected 2050 level of the low growth scenario (431 Mt of CO_2 emissions) is less than 5 percent of what the United States is currently emitting.

In December 1997, Bangladesh along with 160 other countries, completed negotiations at the third session of Conference of Parties (COP3) at Kyoto, Japan to finalise a protocol known as the Kyoto Protocol. This protocol includes provisions for carbon trading together with targets and time table for reduction of six greenhouse gases, which are: carbon dioxide, methane, nitrous oxide, hydroflurocarbons, perfluorocarbons and sulphur hexafluoride. However, since Bangladesh's emission is almost negligible compared to the global total, the trading may not be significantly beneficial for the country. Investments by the developed countries primarily in the following areas, through joint implementation mechanism, may benefit the country by way of carbon trading:

- Undertake afforestation and reforestation programmes
- Use of environment-friendly technologies
- Use of better equipment to help conserve the country's natural resource base.

2.6 FINANCIAL SECTOR POLICIES

The adversities of climate change affect not only the fiscal sector but also the other sectors of the economy including the financial sector as they do not operate in isolation. The financial sector comprising mainly banking, capital market and insurance sectors is increasingly facing the challenges arising from the negative impacts of climate change which has a debilitating effect on the overall economic development of the countries that are extremely vulnerable to climatic shocks. Bangladesh is shockingly vulnerable as an innocent victim of climate change. It is, therefore, fundamentally important to turn the country's financial sector policies climate inclusive in tandem with developing climate inclusive fiscal policies. However, emphasis should be given on lending and insurance policies.

There is a need for reviewing the lending policies of Bangladesh Bank to promote funding for projects that help adapt to climate change and promote green growth, and the insurance policy to target differentiated impacts of climate change on different groups and address risks of loss and damage. It is also important to highlight on climate investment strategies to promote green banking in Bangladesh, including Bangladesh Bank's role in this process.

2.6.1 LENDING POLICY

Currently, the core lending policies are embedded in different regulations, guidelines and master circulars issued by Bangladesh Bank from time to time. These are in most cases intended to provide guidance to the financial institutions on credit risk management, internal credit risk rating system, loan rescheduling, loan classification and provisioning, consumer financing, agriculture and rural credit policy and programme, and SME financing. However, there is a designated outfit within Bangladesh Bank called Sustainable Financing Department to deal with green financing and it has delivered 52 green products (Appendix-7). As part of the Bangladesh Bank's green credit policies, commercial banks and other financial institutions (NBFIs) are required to allocate 5 percent of their total loan portfolio to green sectors. There is also a range of green re-financing lines subsidising green lending, including renewable energy and energy efficiency projects (solar home systems, biogas, improvement in brick-kiln technology, etc.). Consistent with green prudential regulation, the Bangladesh Bank has lowered equity margin requirements for projects that are environmentally and socially sustainable. The Bangladesh Bank also issued policy guidelines for Green Banking in 2011 and designed a mechanism to incentivise banks' compliance to those guidelines by offering them preferential treatment when they do so. While these are laudable initiatives, the existing lending policies for the banking sector need to be reviewed, in consultation with Bangladesh Bank, to identify areas where channelling of loans to different sectors can be linked with climate change effects. This will encourage channelling of loans to the projects which will promote low carbon development and enhance adaptive capacity of the vulnerable population. On the gender front, a platform that brings policymakers, regulators, financial institutions, entrepreneurs, and development agencies together should be built to identify actions as to how to transform women's access to financial services as well as developing innovative solutions to drive improvements in women's economic opportunity and equality.

2.6.2 INSURANCE POLICY

Damages caused by natural disasters can put significant pressure upon public finances, with major fiscal implications in the short-term and wider long-term implications for development. Risk transfer offers the possibility of not only easing the immediate fiscal burden, but also reducing or avoiding long-term costs to public financial stability, economic growth and human development. Should a disaster occur, the insurance pay-out frees up public resources that would have otherwise been channelled towards other productive investments or further risk-reducing efforts.

Climate-induced disasters and extreme weather events such as flood, drought, cyclone and storm surges that affect agriculture production are a regular phenomenon and have become more intense and frequent in Bangladesh. For example, the cyclone *Sidr* in 2007 destroyed about 95 percent of standing crops in the coastal districts. In recent years, flash flood has become a frequent event in the northeast region of the country, causing huge crop loss and infrastructure damage. Natural disasters affect crop production in areas where low-income farm households greatly depend on it, thus making them more vulnerable. In Bangladesh, the catastrophe risks are dealt with by a mix of social safety net and informal post-disaster lending in Bangladesh. The absence of insurance support retards development because smallholders cannot take risk in investing in fixed capital or concentrating on profitable activities and crops for fear of losing them and falling into debt. Thus, a critical task for the public sector will be to support the private sector in financial risk sharing. The greater involvement of the private sector is critical if Bangladesh is to prepare itself for both the challenges and opportunities of climate change. The companies in Bangladesh are yet to consider the impact of climate change on their existing activities. While the benefit and importance of private sector engagement in the battle against climate change is much debated, the reality is that in Bangladesh, most of the private entities perceive climate change as either an irrelevant or at best an extension of their Corporate Social Responsibility (CSR).

Box 2: Country examples of successful climate induced disaster insurance

In India, several disaster micro-insurance schemes are in place, covering the loss of life or property, among others, caused by natural disasters. The All India Disaster Mitigation Institute (AIDMI) offers the disaster insurance program Afat Vimo, which protects households and microbusiness owners from several major types of disasters such as earthquake or flood in return for small annual premiums.

In Malawi, an insurance product protecting farmers against drought is offered bundled with a loan to foster investment in improved seeds. In case the associated drought index exceeds a specified level, the lender receives an insurance indemnity.

Creditors in Vietnam are protected from costs resulting from default risk and restructuring the loan portfolio due to excess water levels as indicated by measurements at a hydrological station. Intermediaries who purchase an index insurance contract receive a one percent payment for every centimetre above a strike value.

The African Risk Capacity (ARC) became the example case for a macro-level insurance. The African Risk Capacity Insurance Company Limited is another disaster risk pool which was established to protect African countries against droughts as indicated by a precipitation index.

To effectively safeguard the rural population in Bangladesh, there is an overriding need to test risk cover innovation beyond traditional credit mechanism and disaster-relief programs. Insurance may stand in good stead to provide risk cover for the rural farmers.

The existing insurance policy neither adequately addresses climate issues, nor does it target the differentiated impact of climate change on different socio-economic groups such as women and people with disabilities and ethnic minorities. It has not been framed giving due regard to the risks of loss and damage of standing crop, livestock and small business entities and associated inclusiveness issues for socio-economic groups vulnerable to climate change in terms of access to insurance.

The existing insurance policy, therefore, needs to be reviewed, in partnership with Insurance Development and Regulatory Authority (IDRA), to identify areas where innovative tools related to climate risk transfer issues can be included. Different challenges related to insurance access by specific climate vulnerable communities will also be identified and addressed. This will improve their adaptive capacity. The results of pilots carried out by different NGOs including the potential of micro-insurance as a complement to adaptation actions should also be reviewed to propose relevant tools to IDRA.

2.6.3 GREEN BANKING

In 2009, aiming to promote green finance and sustainability, Bangladesh Bank launched a refinancing scheme for banks, with Tk. 200 crore from its own funds available for financing six green products including solar power, biogas, and effluent treatment plants. Currently, there are 4 refinancing (on-lending) schemes under its jurisdiction that support low cost green financing:

- Refinance Scheme for Green Products/Initiatives
- Refinance Scheme for Islamic Banks and Financial Institutions for Investment in Green Products
- Green Transformation Fund
- ADB-supported Financing Brick Kiln Efficiency Improvement Project

The Quarterly Review Report on Green Banking Activities of Banks and Financial Institutions and Green Refinance Activities provides detailed information on the operation of these four facilities.

BANGLADESH BANK REFINANCE SCHEME FOR ENVIRONMENT FRIENDLY PRODUCTS

In order to promote the environment-friendly financial products/initiatives in Bangladesh, a total amount of Tk. 3,797.26 million has been disbursed till June 2018 under this revolving refinance scheme. A total of 35 banks and 20 Financial Institutions so far have signed participation agreement with Bangladesh Bank for this purpose after the issuance of the master circular (SFD Circular No. 03/2017). The disbursement scenario of this scheme during April-June 2018 quarter is furnished below:

Table 9: Green Product/Initiative-wise Disbursement

Sl No.	Products/Initiatives	Disbursement *(crore Tk.)*
1	Biogas	0.12
2	Energy Efficiency	1.30
3	Green Industry	10.00
4	Safe Work Environment	2.79
	Total	**14.21**

Source: Bangladesh Bank

ASIAN DEVELOPMENT BANK SUPPORTED FINANCING BRICK KILN EFFICIENCY IMPROVEMENT PROJECT

"Financing Brick Kiln Efficiency Improvement Project" has been launched by Bangladesh Bank with financing support from Asian Development Bank (ADB) for reducing greenhouse gas emissions and fine particulate pollution from brick fields of the country and building environment-friendly brick field. Relending facilities are extended to the participating banks and financial institutions for this purpose. So far, 36 banks and 21 financial institutions have signed participation agreement with Bangladesh Bank. Under this relending facility, a total amount of US$ 22.75 million has been disbursed to 11 sub-projects through 12 Participating Financial Institutions (PFIs) up to June 2018. The project came to an end in December 2018.

REFINANCE SCHEME FOR ISLAMIC BANKS AND FINANCIAL INSTITUTIONS FOR INVESTMENT IN GREEN PRODUCTS/INITIATIVES

Bangladesh Bank issued an integrated and comprehensive master-circular in April 2018 by revising and incorporating all the existing circulars related to the refinance scheme for Islamic banks and Non-Bank Financial Institutions (NBFIs) under renewable energy and eco-friendly sectors. According to this circular, existing scheme will be named as "Refinance Scheme for Islamic Banks and Financial Institutions for Investment in Green Products/Initiatives". Bangladesh Bank has enhanced the product range under this scheme from 50 to 51 and segregated these products into 8 categories. During the second quarter of 2018, Bangladesh Bank has disbursed Tk. 31.43 million for "Working Environment and Fire Safety of Factory" and earned Tk. 0.49 million profit against this product.

GREEN TRANSFORMATION FUND

In 2016, Bangladesh Bank introduced a refinance scheme namely Green Transformation Fund amounting to US$ 200 million. So far, under this scheme, a total of eighteen banks have signed participation agreement with Bangladesh Bank. This fund is intended to facilitate access to financing in foreign exchange to Export-oriented Textile and Textile Products, and Leather Goods Manufacturing Industries to import capital machinery and other necessities relevant to following environment-friendly/green attributes.

a) Water use efficiency in wet processing
b) Water conservation and management
c) Waste management
d) Resource efficiency and recycling
e) Renewable energy
f) Energy efficiency
g) Heat and temperature management
h) Air ventilation and circulation efficiency
i) Work environment improvement initiatives, and
j) Other sectors to be specified by Bangladesh Bank from time to time.

CLIMATE RISK FUND

Another measure introduced under the umbrella of the Policy Guidelines for Green Banking was the Climate Risk Fund (CRF).[20] Bangladesh Bank instructed banks and other financial institutions to allocate at least 10 percent of their annual CSR budget to the Climate Risk Fund, which could be accessed for activities related to environmental conservation and pollution control, climate mitigation and adaptation or disaster management. Funds were to be distributed either through grants or financing at a reduced rate of interest.[21]

2.7 CLIMATE INCLUSIVE PLANNING AND BUDGETING

A key objective of turning the planning and budget process climate inclusive is to ensure that adequate investment is in place to address the adverse effects of climate change. Here the current process of integrating climate into the budget and planning process has been discussed with the proposal of the potential areas where this integration needs to be strengthened by adopting different policy interventions.

2.7.1 KEY ENTRY POINTS FOR INTEGRATING CLIMATE CHANGE IN DEVELOPMENT PLANNING AND BUDGET PROCESS

For integrating climate change into the planning and budget process, several key entry points are available in the planning and budgeting architecture. These are as follows:

- Five-year plan and sector strategies
- Annual Development Programme
- Medium Term Macroeconomic Framework
- Budget Circular, Medium-Term Budget Framework and Key Performance Indicators.

In the last two years, considerable work has been done in these areas to make them climate inclusive. However, the intervention should continue, and the results should be sustained by way of mainstreaming them in the system.

2.7.2 CLIMATE CHANGE IN DEVELOPMENT PLANNING

Development planning in Bangladesh is led by a rolling planning process set by the Ministry of Planning. This includes five-year plans and annual plans. The 6th five-year plan already laid strong emphasis on climate and environment and the ongoing 7th five-year plan lays even stronger emphasis on climate change. The 7th five-year plan while setting development priorities states that “Incorporating environment, climate change and disaster risk reduction issues in the project formulation, budget allocation and implementation process” and “Preparing a Country Investment Plan (CIP) to identify the priorities in environment, forest and climate change sector and estimating investment need and financing gap”. Ministry of Environment, Forest and Climate Change has prepared a CIP-EFCC which has been discussed in the previous section on climate finance.

[20] Bangladesh Bank (2013) Policy Guidelines for Green Banking. In *GBCSRD Circular 04/2013*. Bangladesh Bank, Dhaka, p. 3. Available at: https://www.bb.org.bd/mediaroom/circulars/gbcrd/aug112013gbcrd04e.pdf [Accessed: 04 September 2019].

[21] Bangladesh Bank (2018) *Bangladesh Bank’s Journey with Financial Inclusion and Climate Change*, p.9.

CPEIR recommended that, the climate dimension should be embedded in the DPP/TAPP formats just as gender and poverty dimensions have been. The Planning Commission revised DPP formulation guidelines in 2016 where the analysis of impact on environment and climate has been specifically mentioned. In this guidelines, the effect on climate change and other closely related issues has been incorporated. However, it still lacks integration of climate finance.

In the guidelines, instruction has been given to keep the project consistent with different short, medium and long-term development plan, policy and strategy with specific illustration of several plans and goals where any specific climate change policies, for instance BCCSAP could be incorporated to attach the cross-cutting feature of the climate change issue. The DPP can be designed in a way so that BCCSAP thematic areas and resource allocation can be linked and the resource allocation under each theme of BCCSAP can be singled out. Climate proofing of the design of the projects needs to be ensured which is not incorporated in the current DPP format and guidelines. The guidelines can present the criteria of climate proofing of the project bearing in mind the properties of mitigation and adaptation as illustrated in the BCCSAP.

2.7.3 CLIMATE CHANGE IN THE BUDGETING PROCESS

A key public finance reform introduced in FY2004-05 by Finance Division was the MTBF which applies to all Ministries and Divisions of the government. The MTBF sets out next year's budget and two-outer year's projection both for recurrent and development outlays. The MTBF comprises the Medium-Term Macroeconomic Policy Statement (MTMPS) and the Ministry Budget Framework (MBF). MBFs are prepared by Ministries/Divisions within ceilings allocated by Finance Division. The MBF comprises of mission statement and major functions; medium-term strategic objectives and activities; impact of medium-term strategic objectives on poverty reduction and women's advancement (including relevant spending); priority spending areas/programmes (including implementing agencies and economic classification) and key performance indicators (KPIs) linked to strategic, medium-term targets. The MBF also reviews recent achievements, activities, output indicators and targets and expenditure estimates of the agencies within the Ministry.

The budget circular provides the format for the MBF to be followed by the respective Ministries/Divisions. The Climate Fiscal Framework 2014 proposed to include climate dimension in the format of budget circular (as has been done for poverty and gender) and provided an annex on climate relevance criteria. Accordingly, the Finance Division revised the budget circular for FY2017-18 and laid down the steps and procedures for inclusion of climate dimension in MBFs.

The national budget setting process using MTBF is rooted in its broader Medium-Term Macroeconomic Framework (MTMF), but its current ambit does not take the climate dimensions into account and measure the effects of climate change on macroeconomic indicators. Against this backdrop, the Finance Division has started the process of integrating the climate change dimension with the existing macroeconomic framework through macro-econometric modelling exercise to find out the impact of climate change on major macroeconomic indicators, such as public investment, private investment, government expenditure, government revenue, growth, external trade and so on. The possible impact of climate change on the major macroeconomic indicators in the medium and long term will be worked out through simulation exercise based on the results generated by the macro-econometric model. This will help the government achieve sustainable high growth through adequate climate investment in public and private sectors.

2.7.4 CLIMATE FINANCE AND PFM REFORMS

Since the adoption of CFF in 2014, a fundamental reform in PFM landscape of the country has been effected through the introduction of a multi-dimensional Budget and Accounting Classification System (BACS) in FY2018-19. Designed in line with international best practice, BACS can accommodate any changes prompted by the reforms in the PFM system. This has given an opportunity to systematically track climate expenditure subsumed in the budgets of different climate relevant ministries with support from a web-based IT platform called iBAS++. Use of this classification and tracking process for climate has been made easier by the iBAS++. This is used for the formulation, implementation and accounting of budget which has been upgraded by a sophisticated, integrated and web-based system named iBAS ++. The system is now being used by all the Ministries/Divisions.

The issue of climate finance and iBAS++ with new classification should be considered simultaneously. Climate finance can be introduced through the new Classification of Functions of Government (COFOG). In addition to the effort of integrating climate finance with the iBAS++ in the setting of the new BACS, other reforms that need to be brought on to integrate climate dimension in the PFM system are as follows:

- Both MBF and MTMPS should be climate change inclusive
- In budget dialogue, climate change agenda should be included as part of the budget preparation process
- Climate change issue needs to be highlighted in the budget debate in the parliament
- Climate finance issue needs to be integrated in the course curriculum of the PFM trainings.

2.7.5 CLIMATE PUBLIC FINANCE TRACKING

Climate public finance tracking is one of the climate related financial planning and management tools designed to understand a country's resource commitment to address the adverse effects of climate change. It is increasingly important to track and report financial flows that support climate change mitigation and adaptation, to build trust and accountability with regard to climate finance commitments and monitor trends and progress in climate-related investment. However, the current arrangements in place demand more transparency, comparability and comprehensiveness which are very important for the government. The key objectives of this exercise are to: report on climate finance flows aligned with national climate strategies and plans, improve the governance of climate finance, facilitate the assessment of results from climate investments and support better project design.

The benefits that this exercise, as a decision support tool, is expected to deliver include ensuring alignment of climate finance with the BCCSAP (thematic areas and programmes), reporting of climate finances as per the ministry budget allocations, thematic areas and programmes of BCCSAP, reporting on both allocation and expenditure and indicating where further financing is necessary and policy priorities that need to be reviewed and re-adjusted. Moreover, the most significant long-term and sustainable impact of this exercise is the enhanced awareness of the policymakers and planners across the government of the relevance of climate change actions.

Two main technical approaches to weighting relevance have been used by countries - the objectives-based approach and the benefits-based approach. Typically, the former is simpler, while the latter is more complex and time-consuming, but potentially more robust. With lessons from the countries across the globe practicing the climate finance tracking and the advantages and disadvantages of different tracking approaches, Bangladesh has adopted a hybrid approach that can be better described as 'Objective-Based Cost Component Approach' to tap maximum advantages from both the approaches. This approach not

only classifies the climate relevance of projects and programmes, but also uses scientific bases to weighting of the allocations made for those projects/programmes.

Climate change as a cross-cutting theme runs across the public sector activities relevant to climate change adaptation and mitigation and is typically scattered across a number of Ministries - including for example Ministries of Agriculture, Water Resources, Energy and Transportation. This dispersion creates the risk of a lack of ownership and awareness and poses specific challenges for PFM relating to the difficulty of planning, identifying and reporting climate related expenditures.

OECD Rio Markers apart, the relevant policies, plans, strategies and other documents of the country have been extensively reviewed to contextualize the tracking methodology. It follows a step-by-step approach and comprises of five systematic steps: Linking BCCSAP themes and programmes with the climate relevance criteria (Appendix-8), assigning climate relevance weight against each of the climate relevance criteria, climate relevance of projects and programmes, estimating climate finance for multiple relevance criteria and climate finance weight for operating budget of the Ministries/Divisions (Appendix-9).

Climate public finance tracking is part of a broader package of reforms that is used to help operationalise national climate change policies and action plans. It is one component of CFF 2020 which has the broader scope of providing a comprehensive overview of domestic and international climate finance; linking climate change policies with planning and budgeting; prioritising climate actions; and developing appropriate modalities to manage climate financial flows in an effective and transparent manner.

Successful implementation of climate finance tracking and its continued use call for comprehensive capacity building of the relevant institutions. It is more likely to be sustained, where climate change expenditure reports are mainstreamed in the budget cycle and published as part of the budget reporting system; are used to inform parliamentary debate; and made available to the general public and the civil society.

2.7.6 MAINSTREAMING CLIMATE DIMENSION INTO PROCUREMENT PROCESSES

Public authorities are major consumers of goods and services. Their purchasing choices can make an important contribution to sustainable, mitigative and adaptive consumption and production which in turn are key for public investment and service delivery reaching such outcomes.

When it comes to climate change mitigation objectives, a lot of progress has been made internationally through Green Public Procurement (GPP) which is defined as “a process whereby public authority seeks to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured.” In the context of procurement, “green” should be mainly understood as low-carbon (mitigative), environmentally compatible and biodiversity loss preventing procurement.

The benefits associated with green procurement are documented that includes economic, social, environmental and climate change mitigation benefits. It is also considered that it brings political benefits in an “effective way to demonstrate the public sector’s commitment to environmental protection and to sustainable consumption and production”.[22] The Ministry of Infrastructure and Environment in the Netherlands estimated in 2011 that three million tonnes of CO_2 would be saved in the Netherlands alone if all Dutch public authorities applied the national Sustainable Public Procurement criteria, which include green criteria. Public sector energy consumption would be reduced by 10 percent.[23]

[22] European Commission *Benefits of GPP*. Available at: https://ec.europa.eu/environment/gpp/benefits_en.htm [Accessed: 04 September 2019].

[23] European Union (2016) *Buying Green!: A Handbook on Green Public Procurement, 3rd Edition.* European Commission, Luxembourg, p. 5. Available at: https://ec.europa.eu/environment/gpp/pdf/Buying-Green-Handbook-3rd-Edition.pdf [Accessed: 04 September 2019].

Until recently, there has been little effort to integrate climate change adaptation into the procurement processes. Even the very comprehensive publication titled "Buying for a Better World" by the United Nations Environment Program (UNEP) covered climate change from a mitigation perspective only.[24]

Rather than embarking on an ambitious reform, the government should investigate whether the successful delivery of climate finance does require the mainstreaming of climate change mitigation and adaptation into the national procurement policy framework or whether the current framework is sufficient. For example, climate change planning and budgeting to be effective might require:

- The development of award criteria to support suppliers meeting mitigation, adaptation and sustainability requirements,
- The development of criteria for tenderers selection and exclusion such as ability to supply certain goods that meet certain standards or be capable of not supplying certain services or conducting works that meet specific standards in relation to sustainability, mitigation and adaptation.

The government may conduct a national review of the national procurement policy framework (e.g. Public Procurement Act, Public Procurement Rules) and actual practices with respect to mitigation, adaptation and sustainability. This would allow the government to verify whether the current procurement policy framework allows and supports the translation of planning and budgeting decisions to invest in equitable climate change finance into government procurement choices and therefore a budget execution consistent with these decisions.

It would also help the government to identify whether there are good de-facto practices with respect to sustainability, mitigation and adaptation implemented by the Central Procurement Technical Unit (CPTU) under IMED that could be standardised and systematised.

2.7.7 ASSET MANAGEMENT, OPERATIONS AND MAINTENANCE

Asset management relates to setting aside sufficient financial resources for effective operations and maintenance. Operation and maintenance budgets are vulnerable to reduction, reallocation or neglect of implementation as they are genuinely variable costs. Commitments are often made on an 'as and when' basis rather than on a legally binding and regular basis (such as payroll, loan interest or capital payments to contractors). If budgets are not legally committed, proactive management action is required to spend. Weak asset management may be a particular challenge when government and donors prefer capital projects with visible and quick results.

Asset management and financial sustainability may receive less attention in the design and implementation stages for climate related projects such as water resources and afforestation. Where budget execution activities such as procurement systems may have a tendency to be overly lethargic, especially for multi-agency activities this may take what seems to be disproportionate effort and time for what is relatively small sums of money.

This is borne out by the Delta Plan which concludes: "At present operations and maintenance is the most neglected part of water sector spending and are in most cases once existing embankments/polders are near the point of collapse, projects are rarely undertaken to rehabilitate these infrastructures through the ADP." This can be addressed by ensuring strong asset management and earmarking finance for effective operations and maintenance.

[24] United Nations Environment Programme (2011) *Buying for a Better World: A Guide on Sustainable Procurement for the UN System*. United Nations Environment Programme. Available at: https://www.ungm.org/Areas/Public/Downloads/BFABW_Final_web.pdf. [Accessed: 04 September 2019].

2.8 ACCOUNTABILITY AND OVERSIGHT

Increasing climate finance flows call for stronger and effective accountability and oversight to see how well money is spent giving due regard to economy, efficiency and effectiveness. The accountable use of climate finance is crucial both in terms of utilisation of funds as well as ensuring that resources reach the communities most vulnerable to climate change. Democratic oversight presupposes the active engagement of democratic institutions, principally the parliament and its relevant committees, Supreme Audit Institution (SAI), Civil Society Organisations (CSOs), the media, and the government executives in formulating, implementing, monitoring and reforming policy.

The Parliament is one of the main pillars of the national integrity system. It approves national budget and holds the public officials accountable for their actions. The government executives play a vital role in implementation, monitoring and evaluation of public investment programmes. The OCAG as the SAI ensures that money is being spent for the purpose for which it is allocated. It also ensures that money is spent with regularity, legality and the spending achieves the best value for money. Civil society organisations, NGOs and the media (non-state actors) have an important role in ensuring the accountable and transparent use of resources as well as in working with communities to encourage their involvement in holding government to account.

2.8.1 MONITORING AND EVALUATION

The purpose of monitoring and evaluation is to assess the conformity of practice with a set of pre-established rules or guidelines. To affirm whether any government entity violates or transgresses rules, one must first explicitly describe the criteria against which the activities of an entity are being assessed. These criteria include two broad categories: legal obligations and best practices. Legal obligations include specific regulations, national legislation, the constitutional framework and international law. Best practices, on the other hand, are widely agreed upon standards that reflect a consensus among theorists and practitioners in a particular domain. Monitoring and evaluation not only attempts to change government policies but also seeks to document and analyse the impact of current governmental action and suggest ways to improve it. Monitoring and evaluation of climate finance primarily rests on the following state-actors:

PLANNING DIVISION

The Planning Division, Ministry of Planning is responsible for preparing the guidelines, policies and procedures for project preparation. It appears that, the manual and DPP/TAPP formats prepared by the Division are not yet fully aligned with BCCSAP and Bangladesh Climate Change and Gender Action Plan (ccGAP). Therefore, the current manual and DPP/TAPP formats need to be aligned with BCCSAP and ccGAP so that climate finance can be identified, and gender actions can be monitored and evaluated.

IMPLEMENTATION, MONITORING AND EVALUATION DIVISION (IMED)

The IMED of the Ministry of Planning is the central government agency for monitoring and evaluating all public-sector development projects, including climate finance projects of ADP. However, the Division cannot carry out this exercise with its limited capacity. The Division is facing the challenge in playing its due role in the absence of a climate inclusive monitoring and evaluation framework. Therefore, organisational and professional capacity of the Division needs to be enhanced to monitor and evaluate public investment programmes with climate actions.

MINISTRIES, DIVISIONS, DEPARTMENTS AND PROJECT IMPLEMENTING ENTITIES

These entities are responsible for design, formulation, implementation and regular monitoring of climate programs and projects. While preparing the project proposal, the Ministries/Divisions should ensure that the projects are designed in line with the thematic areas, programmes, and actions mentioned in the BCCSAP. The Ministries/Divisions should also ensure that the climate objectives set out in the NAPA, the Five-Year Plan, Perspective Plan, Bangladesh Delta Plan, Bangladesh ccGAP and other climate and gender related policy documents are addressed in the project design.

INTERNAL AUDIT

Internal audit is an independent, objective assurance and consulting activity designed to add value and improve an organisation's operations. It gives assurance on the efficiency and effectiveness of the entity's governance, risk management, control and accountability processes. Thus, internal audit acts as internal oversight of an organisation and is an important pillar of internal control. The Internal Control Manual issued by Finance Division is not mandatory for any organisation to follow since no Internal Audit Policy is adopted by the government and no Internal Audit Standards, and Internal Audit Guidelines are prepared as yet. Hence, Internal Audit Policy should be adopted together with Internal Audit Standards, and Internal Audit Guidelines giving special focus on climate finance governance.

2.8.2 OVERSIGHT MECHANISM

OFFICE OF THE COMPTROLLER AND AUDITOR GENERAL (OCAG)

OCAG is an independent body mandated by the Constitution to audit the accounts of all government entities. The audited accounts along with the audit reports are laid before Parliament. With its authority and mandate laid down in the Constitution, OCAG oversee the results of utilisation of climate finance by:

- auditing government's response to climate change
- auditing the operations of spending agencies to determine whether climate funds are being spent economically, efficiently and effectively
- auditing how efficiently and effectively government is implementing/has implemented the objectives set out in the BCCSAP, BDP, ccGAP, NAPA and other policy documents meant for addressing climate change and gender equity concerns
- reporting on how well government climate related programs and policies are meeting their objectives.

In order to carry out the mandated functions, there is a need to embed climate dimension in relevant standards, codes, manuals, and guidelines issued by OCAG. Together with this, professional capacity of the auditors needs to be further enhanced through training on climate performance audit.

PARLIAMENTARY OVERSIGHT

The fundamental objective of parliamentary oversight is to ensure improved governance of public finance. This oversight function is carried out by various committees established under the Rule of Procedures of Parliament. In the case of parliamentary oversight over public expenditure, the role of the standing committee on Public Accounts (PAC) is critically important. It is entrusted with the task of scrutinising

how the allocation authorised by Parliament is being spent. The PAC examines audit reports on national accounts and other annual reports submitted by CAG. After examining the report, the PAC gives directives and recommendations for necessary actions. Therefore, the PAC has a role to oversee how the government is responding to climate change and how regularity and value for money are ensured in managing climate finance.

CSO AND MEDIA

Citizen's engagement in democratic oversight is crucial for ensuring wider accountability and transparency in different spheres of public administration. Both the CSOs and media can contribute a great deal to this process since they constitute important pillars of the national integrity system. They are expected to analyse climate relevant allocation and expenditure as well as efficiency and effectiveness of climate spending. To do this, they need to be well-informed about the data sources and skilled enough to analyse the data against best-practice benchmarks.

SOCIAL AUDIT

Social audit is a form of accountability mechanism where citizens take part in the oversight of government's performance in the service delivery. It is a process which invites the citizens to promote a more inclusive government by expressing their voice. It relies on effective engagement of citizens and/or Civil Society Organisations (CSOs) to directly and/or indirectly demand accountability and transparency in the public policy and budget cycle.[25] Thus social audit applies more of human rights-based auditing (HRBA) approach unlike the kinds of auditing that are usually practiced by the public (the Supreme Audit Institution (SAI)) and/or private (the Chartered Accountant Firms) oversight body of a country.[26] Many countries of the world conduct social audit using different approaches. For establishing citizen centric climate finance governance, social audit may be introduced in Bangladesh following the approach suitable for the country context.

[25] UNDP (2011*) A Practical Guide to Social Audit as a Participatory Tool to Strengthen Democratic Governance, Transparency, and Account-ability*. New York: UNDP. Available at: http://www.undp-aciac.org/publications/ac/books/practicalguide-socialaudit-e.pdf. [Accessed: 26 September 2019].

[26] UNESCO (2007) *Social Audits for Strengthening Accountability: Building Blocks for Human Rights-Based Programming*. Bangkok: UNESCO Asia and Pacific Regional Bureau for Education. Available at: http://unesdoc.unesco.org/images/0015/001570/157021e.pdf. [Accessed: 01 October 2019].

CHAPTER 3

IMPLEMENTING THE FRAMEWORK

3.1 IMPLEMENTATION PLAN FOR CFF 2020

CFF 2020 has covered a lot of grounds that call for a well laid out plan for implementing the framework to derive the maximum benefit from the interventions it suggests. The following table captures an implementation plan for the framework covering short, medium and long-term time horizons:

Table 10: Implementation Plan for the Framework

Areas of intervention	Time horizon			Key responsible agencies
	Short	Medium	Long	
Climate inclusive fiscal policies	Work out options for climate inclusion in the Tax, VAT, Subsidy and Pricing policies	Seek agreement at the policy level and drawing up implementation roadmap	-	Finance Division, Relevant line Ministries, Internal Resources Division/National Board of Revenue
Supply of climate finance	Explore other climate financing options including climate bond, blended finance, crowdfunding, and emission trading	Implement, on a pilot basis, the identified options to test their viability in the country context	Develop relevant policies and strategies to scale up the result of pilot implementation	Finance Division, Bangladesh Bank, Bangladesh Securities and Exchange Commission (BSEC)
Private sector engagement in adaptation and mitigation actions	Identify sources of data and information on participation of private sector; collect and collate data from identified sources	Work out an incentive plan for attracting private sector	Develop a comprehensive and coherent policy for private sector engagement	Finance Division, Ministry of Industry, relevant line Ministries, National Board of Revenue
Role of NGO-civil society in climate finance management	Review the existing role of NGOs in climate finance governance and work out their possible engagement during Bangladesh's transition to higher middle-income country	Anchor NGO's role in implementing overarching climate policies, plans, and strategies including BCCSAP	-	Finance Division, NGO Affairs Bureau, BCCT, PKSF, Infrastructure Development Company Limited (IDCOL)

Areas of intervention	Time horizon			Key responsible agencies
	Short	Medium	Long	
Climate inclusive lending policy	Embed climate dimension in the wider lending policy premises of the central bank	-	-	Finance Division, Bangladesh Bank
Climate inclusive insurance policy	Identify technological innovation and institutional changes to operationalise the options identified in the scoping study done by the IBFCR Project	Calibrate insurance policy framework to include climate change dimensions	-	Finance Division, Financial Institution Division, IDRA
Other financing options: climate bond, blended finance, budget support, crowdfunding, emission trading	Carry out feasibility studies for options identified	Carry out pilot testing of feasible options	Embed the pilot results in relevant policy framework	Finance Division, Economic Relations Division, Bangladesh Bank, BSEC, Microcredit Regulatory Authority (MRA)
Green banking operations by central bank	Review the existing green banking policy to explore the scope of widening its remit and work out relevant options	Embed the feasible options in the green banking policy framework; design new products for climate inclusive investments	Develop innovative options for inclusion of vulnerable communities within the green banking operations	Finance Division, Financial Institution Division, Bangladesh Bank, Commercial Banks, Non-Bank Financial Institutions
Climate inclusive planning and budgeting	Review existing DPP/TAPP format to identify the entry points for inclusion of climate finance	Work out appropriate advocacy strategy for embedding climate finance in DPP/TAPP formats	Develop and implement suitable options for feeding climate finance information in DPP/TAPP into iBAS++	Finance Division, Planning Commission

Areas of intervention	Time horizon			Key responsible agencies
	Short	Medium	Long	
Local Climate Fiscal Framework	Develop climate finance tracking methodology for planning and budgeting of LGIs	Pilot the tracking methodology in selected LGIs	Scale up the tested methodology across the network of LGIs	Local Government Division, Finance Division
Green procurement	Develop award criteria to support suppliers meeting adaptation and mitigation requirements	Develop selection and exclusion criteria for tenderers that meet specific standards in relation to adaptation and mitigation	Suggest changes in procurement regulatory framework (PPA 2006, PPR 2008) to embed new criteria	Finance Division, Implementation Monitoring and Evaluation Division (IMED), Central Procurement Technical Unit (CPTU), PPP Authority
Accountability and Oversight	Develop climate inclusive Monitoring and Evaluation Framework for IMED	Develop internal audit guidelines for Ministries/ Divisions having climate agenda; Embed climate dimension in Terms of Reference of parliamentary financial committees to strengthen their oversight functions	Review the existing survey methodology of BBS and work out proposal for embedding climate dimension; Widen the coverage of social audit pilot exercise and work out proposal for inclusion in OCAG's audit protocol based on pilot results	Finance Division, IMED, Relevant Ministries/ Divisions, LGD, Parliament Secretariat, BBS, OCAG

However, successful implementation of this plan will require supportive institutional arrangements, links with ongoing reforms in PFM, and robust capacity building.

3.2 INSTITUTIONAL COORDINATION

Currently, the institutional activities are coordinated by three coordination hubs as set out in the CPEIR 2012. These are (i) planning coordination by Planning Commission, (ii) technical coordination by Ministry of Environment, Forest and Climate Change and finally (iii) financial coordination by Finance Division. In the case of climate finance, Finance Division is the lead organisation for allocation and mobilisation of climate finance along with integration of climate finance in the public finance management process. ERD is the NDA of Bangladesh to channel the finance from GCF in the country. At present, as many as 36 Ministries/Divisions get climate relevant projects which are linked to around 200 laws and bye-laws and 60 sector policies (CIP-EFCC 2016). Therefore, the whole range of climate change activities performed by different agencies call for a robust coordination mechanism to make them efficient and effective.

3.3 LINKS WITH ONGOING REFORMS IN PFM AND CLIMATE POLICY

The CFF 2020 is built on ongoing reforms in PFM and climate institutions and policy. The comprehensive PFM Reform Strategy 2016-2021 and PFM Action Plan 2018-2023 adopted by the government are instigating a number of reforms in the budget cycle. While implementing CFF changes taking place in the PFM landscape should be taken on board, for example, use of iBAS++ platform where climate dimension has been embedded to track the climate finance flows. In government audit protocol the pursuit of climate performance audit already introduced should continue. In the terms of reference of the relevant financial committees of the Parliament, climate dimension may be introduced to strengthen parliamentary oversight on climate investments.

In climate policy reforms, the main developments are the formulation of BDP 2100, CIP-EFCC, NDC and the revision of the BCCSAP 2009. These need to be implemented with close coordination with the Finance Division and Ministry of Planning to identify the government funds that will support the strategies. The government has also embarked on a NAP, and it will be important that this is developed as a whole of society and whole of government approach with key roles for MoEFCC on technical coordination, Ministry of Planning on planning coordination and Finance Division for financial coordination.

3.4 SKILLS AND CAPACITY BUILDING

The implementation of CFF 2020 will require significant skill and capacity enhancement on climate science, finance, policies and strategies for key relevant institutions including MoEFCC, MoF and Planning Commission. International best practices on climate financing can be exchanged through south-south cooperation. Building capacity and knowledge in the private sector is important as their engagement is instrumental to the climate change adaptation and mitigation. Collaboration between public and private sector needs to be strengthened to conduct economic analyses and market-based solutions to climate change. Climate change knowledge platform involving research organizations, CSO, NGO, academia, development partners and other relevant partners need to be established to generate knowledge product on climate change and to retain knowledge resources gathered from different sources which can be put to use while developing policies and strategies.

CHAPTER

4

CONCLUSION

The Government of Bangladesh has demonstrated its total commitment to address the adversities arising from the climate change by putting in place relevant policies and strategies. In 2014, it adopted a Climate Fiscal Framework which formally marked the beginning of the pursuit of climate finance reforms in the country. It was developed amidst a range of challenges arising mainly from its novelty- as till then no other countries could develop and adopt such a framework for mainstreaming climate finance in their policy architecture.

Since its adoption, remarkable developments took place both at the national and international fronts which necessitated an update of the framework to fit it in the current context. The present update takes into account all relevant changes in the country's climate policy landscape which have a direct bearing on climate finance ecosystem covering the whole of the society.

Specially, the framework attempts to cover financial sector operations like climate inclusive insurance and lending policies along with the government's fiscal operations covering innovative financing options such as climate bond, blended climate finance, budget support, and crowdfunding. In addition, the framework pays specific attention to private sector in climate finance governance.

Implementation of the updated framework is replete with myriad challenges emerging mainly from inadequate orientation of the new tasks and skills gap of those who are responsible for taking it forward. However, the framework envisages an elaborate agenda to build capacity of the relevant agencies to escape the eventuality of becoming a non-starter. Therefore, the framework puts on place an implementation plan indicating a range of activities to be implemented in different time horizons along with the roles and responsibilities of key relevant institutions to take the task foreword.

All relevant institutions have got to play their roles to implement the reforms laid out in the framework. While the Finance Division, Planning Commission, ERD and National Board of Revenue have the central role to play; the role of the Ministries and Divisions implementing climate relevant programmes, the Bangladesh Bank and the non-state actors like development partners, private sector, media NGOs/CSOs, academia, researchers is equally important.

The oversight institutions like the OCAG and the National Parliament will play a crucial role in ensuring wider accountability and enhanced transparency. Thus, a broad ownership is essential to ensure that the framework is implemented successfully to deliver intended outcome.

As climate finance continues to be a very dynamic area, implementation of CFF 2020 will face new and emerging challenges. In this context, the framework should be considered as a living document where evolving issues and priorities need to be adequately considered, analysed and accommodated.

APPENDIX

1

EXCERPTS FROM THE PROCEEDINGS OF VALIDATION WORKSHOP ON UPDATED CFF

Appendix 1: Excerpts from the Proceedings of Validation Workshop on Updated CFF

Date: 21 March 2019

Venue: Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP) Auditorium, Dhaka

Chief Guest: Mr. Mohammad Muslim Chowdhury, Comptroller and Auditor General of Bangladesh

Special Guest: Mr. Sudipto Mukerjee, Resident Representative a.i., UNDP Bangladesh

Chaired by: Mr. Abdur Rouf Talukder, Secretary, Finance Division

[...]

Business Session

Mr. Md Habibur Rahman, Additional Secretary, Finance Division, chaired the business session and started the session by suggesting that the discussion be conducted in Bangla to facilitate everyone's participation.

Mr. Md. Abu Sumon, Climate Change Expert of IBFCR then delivered a presentation on the integration of climate change policies and public finance. He shed light on the impacts of climate change in Bangladesh, including salinity intrusion, reduction of arable land, poisoned groundwater and displaced communities. The Bangladesh Bureau of Statistics (BBS 2015) indicates cyclone induced damage at that time was around Tk. 2,838.4 crore, where total disaster damage stood around Tk. 18,424.7 crore. Without changes to current global practices, Bangladesh would see annual economic costs equivalent to 2 percent of its GDP by 2050, widening to 9.4 percent by 2100. But if global mitigation actions are successfully implemented, those losses can be reduced to just over 2 percent by 2100. However, since we have no control over what other countries are doing, we can strengthen our domestic efforts to minimize losses due to climate change.

While dwelling upon the integration of climate change policies and public finance in Bangladesh, he referred to Bangladesh Climate Change Strategy and Action Plan (BCCSAP), Nationally Determined Contributions (NDCs), Country Investment Plan for Environment, Forest and Climate Change (CIP-EFCC), Bangladesh Country Programme for Green Climate Fund 2018 and Bangladesh Delta Plan 2100.

He said that US$ 42 billion is required to implement measures in various areas relevant to climate change, including food security, social protection and health, comprehensive disaster management, river flood and bank erosion risk management programme, climate change impact on infrastructure, enhancing energy security in rural areas by promoting renewable energy, climate change vulnerability in crop agriculture, urban areas and ecosystems, water security and policy and institutional capacity building.

Mr. Mahedi Masuduzzaman, Fiscal Policy Expert of IBFCR Project spoke about the supply of climate finance in the CFF, which sheds light on fiscal policies. He started with existing provisions in taxation policy, including tax interventions to facilitate adaptation and mitigation interventions and exploring the carbon emission tax option which countries such as Finland, France and India have adopted. He said a symbolic direct carbon tax at a very low rate (about one tenths of the standard rate) is suggested to be introduced in Bangladesh.

He then spoke about subsidies coverage in the CFF, with existing provisions in subsidy policy such as fossil fuel sector subsidy and considering subsidies/incentives in agriculture and export sector. The updated CFF also sheds light on the existing provisions in pricing policy, including fuel prices and electricity pricing in Bangladesh, and how subsidy and pricing regime can be aligned with climate action.

Financial sector policies are also covered, including existing green banking policies – Bangladesh Bank Refinance Scheme for Environment Friendly Products/Initiatives, Green Transformation Fund, ADB supported financing brick kiln efficiency improvement project and Climate Risk Fund. He concluded by stating that private sector

engagement and instruments such as climate bonds (Nigeria, Uganda, Fiji have done so already) can be potential sources of supply for climate finance.

Mr. Bikash Chandra Mitra, Audit Expert, then talked about the updated CFF's focus on climate inclusive planning and budgeting. The key entry points for integrating climate change into planning and budgeting include climate change in development planning (e.g., Delta Plan) and budgeting process (e.g. climate smart ministry budget frameworks, climate inclusive macroeconomic framework), climate finance and Public Finance Management (PFM) reforms (e.g., iBAS++), climate public finance tracking and mainstreaming climate change finance into procurement processes to make the process green.

He then spoke about the coverage of accountability and oversight mechanism in the CFF. Monitoring and evaluation is particularly important, and identified agencies include Planning Commission (bringing changes in DPP, TAPP to identify and monitor climate expenditure), IMED and line ministries (making their budgets climate inclusive and monitoring budget execution). Moreover, oversight mechanism is critical. In this regard, he mentioned the role of Office of the Comptroller and Auditor General (climate performance audits conducted, and guidelines created via IBFCR project), Parliament (inclusion of climate change aspect in the ToR of public accounts committee), CSOs and media (can raise public awareness in this matter).

For implementing the CFF, Mr. Mitra mentioned the need for policy buy in that also includes effective collaboration and coordination between the FD, PC, ERD and MoEFCC, institutional reforms, technical skills and capacity building, cooperation by bilateral and multilateral development partners and collaboration between public and private sector organizations. He ended with a vote of thanks to all.

Floor Discussion

The session chair then declared the floor open for feedback and inputs from the workshop participants. The summary of deliberations held is presented below:

- Identifying climate finance is a necessity in the project formulation process.
- Finance Division can allocate relevant codes for identifying climate finance which can be added in the DPP/TAPP formulation manual as an annex. This will help FD to disintegrate climate allocation in the national budget and expenditure as well.
- It is to be examined/tracked whether the CCTF fund is being allocated for the projects which are truly climate relevant.
- A strong monitoring mechanism should be in place to get the full benefit of CFF.
- In-depth study should be carried out before imposing carbon tax to avoid the risk of creating negative impact on GDP growth.
- For introducing climate inclusive subsidy and pricing policy, in-depth study should be done to estimate its social impact.
- The proposed CFF did not mention how the climate finance should flow at the local level. Description on how climate finance can flow better at the local level should be included.
- Separate format for identifying climate relevant expenditure in the projects should be included in the DPP/TAPP preparation guidelines for ex-ante tracking of climate allocation.
- It is the high time to embed green concept in the construction sector specially housing. Hence, the CFF should cover this issue.
- The Housing and Building Research Institute (HBRI) under the Ministry of Housing and Public Works has invented climate- friendly construction materials. This issue should be included in the CFF so that the use of climate friendly construction materials invented by HBRI can be made mandatory for construction of government infrastructure.
- Tax rebate can be given, and banks can charge less interest on loans for constructing green building and using climate friendly construction materials.
- In addition to carbon tax, carbon trading should be considered in the updated CFF.

- Geographical location and beneficiary location tracking of relevant projects could be introduced in the ADP.
- Whether the total foreign climate financing channelled to the projects implemented by public and private sectors is being tracked and there is any mechanism to do that.
- Monitoring by line ministries is very crucial and it is easier and more effective.
- A separate platform is required for resource planning, mobilisation and management for climate financing since nowadays climate change is thought to be a separate issue.
- Rajdhani Unnayan Kartripakkha (RAJUK) has an important role to play in climate change mitigation since it approves design of buildings in the municipal areas.

Closing Remarks by the Chair

The Chair picked up some points raised from the floor and made the following remarks:

- Regarding the imposition of carbon tax, the chair said that the CFF did not propose any specific rate for carbon tax rather just flagged the issue for the policy makers to be addressed in future.
- The updated CFF does not propose any separate mechanism for monitoring and evaluation rather it suggests mainstreaming climate issues in the existing system by embedding climate change dimension.
- Monitoring by the implementing agencies is essential for successful implementation of any project.

Finally, he said that the comments and feedback received from the participants will be taken into consideration while finalising the updated CFF.

Workshop Recommendations

1. The comments and feedback received from the participants should be incorporated in the updated CFF, where relevant, and
2. Once finalised, the CFF should be printed for distribution among the stakeholders and published in the website of the Finance Division for wider dissemination.

Attendees [not according to seniority]

1. Mr. Md. Ekhlasur Rahman, Additional Secretary, Finance Division
2. Mr. Ramandra Nath Biswas, Additional Secretary, Finance Division
3. Mr. Md. Habibur Rahman, Additional Secretary, Finance Division
4. Mr. Mohammed Iqbal Hossain, Deputy Comptroller and Auditor General (Senior), OCAG
5. Mr. Md. Zahurul Islam, Additional Director General (Finance), Bangladesh Railway, OCAG
6. Mr. Mohammad Zakir Hossain, Director General, Financial Management Academy (FIMA), OCAG
7. Mr. Sorooj Kanti Deb, Director General, Commercial Audit Directorate, OCAG
8. Mr. Md. Anisur Rahman, Director General, Foreign Aided Projects Audit Directorate, OCAG
9. Mr. Mohammad Emdad Ullah Miah, Joint Secretary, Local Government Division
10. Mr. Manzarul Mannan, Joint Secretary, Finance Division
11. Mr. Mohammed Yesin, Joint Secretary, Finance Division
12. Mr. Anwar Hossain Chowdhury, Joint Secretary, Road Transport and Highways Division
13. Mr. Khan Md. Ferdous Rahman, Director General, Works Audit Directorate, OCAG
14. Mr. Md. Golam Sarwar Bhuiyan, Director General, Defence Audit Directorate, OCAG
15. Mr. Md. Azizul Hoque, Director General, Civil Audit Directorate, OCGA
16. Mr. Md. Saifur Rahman, Deputy Comptroller and Auditor General (Procedure), OCAG

17. Dr. Md. Enamul Haque, Joint Secretary, Health Services Division
18. Mr. Md. Zakir Hossain Khandker, Director General, Post, Telecommunications, Science and Technology Audit Directorate, OCAG
19. Mr. Abul Kalam Azad, Director General, Local and Revenue Audit Directorate, OCAG
20. Mr. Abul Kalam, Director General, Mission Audit Directorate, OCAG
21. Ms. Nurun Nahar, Deputy Sectary, Rural Development and Cooperatives Division
22. Mr. Md. Salahuddin, Deputy Secretary, Ministry of Defence
23. Mr. Abdullah Al Arif, Deputy Secretary, Ministry of Disaster Management and Relief
24. Mr. Md. Nazrul Islam, Deputy Secretary, Finance Division
25. Ms. Farzana Ahmed, Deputy Secretary, Finance Division
26. Mr. Md. Helal Uddin, Deputy Secretary, Finance Division
27. Dr. Abdur Rahim, Deputy Secretary, Finance Division
28. Dr. Khurshid Alam, Deputy Secretary, Finance Division
29. Ms. Rownak Jahan, Deputy Secretary, Finance Division
30. Dr. Mohammad Abu Yusuf, Deputy Secretary, Finance Division
31. Ms. Nusrat Noman, Deputy Secretary, Economic Relations Division
32. Ms. Milia Sharmin, Deputy Secretary, Finance Division
33. Mr. Md. Showkat Rashed Chowdhury, Deputy Secretary, Ministry of Railways
34. Mr. Mohammad Iqbal Hossain, Assistant Engineer, Bangladesh Rural Electrification Board
35. Mr. Kamal Chandra Howlader, Accounts Officer, Department of Environment
36. Mr. Md. Fazlur Rahman, Senior Assistant Secretary, Ministry of Education
37. Mr. Md. Salah Uddin, Deputy General Manager, Bangladesh Bank
38. Mr. Md. Nazrul Islam, Senior Assistant Secretary, Technical and Madrasa Education Division
39. Ms. Shirin Akter, Administrative Officer, Finance Division
40. Mr. Ajit Kumar Rudra, Assistant Chief Conservator of Forests (General), Bangladesh Forest Department
41. Mr. Mizanur Rahman, Staff Reporter, Dhaka Tribune
42. Dr. Md. Mosharraf Hossain, Member, Insurance Development and Regulatory Authority
43. Mr. K.M. Mainul Islam, Assistant Accounts Officer, Ministry of Environment, Forest and Climate Change
44. Mr. Animesh Shome, Senior Assistant Chief, Ministry of Housing and Public Works
45. Mr. Md. Anwar Hossain, IT Consultant, Finance Division
46. Ms. Ferdaushi Alom Bipasha, Assistant Engineer, Bangladesh Power Development Board
47. Mr. Asif, Reporter, Bangladesh Betar
48. Mr. Harekrishna Adhikari, Assistant Secretary, Ministry of Fisheries and Livestock
49. Mr. Muhammad Abu Kawsar, Senior Assistant Chief, Ministry of Food
50. Mr. Md. Enayet Ali Khan, Consultant, Insurance Development and Regulatory Authority
51. Mst. Susmita Islam, Senior Assistant Chief, Economic Relations Division
52. Mr. S. S. Shahin, Senior Reporter, Bonik Barta
53. Mr. Md. Tajul Islam, Senior Assistant Secretary, Finance Division
54. Mr. Chinmoy Chakravorty, Photojournalist, Bangladesh Post
55. Mr. Md. Abdul Latif, Senior Assistant Chief, General Economics Division, Planning Commission
56. Mr. Md. Abu Bokor Siddiq, Administrative Officer, Ministry of Environment, Forest and Climate Change

57. Mr. Sheikh Moinul Islam Moin, Senior Assistant Chief, General Economics Division
58. Mr. Saiful Islam, Senior Assistant Secretary, Finance Division
59. Ms. Selina Shelly, Project Coordinator, Local Governance Initiative on Climate Change Project, UNDP
60. Mr. Md. Mokhlesur Rahman Sarker, Deputy Managing Director, Bangladesh Climate Change Trust
61. Mr. Muhammad Nuzmul Hoque, Senior Assistant Chief, Ministry of Science and Technology
62. Mr. Abu Md. Mohiuddin Quader, Joint Chief, Socio Economic Infrastructure Division, Planning Commission
63. Mr. Mohammad Abul Bashar, Administrative Officer, Finance Division
64. Mr. Md. Ziaul Amin, Chief Economist, Bangladesh Water Development Board
65. Mr. Md. Mahbubur Rahman, Programme Adviser, Sweden Embassy
66. Mr. Md. Minhajul Islam, Senior Assistant Chief, Finance Division
67. Mr. Nazmul Islam Bhuiyan, Senior Assistant Secretary, Ministry of Water Resources
68. Mr. Mehbub Morshed, Deputy Director, Bangladesh Power Development Board
69. Mr. Md. Mahmudur Rahman, Advisor, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
70. Mr. Fakrul Ahsan, Chief Technical Advisor, UNDP
71. Mr. Mahmud Hossain Opu, Photojournalist, Dhaka Tribune
72. Mr. Zakir Ali, Chief Reporter, NSBD
73. Mr. Shamoel Haque, Research Associate, BRAC University
74. Mr. Md. Obaibul Hoque, Deputy Chief, Ministry of Shipping
75. Mr. Ranjit Kumar Chakraborty, Project Manager, IBFCR Project, UNDP
76. Mr. Bikash Chandra Mitra, Audit Expert, IBFCR Project, UNDP
77. Mr. Mahedi Masuduzzaman, Fiscal Policy Expert, IBFCR Project, UNDP
78. Mr. Md. Abu Sumon, Climate Change Expert, IBFCR Project, UNDP
79. Ms. Bipasha Chakma, Communications Officer, IBFCR Project, UNDP
80. Mr. Kazi Obeydur Rahman, Project Associate, IBFCR Project, UNDP
81. Ms. Sohara Mehroze, Research Associate, IBFCR Project, UNDP
82. Mr. Md. Shohidul Alam, Project Assistant, IBFCR Project, UNDP
83. Ms. Nila Loreta Blake, Project Assistant, IBFCR Project, UNDP
84. Mr. Md. Abdul Quayyum, Communications Officer, UNDP
85. Mr. Abul Bashar, Issue-Based Project Manager, British Council
86. Prof. Dr. M. Shafiqur Rahman, Professor and Chairman, Department of Urban and Regional Planning, Jahangirnagar University
87. Mr. Md. Akter Hossain, Accounts Officer, Ministry of Environment, Forest and Climate Change
88. Mr. Zafar Ahmed, Senior Reporter, Bdnews24.com
89. Mr. Md Hasanuzzaman, Senior Assistant Chief, Energy and Mineral Resources Division
90. Ms. Firdaus Ara Hussain, Principal Advisor, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
91. Mr. Ismail Hossain, Staff Reporter, Financial Express
92. Mr. Tanjir Hossain, Lead, Resilience and Climate Justice, ActionAid Bangladesh
93. Mr. A.K.M. Lutfor Rahman, Senior Assistant Secretary, Implementation, Monitoring and Evaluation Division
94. Ms. Tasnim Zeben Bentea Sheikh, Senior Assistant Secretary, Ministry of Chattogram Hill Tracts Affairs

APPENDIX

2

LIST OF CLIMATE RELEVANT PROJECTS IN BDP 2100

Appendix 2: List of Climate Relevant Projects in BDP 2100

SL	Name of the Project	Estimated Cost	
		million Tk.	*million US$*
Hotspot: Coastal Zone			
1	West Gopalganj Integrated Water Management Project	2,803	35
2	Improved Drainage in the Bhabadha Area	1,599	20.53
3	Development of Water Management Infrastructure in Bhola Island	14,932	188.5
4	Char Development and Settlement Project- V	1,161	14.29
5	Program for Implementation of Rationalized Water Related Interventions in Gumti - Muhuri Basin	14,228	179
6	Program for Implementation of Rationalized Water Related Interventions in Gorai-Passur Basin	14,820	187
7	Rationalization of Polders in Baleswar - Tentulia Basin	1,61,002	2028.5
8	Program for Implementation of Rationalized Water Related Interventions in Baleswar-Tentulia Basin	9,680	123
9	Rationalization of Polders in Gumti - Muhuri Basin	65,428	825
10	Rehabilitation of Water Management Infrastructure in Bhola District	25,407	320
11	Study on Integrated Management of Drainage Congestion for Greater Noakhali	16	0.2
12	Study on Tidal River Management	1,250	16
13	Construction of Ganges Barrage and Ancillary Works	4,18,617	5275
Hotspot: Rivers and Estuaries			
14	Pre-Feasibility Study on Integrated River System Management and Protection of Accreted Land	3,854	49
15	Riverbank Improvement Program	1,44,915	1826
16	Integrated Jamuna-Padma Rivers Stabilization and Land Reclamation Project	3,18,780	4016
17	Development of Chandona-Barasia River Basin System	472	6.14
18	Enhancement of Agricultural Productivity towards Food Security in Char Lands	16,543	208
Hotspot: Urban Areas			
19	Drainage Improvement of Dhaka-Narayangonj-Demra Project (Phase-2)	5,803	73

SL	Name of the Project	Estimated Cost	
		million Tk.	*million US$*
20	Improvement of Drainage Congestion, Canal Dredging and Flood Control for Barishal City Corporation Area	4,672	59
21	Improvement of Drainage Network, Flood Control and Solid Waste management for Khulna City	73,241	923.19
22	Project for Improvement of Storm Water Drainage Activities in the City Corporation Area	11,695	147
23	Protection of River System around Dhaka City with their Ecological Restoration	14,929	188
Hotspot: Chattogram Hill Tracts			
24	Program for Implementation of Rationalized Water Related Interventions in Chattogram Coastal Plain Basin	831	10.25
25	Rationalisation of Polders in Chattogram Coastal Plain	43,226	545
Hotspot: Haor and Waterland			
26	Village Protection against Wave Action in Haor Area and Improved Water Management in Haor Basins	7,479	94
27	Program for Implementation of Rationalized Water Related Interventions in Upper Meghna Basin	5,880	74
28	Elevated Village Platforms for the Haor Areas	4,336	55
29	Management of Commercially Important Wetland Ecosystem	448	5.39
Hotspot: Cross Cutting			
30	Improvement of Urban Drainage and District and Upzila level municipalities of Bangladesh	1,73,406	2185
31	Integrated Agricultural Development in moderately Cyclone affected area	16,726	211
32	Development/Improvement of Multi-purpose Disaster Shelters and its Management Information System (MDS&MIS)	3,38,386	4264
33	Project for improvement of storm water drainage facilities in Pourashava (Phase I)	24,145	304
34	Project for improvement of water supply and sanitation facilities in char area	10,692	134
	Total Cost	**30,66,230**	**2,490.56**

APPENDIX

3

TAX INTERVENTIONS TO FACILITATE ADAPTATION

Appendix 3: Tax Interventions to Facilitate Adaptation

Items	Mode of supply	Applicable taxation instrument	Taxation strategy
Early warning equipment	Import, local production	Customs duty (CD), Advance Income Tax (AIT), Advance Trade VAT (ATV), VAT and Tax holiday	CD, AIT, ATV may be exempted for imports. VAT may be exempted for locally produced products at production and trade level. Tax holiday may be provided for local manufacturers.
Seed of salinity, storm surge, drought and flood resistant/ tolerant agricultural products	Import, local production	CD, AIT, ATV, VAT and Tax holiday	CD, AIT, ATV may be exempted for imports. VAT may be exempted for locally produced products. Tax holiday may be provided for local producers.
Cold storage, food storage in the salinity, storm surge, drought and flood prone areas	Operation	VAT and Income Tax	VAT may be exempted for locally produced products. Tax holiday may be provided for operators.
Salinity, storm surge, drought and flood tolerant housing materials, for example, salt resistant bricks, anti-salinity chemical	Import, local production	CD, AIT, ATV and Tax holiday	CD, AIT, ATV may be exempted for imports. VAT may be exempted for locally produced products. Tax holiday may be provided for local producers.
Cyclone and flood shelter	Local construction	Corporate Social Responsibility (CSR), VAT, Tax holiday	Private sector may be allowed to build shelters under CSR activities for which it will get tax benefit as per existing CSR provisions. VAT and tax of any kind may be waived at construction level for all activities related to it and service delivery by the shelter. Commercially run shelter may be provided tax holiday along with VAT and tax exemption.
Embankment and polder	Local construction	CSR, VAT	Private sector can be allowed to build embankment and polders for which it will get tax benefit as per existing CSR provisions. VAT and tax of any kind can be waived at construction level for all activities related to it and service delivery by the embankment or polder.

Items	Mode of supply	Applicable taxation instrument	Taxation strategy
Alternative livelihoods for climate change victims [for commercial productions only]	Local supply	VAT and Tax holiday	VAT may be exempted for locally produced supplies and products at production and trade level. Tax holiday may be provided for local producers.
Hydroponic cultivation	Local production	Tax holiday, VAT	VAT may be exempted for suppliers of inputs and for commercial production and supply of outputs. Tax holiday may be provided for commercial production.
Rainwater harvesting equipment/plant	Import, local production	CD, AIT, ATV, VAT and Tax holiday	CD, AIT, ATV may be exempted for imports of equipment and spare parts. VAT may be exempted for locally produced equipment and spare parts. Tax holiday may be provided for local manufacturers.
Desalinisation plant/ Desalinisation filter	Import, local production	CD, AIT, ATV, VAT and Tax holiday	CD, AIT, ATV may be exempted for imports of equipment and spare parts. VAT may be exempted for locally produced equipment and spare parts. Tax holiday may be provided for local manufacturers.
Surface water reservoir and supply	Local supply	VAT and Tax holiday	VAT may be exempted for suppliers. Tax holiday may be provided for suppliers.
Research on appropriate technology for adaptation	Local service	CSR, VAT	Private sector may be allowed to sponsor research under CSR program for which it will get tax benefit as per existing CSR provisions. VAT and tax of any kind may be waived at all levels of research and dissemination.
Commercial forest/ Community forest/ Social forestry	Local production	Income Tax, VAT and Tax holiday	VAT may be exempted for all products of commercial forest. Tax holiday may be provided for all products of commercial forest. The income from forest should be made tax exempted.

APPENDIX

4

TAX INTERVENTIONS TO FACILITATE MITIGATION

Appendix 4: Tax Interventions to Facilitate Mitigation

Items	Mode of supply	Applicable taxation instrument	Taxation strategy
Energy saving home appliances, office equipment with top star labels (for example five star) along with LED bulb	Import, local production	Customs duty (CD), Advance Income Tax (AIT), Advance Trade VAT (ATV), VAT and Tax Holiday	CD, AIT, ATV may be exempted for imports. VAT may be exempted for locally produced final products at production and trade level. Tax Holiday may be provided for local manufacturers of final products.
Improved cook stove (ICS)	Import, local production	CD, AIT, ATV, VAT and Tax Holiday	CD, AIT, ATV may be exempted for imports. VAT may be exempted for locally produced final products at production and trade level. Tax Holiday may be provided for local manufacturers of final products.
Automatic controls for energy efficiency. (For example: auto on-off for light, fan, AC etc)	Import, local production	CD, AIT, ATV VAT and Tax Holiday	CD, AIT, ATV may be exempted for imports. VAT may be exempted for locally produced final products at production and trade level. Tax Holiday may be provided for local manufacturers of final products.
Energy efficient brick kiln equivalent or more advanced technology than Hybrid Hoffmann kiln or Tunnel Kiln	Import, local production	Customs duty (CD), Advance Income Tax (AIT), Advance Trade VAT (ATV), VAT and Tax Holiday	CD, AIT, ATV may be exempted for imports of the manufacturing equipment. VAT may be exempted for locally produced final products and for critical parts responsible for energy efficiency at production and trade level. Tax Holiday may be provided for local manufacturers of final products and for critical parts responsible for energy efficiency. Tax Holiday may be continued for brick manufacturing unit using energy efficient brick kiln equivalent or more advanced technology than Hybrid Hoffmann kiln or Tunnel Kiln.

Items	Mode of supply	Applicable taxation instrument	Taxation strategy
Photovoltaic cell (H.S. Code: 8541.40.40)	Import, local production	CD, AIT, ATV, VAT and Tax Holiday	CD, AIT, ATV may be exempted for imports (as it is now). VAT may be exempted (as it is now) for locally produced final products. Tax Holiday may be provided for local manufacturers of final products.
Solar battery (H.S. Code: 85.07)	Import, local production	CD, AIT, ATV, VAT and Tax Holiday	CD, AIT, ATV may be exempted for imports. VAT may be exempted for locally produced solar battery (as it is now). Tax Holiday may be provided for local manufacturers of final products.
Solar irrigation pump-set when controls are inbuilt	Import, local production	Customs duty (CD), Advance Income Tax (AIT), Advance Trade VAT (ATV), VAT and Tax Holiday	CD, AIT, ATV may be exempted for imports. VAT may be exempted for locally produced final products and for critical parts for solar related activity. Tax Holiday may be provided for local manufacturers of final products and for critical parts for solar related activity.
Super critical technology installed in coal-based generator	Import	CD, AIT, ATV, VAT and Tax Holiday	CD, AIT, ATV may be exempted for imports. VAT may be exempted for power generation company at production and distribution level using super critical technology installed in coal-based generator. Tax Holiday may be provided for power generation company using super critical technology installed in coal-based generator.
Organic waste and biomass-based generator	Import, local production	CD, AIT, ATV, VAT and Tax Holiday	CD, AIT, ATV may be exempted for imports. Tax Holiday may be provided for power generation company using super critical technology installed in coal-based generator.

Items	Mode of supply	Applicable taxation instrument	Taxation strategy
Wind power plant, Geo-thermal power plant		CD, AIT, ATV, VAT and Tax Holiday	CD, AIT, ATV may be exempted for imports of plant equipment. VAT may be exempted for production of power in those plants. Tax Holiday may be provided to such plants.
Industrial machinery with energy efficient breakthrough technology having top star labels and endorsed by Department of Environment		CD, AIT, ATV, VAT exemption and Tax Holiday/ benefits	CD, AIT, AV may be exempted for imports. VAT may be exempted for locally manufactured machinery having top star labels for energy efficiency. Tax Holiday may be provided for local manufacturers of such machinery. Tax benefit may be provided to factories using such energy star labelled machinery.
Agricultural machinery with energy efficient breakthrough technology having top star labels and endorsed by Department of Agriculture and or Environment'		CD, AIT, ATV, VAT exemption and Tax Holiday/ benefits	CD, AIT, AV may be exempted for imports. VAT may be exempted for locally manufactured machinery having top star labels for energy efficiency. Tax Holiday may be provided for local manufacturers of such machinery. Tax benefit may be provided to firms using such energy star labelled machinery.
Energy efficient brick kiln having top star labels endorsed by Department of Environment to be climate friendly	Import, local production	CD, AIT, ATV, VAT and Tax Holiday, Surcharge	CD, AIT, ATV may be exempted for imports. VAT may be exempted for locally manufactured brick kilns having energy star labells. Tax Holiday may be provided for brick fields using such brick kilns. Surcharge is to be enforced to traditional brick kilns.

Items	Mode of supply	Applicable taxation instrument	Taxation strategy
Commercial forest/ Community forest/ Social forest	Local production	Income Tax, VAT and Tax Holiday	VAT may be exempted for all products of commercial forest. Tax Holiday may be provided for all products of commercial forest. The income from forest should be tax exempted.
Carbon emitters	Local production	Carbon tax	Tax may be imposed on gasoline, jet fuel and diesel, natural gas, electricity generated by burning coal.
Hybrid and electric motor vehicles (H.S. Code: 8703.40.56 & 8703.50.56) and charging stations		CD, AIT, ATV, Tax Holiday	CD, AIT, ATV may be exempted for imports of electric hybrid and electric vehicles and charging stations. VAT may be exempted for locally produced complete plant or parts of charging stations. Tax Holiday may be provided for the charging business for electric vehicles.
Motor vehicles with top energy efficiency labels (for example, Euro-6 cars)		Customs duty (CD), Advance Income Tax (AIT), Advance VAT (ATV)	CD, AIT, ATV may be exempted for imports of motor vehicles with top energy efficiency labels. Gradually lower tariffs may be imposed on cars of lower emission levels.
Waste Heat Recovery Boiler and Solar Preheated Boiler		Customs duty (CD), Advance Income Tax (AIT), Advance VAT (ATV)	CD, AIT, ATV may be exempted for imports of waste heat recovery boiler and solar preheated boiler. VAT may be exempted for production of power in those boilers.

APPENDIX

5

MINISTRIES/DIVISIONS FOR CLIMATE BUDGET REPORT

Appendix 5: Ministries/Divisions for Climate Budget Report

1.	Ministry of Environment, Forest and Climate Change
2.	Ministry of Water Resources
3.	Ministry of Agriculture
4.	Ministry of Fisheries and Livestock
5.	Ministry of Disaster Management and Relief
6.	Rural Development and Cooperatives Division
7.	Ministry of Housing and Public Works
8.	Ministry of Women and Children Affairs
9.	Energy and Mineral Resources Division
10.	Local Government Division
11.	Ministry of Chittagong Hill Tracts Affairs
12.	Ministry of Primary and Mass Education
13.	Ministry of Land
14.	Ministry of Industries
15.	Health Services Division
16.	Power Division
17.	Ministry of Food
18.	Secondary and Higher Education Division
19.	Ministry of Social Welfare
20.	Road Transport and Highways Division
21.	Ministry of Shipping
22.	Ministry of Defence
23.	Ministry of Textiles and Jute
24.	Ministry of Science and Technology
25.	Technical and Madrasa Education Division

APPENDIX

6

PIPELINE PROJECTS IN COUNTRY PROGRAMME FOR GREEN CLIMATE FUND

APPENDIX 6: PIPELINE PROJECTS IN COUNTRY PROGRAMME FOR GREEN CLIMATE FUND

(amount in million US$)

SL.	Pipeline Projects[27]	Organisation(s)	Grant	Co-Financing	Total
	Project Preparatory Pipeline – A[28]				
A1	Climate resilient coastal forestry in Bangladesh	IDCOL, BFD	60.00	20.00	80.00
A2	Resilient communities and ecosystems to cope with climate change induced disasters in Chittagong Hill Tracts	IDCOL, UNDP, MoCHTA, BFD	128.96	21.04	150.00
A3	Strengthening drought-resilience of plainland ethnic minority communities in Bangladesh	UNDP, HEKS/EPER, EDM	10.00	24.00	34.00
A4	Enhancing climate resilience of heritage sites in Bangladesh's coastal regions	IDCOL, UNDP, MoCA	40.62	9.38	50.00
A5	Development of vulnerability resilience in selected hilly municipal areas through early warning system, Geo-hazard intervention and awareness	PKSF, GSB, NGI, BMD	8.00	2.00	10.00
A6	Climate resilient livestock production for the climate-vulnerable regions of Bangladesh	PKSF	40.00	10.00	50.00
A7	Promoting climate resilient aquaculture for climate vulnerable poor people of Bangladesh	PKSF	40.00	10.00	50.00
A8	Climate resilient agriculture for crop diversification project (CRACDP)	PKSF, DAE	100.00	5.00	105.00
A9	Climate Resilient Agriculture for the Climate-Vulnerable Regions of Bangladesh	PKSF, USAID, IUCN, SNV	40.00	10.00	50.00
A10	Agriculture and livelihood adaptation to drought in north-west high Barind areas of Bangladesh	PKSF	40.00	10.00	50.00
A11	Building social-ecological resilience in Haor Basin through adaptive agriculture and NRM (R4HB- resilience for haor basin)	IUCN, IDCOL, CNRS, BARI, DAE	46.15	3.85	50.00
A12	Scaling up solar powered irrigation to ensure food security and enhance resilience in drought prone areas of Bangladesh	IDCOL, WB	56.00	56.00	112.00
A13	Phase II: Enhancing adaptive capacities of coastal communities, especially women, to cope with climate change induced salinity	UNDP, MoWCA, PKSF, LGED, LGI, NGOs	43.89	16.00	59.89
A14	Solar powered drinking water supply in climate change affected selected coastal areas of Bangladesh	GIZ, DPHE	8.00	2.00	10.00

[27] Economic Relations Division (2018) *Journey with Green Climate Fund*, Bangladesh's Country Programme for Green Climate Fund, Bangladesh NDA Secretariat (published in April 2018)

[28] Project ideas that are at a concept note stage but have the potential of being developed into fully-fledged GCF funding proposals

SL.	Pipeline Projects	Organisation(s)	Grant	Co-Financing	Total
A15	Mainstreaming Climate Change into National Planning, Financing, Budgeting and Accountability Mechanisms in Bangladesh	UNDP, FD, LGD, IMED, BBS, MoDMR, MoEFCC, IRD, BB, OCAG, NPS, IDCOL, PKSF	10.00	2.00	12.00
A16	Promoting private sector investment through large scale adoption of energy saving technologies and equipment for Garment sector of Bangladesh	SEBL, The City Bank Ltd. BRAC Bank Ltd. IDCOL Finance Ltd.	150.00	100.00	250.00
A17	Promoting private sector investment through large scale adoption of energy saving technologies and equipment for textile sector of Bangladesh	IDCOL	100.00	66.00	166.00
A18	Promoting education friendly solar light as green technology in education sector (off-grid areas in Bangladesh)	GIZ, BCCT	20.00	6.00	26.00
A19	Development of climate resilient drainage system in Barisal city corporation and its peripheral area	BWDB, BCC	44.25	14.75	59.00
A20	Development of climate resilient water infrastructure in Bhola island	WB, BWDB, DoE, NGO	200.00	50.00	250.00
A21	Creation of alternate livelihood for climate victims through Cooperative approaches in Haor areas of Bangladesh	DoC, PKSF	6.00	2.00	8.00
A22	Capacity development for climate resilient seed certification in Bangladesh	PKSF	6.63	0.87	7.50
A23	Productive Use of Renewable Energy (PURE)	IDCOL	114.00	109.00	223.00
A24	Promotion of Climate-Friendly Cooking: Bangladesh, Kenya, and Senegal	GIZ, DoE, BBF, BFD, LGD	96.40	16.50	112.90
A25	Community based Adaptation for Flood Prone Areas of Bangladesh	PKSF	40.00	10.00	50.00
A26	Resilient infrastructure to combat climate change impacts in flash flood prone Haor areas of Bangladesh	PKSF, PIP	45.00	5.00	50.00
A27	Increase Resilience to climate change in southwest coastal zones of Bangladesh through adaptive livelihoods, housing, and safe drinking water supply	PKSF	43.00	7.00	50.00
A28	Enhancing urban resilience programme	KfW, LGED	100.00	75.00	175.00
	Subtotal: Project Preparatory Pipeline - A		**1,636.90**	**663.39**	**2,300.29**

SL.	Pipeline Projects	Organisation(s)	Grant	Co-Financing	Total
	Project Preparatory Pipeline – B[29]				
B1	Piloting of CC Resilient Socio-economic Adaptation through Integrated Geo-resource management and intervention in Chalanbil Areas, Bangladesh	PKSF, GSB, BMD	17.00	10.00	27.00
B2	Community Based Bio-organic Fertilizer Production for Improvement of Soil health and Reduction of GHG emission due to Use of Chemical fertilizer in Rice Cultivation	IDCOL, BRRI	4.19	2.08	6.27
B3	Drought Impact Assessment and Adaptation in Water Resource and Irrigated Agriculture in Drought-Prone Barind Area, North-west Bangladesh	UNEP, DOE	10.00	5.00	15.00
B4	Providing safe drinking water supply to the coastal areas of Bangladesh using solar water purifier and solar desalination technology	PKSF, DPHE	31.50	13.50	45.00
B5	Soil Management and Food Security Through Climate-Smart Agriculture in Drought-Prone Barind Area, Northwest Bangladesh	UNEP, DOE	10.00	5.00	15.00
B6	Emission Reduction and improvement of kitchen environment for rural poor women through Improved cooking Stove program in Bangladesh	PKSF, CCDB	10.45	11.16	21.61
B7	Local Government Initiative on Climate change (LoGIC)	UNDP, LGD	100.00	100.00	200.00
B8	Greening the brick sector in Bangladesh for emission reduction and better natural resources management	FAO, DoE, BIFFL	25.00	15.00	40.00
B9	Building climate resilient agriculture in Bangladesh	IDCOL, FAO, CNRS, BRRI, IRRI, PKSF	37.85	4.15	42.00
B10	Developing dynamic model to simulate the impact of climate change on Jute and Allied Fibre (JAF) crops for introducing JAF crops in the existing cropping pattern of coastal saline and low laying Haor areas of Bangladesh	PKSF, BJRI	21.00	1.10	22.10
B11	Adaptation to climate change impacts through agricultural research	PKSF, BARI	95.88	8.28	104.16

[29] Some of these projects are complementary to other efforts proposed in the project preparatory pipeline A. Some concept notes and project ideas can also be further elaborated and developed until the revision of the CP or brought forward to seek funding from other international climate change related funding sources, e.g., Adaptation Fund or GEF

SL.	Pipeline Projects	Organisation(s)	Grant	Co-Financing	Total
B12	Improving the Resilience of Vulnerable Coastal Community of Bangladesh through Re-excavation/Maintenance of Ponds and Installation of rainwater harvesting system	PKSF, DPHE	29.75	12.75	42.50
B13	Building Resilience of coastal communities through Promotion of Climate Smart Crops for Saline Prone Areas of Bangladesh	IUCN, IDCOL, BINA, DAE, BADC	23.70	2.20	25.90
B14	Enhance Resilience of coastal community in Bangladesh through installation of Solar Reverse Osmosis Plants	PKSF, DPHE	30.63	13.50	44.13
B15	Dissemination of Improved Paddy Parboiling Systems to reduce GHG emission and localized air pollution	GIZ, DoE, BBF	18.00	5.50	23.50
B16	Building a Climate and Environment Sensitive generation Through Green Clubs in Schools	FAO, DoE	26.62	0.00	26.62
B17	Ecosystem based Adaptation in the Ecologically Critical Areas (ECAs) of Bangladesh	UNEP, DoE	50.00	10.00	60.00
B18	Establishment of Model Cities in Environment Management	UNEP, DoE	26.63	0.00	26.63
B19	Living with Nature through Coastal Protection in Bangladesh	UNEP, DoE, BWDB, BFD, LGED, NGOs	35.00	10.00	45.00
B20	Adaptation Initiative for Climate Vulnerable Flood Prone Area in Bangladesh	UNEP, DoE, BWDB	30.00	5.00	35.00
	Subtotal: Project Preparatory Pipeline - B		**633.20**	**234.22**	**867.42**
	Grand Total		**2,270.10**	**897.61**	**3,167.71**

APPENDIX

7

GREEN PRODUCTS UNDER REFINANCE SCHEME OF BANGLADESH BANK

Appendix 7: Green Products Under Refinance Scheme of Bangladesh Bank

Sector	Sub-sector	Commodity Type
A. Renewable energy	1. Solar energy	1) Solar home system 2) Solar micro/mini grid 3) Solar irrigation pumping system 4) Surface water treatment plant and supply through solar pump 5) Solar photovoltaic assembling plant 6) Solar photovoltaic power plant 7) Sola cooker assembly plant 8) Solar water heater assembly plant 9) Solar air heater and cooling system assembly plant 10) Solar powered cold storage
	2. Biogas	11) Installation of biogas plant in the existing livestock/ poultry farm 12) Integrated animal husbandry and installation of biogas plant 13) Installation of organic fertilizer plant using slurry 14) Medium-sized biogas plant 15) Biomass based large scale biogas plant 16) Poultry and dairy based large-scale biogas plant
	3. Wind energy	17) Wind energy driven power plant
	4. Hydropower	18) Hydropower plant
B. Energy efficient technology		19) Project for replacing energy inefficient appliances by energy efficient appliances 20) Auto-sensor power switch assembly plant 21) Energy efficient improved cook-stove assembly plant 22) Bulb production plant with LED technology 23) LED bulb/tube-light assembly plant 24) Replacement of traditional lime-furnace by improved furnace 25) Waste-heat recovery system
C. Alternative energy		26) Production of furnace oil through pyrolysis system

Sector	Sub-sector	Commodity Type
D. Waste management	1. Liquid waste management	27) Installation of biological effluent treatment plant (ETP) 28) Installation of combined biological and chemical ETP 29) Conversion of chemical ETP into combined biological and chemical ETP 30) Installation of chemical ETP 31) Central ETP 32) Wastewater recycling plant 33) Sewage treatment project
	2. Solid waste management	34) Methane recovery and power generation using municipal waste 35) Production of compost using municipal waste 36) Harmful waste management 37) Dregs management and processing
E. Recycling and producing recyclable products		38) PET bottle recycling plant 39) Plastic waste (PVC, PP, LDPE, HDPE, PS) processing plant 40) Used paper recycling plant for production of paper and paper-based utensils 41) Production of recyclable baggage (from natural products e.g. bamboo) 42) Recyclable non-woven polypropylene thread and baggage production plant 43) Solar battery recycling plant 44) Used lead-acid battery recycling plant
F. Environment friendly brick production		45) Compressed block brick 46) Foam concrete brick 47) Modern technology brick (HHK, vertical shaft brick kiln, zigzag brick kiln, improved zigzag brick kiln, tunnel kiln, conversion of fixed chimney into any of the above)
G. Green building		48) Green building or green industry established/to be established under the rating system developed or recognized by USGBC-LEED, BREEAM, CASBEE, EDGE, GRIHA or SREDA Bangladesh 49) Green featured buildings
H. Miscellaneous		50) Ensure work environment and security (firefighting system, disaster preparedness and mitigation, health safety system) of small, medium and large-scale factories 51) Commercial production of vermicompost 52) Energy efficient palm-oil production plant

APPENDIX

8

CLIMATE RELEVANCE CRITERIA

Appendix 8: Climate Relevance Criteria

Climate Relevance Criteria	Relevance (%)
Food security, social protection, and health	
Implementation of specific climate policy-strategies or food security, social protection and health related activities funded from the Climate Fund	100
Institutional Capacity for research towards climate resilient cultivars and their resilience	73
Development of climate resilient cropping systems and production technologies	69
Adaptation against drought, salinity, submergence and heat	66
Adaptation in the fisheries sector	62
Adaptation in Livestock Sector	48
Adaptation in Health Sector	40
Water and sanitation programme for climate vulnerable areas	46
Livelihood protection in ecologically fragile and climate vulnerable zones	52
Livelihood protection of vulnerable socio- economic groups (including women)	38
Comprehensive disaster management	
Implementation of specific climate policy-strategies or comprehensive disaster management related activities funded from the Climate Fund	100
Improvement of flood forecasting and early warning systems	61
Improvement of cyclone and storm-surge warning	68
Awareness raising and public education towards climate resilience	46
Risk management against loss of income and property	77
Infrastructure	
Implementation of specific climate policy-strategies or Infrastructure related activities funded from the Climate Fund	100
Repair and maintenance of existing flood embankments	68
Repair and maintenance of existing cyclone shelters	70

Climate Relevance Criteria	Relevance (%)
Repair and maintenance of existing coastal polders	80
Improvement of urban drainage	61
Adaptation against floods	70
Adaptation against future cyclones and storm-surges	72
Planning, design and construction of river training works	48
Planning, design and implementation of resuscitation of the network of rivers and khals through dredging and de-salutations work	68
Research and knowledge management	
Implementation of specific climate policy-strategies or research and knowledge management related activities funded from the Climate Fund	100
Establishment of a centre for research, knowledge management and training on climate change	70
Climate Change Modelling at National and sub-national levels	90
Preparatory studies for Adaptation against sea level rise and its impacts	84
Monitoring of Eco system and Bio- diversity changes and their impacts	40
Macroeconomic and sectoral economic impacts of climate change	83
Monitoring of Internal and External Migration and providing support of capacity building for rehabilitation	48
Monitoring of impact for management of Tourism and improvement of priority action plan	32
Mitigation and low-carbon development	
Implementation of specific climate policy-strategies or Mitigation and low-carbon development related activities funded from the Climate Fund	100
Improved energy efficiency	69
Gas Exploration and reservoir management	28
Development of coal mines and coal fired power station	12

Climate Relevance Criteria	Relevance (%)
Renewable energy development	81
Lower emission from agricultural land	60
Management of urban waste	46
Forestation and reforestation program	69
Rapid expansion of energy saving devices e.g. CFL	68
Energy and water efficiency in built environment	48
Improving in energy consumption pattern in transport sector and options for mitigation	28
Capacity building and institutional strengthening	
Implementation of specific climate policy-strategies or capacity building and institutional strengthening related activities funded from the Climate Fund	100
Revision of sector policies for climate resilience	68
Mainstreaming climate change in National, Sector and Spatial Development program	77
Strengthening human resource capacity	48
Strengthening gender consideration in climate change management	26
Strengthening institutional capacity for Climate Risk Management	66
Mainstreaming climate change in the media	30
Not Climate Relevant	
Not Climate Relevant	0

APPENDIX

9

CLIMATE PUBLIC FINANCE TRACKING METHODOLOGY

Appendix 9: Climate Public Finance Tracking Methodology

STEP 1

Linking BCCSAP Themes and Programmes with the Climate Relevance Criteria

First, defining and classifying climate expenditures. This includes developing guidance for identifying what is and what is not climate relevant, typically drawing on the national climate change policy. And also defining a typology for climate change expenditure, which may for example, be simply into two categories, adaptation and mitigation, or may be a more elaborate structure of climate change interventions as in BCCSAP 2009.

The Programmes identified under the BCCSAP Thematic Areas (44 Programmes under 6 Thematic Areas) is used as the Climate Relevance Criteria to be used for tracking climate public finance. The relevance criteria proposed in the Climate Fiscal Framework (CFF 2014) is also aligned with the BCCSAP thematic areas and programmes for harmonised climate finance reporting.

STEP 2

Assigning climate relevance weight against each of the Climate Relevance Criteria

Second, assessing and "weighting" the climate relevance of those expenditures are critical. Categorising fully targeted climate relevant activities are fairly easy, but the methodology is designed in such a way that a lower proportion of the allocation on less relevant activities is also captured along with the allocations on more highly relevant activities.

Identify key relevant interventions under each climate relevance criteria and rate each of those in terms of (a) Climate Sensitivity, and (b) Climate Change Relevance.[26] The Relevance Weight for key interventions (c) are then calculated by deducting the assigned weight for climate sensitivity from the weight for climate change dimension of an intervention.

For multiple interventions under a climate relevance criterion, the climate relevance weight for the interventions is calculated by subtracting the standard deviation of the relevance weights from the maximum relevance weight of the interventions. Formulas to calculate climate relevance weight are:

[26] The negative values/allocation, investments causing additional emission and maladaptation was not counted. This will be counted as the system evolves.

i) Identify the maximum relevance weight from the selected interventions under a climate relevance criteria:

MAX ($x_1, x_2, \ldots\ldots x_n$)

ii) Calculate the Standard Deviation of the relevance weight:

$$\sqrt{\frac{\sum(x-\bar{x})^2}{(n-1)}}$$

iii) Calculate the climate relevance weight of a 'Climate Relevance Criteria':

MAX($x_1, x_2, \ldots\ldots x_n$) - $\sqrt{\frac{\sum(x-\bar{x})^2}{(n-1)}}$

STEP 3

Relevance of Projects and Programmes

If a project or programme addresses only one relevance criteria, the climate relevant finance should be calculated as percentage (of climate relevance) of the annual project allocation for the project/ programme. But the projects/programmes are usually complex in nature and may have finances that match with more than one climate relevance criteria. The budget desk officers will be able to select up to 3 climate relevance criteria (including the 'non-climate finance' criteria, if deemed fit) against a project or programme based on the amount of budget allocation for each relevance area (descending order). The project/programme relevance is then calculated following the same formula of deducting sample standard deviation from the maximum relevance weight percentage, as in Step-2.

STEP 4

Estimating climate finance for multiple relevance criteria for projects/ programmes

From the overall project or programme relevance weight worked out in Step-3 should now be distributed among the multiple matching relevance criteria according to the amount of budget allocation for each relevance area. As the criteria are already ranked (desending order) in Step-3, the statistical formula to distribute the climate finance among the relevance criteria:

i) Weighted Reciprocal Rank for multiple relevance criteria

$$WRR_i = \frac{1}{R_i} / \sum_{i=1}^{n} 1/R_i$$

Climate Relevance Weight for a Combination of Relevance Criteria

Relevance	Rank	Reciprocal Rank	Individual Weight: 3 Relevance	Individual Weight: 2 Relevance	Individual Weight: 1 Relevance
Relevance-1	1	1.00	0.55	0.67	1
Relevance-2	2	0.50	0.27	0.33	-
Relevance-3	3	0.33	0.18	-	-

Therefore, for projects and programmes with three Relevance the percentages are 55 percent, 27 percent and 18 percent for Relevance-1, Relevance-2, and Relevance-3 respectively. For projects and programmes with two Relevance the percentages are 67 percent and 33 percent for Relevance-1 and Relevance-2 respectively. For the projects and programmes with one Relevance Criteria, 100 percent of the allocation and expenditure are climate relevant.

STEP 5

Establishing climate finance weight for 'Operating Budget' of the ministries and associated agencies

Tracking operating cost is warranted as they constitute costs (e.g. for 11-functions, 12-support activities, 13-special activities, and LG) that go beyond development allocation (e.g. projects and programmes). The 'Allocation of Business', project and programme portfolio, and contribution to climate change adaptation and mitigation were considered in this regard.

REFERENCES

1. Asian Development Bank (2014) *Bangladesh Could See Climate Change Losses Reach Over 9% of GDP*. Available at: https://www.adb.org/news/bangladesh-could-see-climate-change-losses-reach-over-9-gdp-report [Accessed: 03 September 2019].
2. Bangladesh Bank (2013) Policy Guidelines for Green Banking. In *GBCSRD Circular 04/2013*. Bangladesh Bank, Dhaka, p. 3. Available at: https://www.bb.org.bd/mediaroom/circulars/gbcrd/aug112013gbcrd04e.pdf [Accessed: 04 September 2019].
3. Bangladesh Financial Intelligence Unit (2015) *NGO/NPO Sector Assessment of Bangladesh*. Bangladesh Financial Intelligence Unit, Dhaka, p. 36. Available at: https://www.bb.org.bd/pub/research/sp_research_work/srw1505.pdf [Accessed: 04 September 2019].
4. Bangladesh Power Development Board (2018) *Annual Report 2017-18*. Bangladesh Power Development Board, Dhaka.
5. Brooking Institution (2018) *Blending Climate Finance for Low-carbon Infrastructure*. Available at: https://www.brookings.edu/wp-content/uploads/2018/06/Climate-Finance_Working-Paper.pdf [Accessed: 26 October 2019].
6. Cubasch U. & Meehl G. A. (2001) Projections of Future Climate Change. In *Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (Houghton, J.T., Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, and C.A. Johnson, eds). Cambridge University Press, Cambridge, UK and NY, USA, pp. 527–578.
7. Eckstein D., Hutfils M., & Winges M. (2019) *Global Climate Risk Index 2019*. Germanwatch e.V, Bonn.
8. Ernest & Young LLP, & Shakti Sustainable Energy Foundation (2018) Discussion Paper on Carbon Tax Structure for India. Ernest & Young LLP, Kolkata. Available at: https://shaktifoundation.in/report/discussion-paper-carbon-tax-structure-india-full-report/, pp. 17-18 [Accessed: 04 September 2019].
9. European Commission. *Benefits of GPP*. Available at: https://ec.europa.eu/environment/gpp/benefits_en.htm [Accessed: 04 September, 2019].
10. European Union (2016) *Buying Green!: A Handbook on Green Public Procurement, 3rd Edition.* European Commission, Luxembourg, p. 5. Available at: https://ec.europa.eu/environment/gpp/pdf/Buying-Green-Handbook-3rd-Edition.pdf [Accessed: 04 September 2019].
11. Finance Division (2014) *Bangladesh Climate Fiscal Framework*. Finance Division, Dhaka.
12. Finance Division (2018) *Climate Finance Tracking in Bangladesh: Approach and Methodology.* Finance Division, Dhaka.
13. Finance Division (2019) *Climate Finance for Sustainable Development: Budget Report.* Finance Division, Dhaka.
14. General Economics Division (2012) *Bangladesh Climate Public Expenditure and Institutional Review*. General Economics Division, Dhaka.
15. General Economics Division (2014) *Development Project Proforma/Proposal (DPP) Manual.* General Economics Division, Dhaka.
16. General Economics Division (2018) *Bangladesh Delta Plan 2100 (Abridged Version)*. General Economics Division, Dhaka.

17. General Economics Division (2018) *Bangladesh Delta Plan 2100, Volume 1: Strategy*. General Economics Division, Dhaka.

18. Greater London Authority (2009) *Adapting to Climate Change: The Role of Public Procurement*. Greater London Authority, London. Available at: http://climatelondon.org/wp-content/uploads/2012/10/Adapting-to-climate-change-the-role-of-public-procurement.pdf [Accessed: 04 September 2019].

19. Joshua P. Meltzer (2018) *Blending Climate Funds to Finance Low-carbon, Climate-resilient Infrastructure.* Brookings Institution, Washington, DC. Available at: https://www.brookings.edu/wp-content/uploads/2018/06/Climate-Finance_Working-Paper.pdf [Accessed: 26 October 2019].

20. Ministry of Environment, Forest and Climate Change (2009) *Bangladesh Climate Change Strategy and Action Plan 2009.* Ministry of Environment, Forest and Climate Change, Dhaka.

21. Ministry of Environment, Forest and Climate Change (2015) *Nationally Determined Contribution of Bangladesh*. Ministry of Environment, Forest and Climate Change, Dhaka.

22. Ministry of Environment, Forest and Climate Change (2017) *Bangladesh Country Investment Plan for Environment, Forestry and Climate Change (2016-2021.* Ministry of Environment, Forest and Climate Change, Dhaka.

23. Mustapha, Shaikra et al (2014) *Topic Guide: Blended Finance for Infrastructure and Low-Carbon Development*. Overseas Development Initiative (ODI). Available at: https://assets.publishing.service.gov.uk/media/57a089b6e5274a31e0000218/EoD_Topic_Guide_Long_January14_Blending_Finance.pdf [Accessed: 26 October 2019].

24. United Nations (1992) *United Nations Framework Convention on Climate Change.* United Nations. Geneva.

25. United Nations Environment Programme (2011) *Buying for a Better World: A Guide on Sustainable Procurement for the UN System*. United Nations Environment Programme. Available at: https://www.ungm.org/Areas/Public/Downloads/BFABW_Final_web.pdf [Accessed: 04 September 2019].

26. United Nations (2015) *Transforming Our World: The 2030 Agenda for Sustainable Development*. United Nations, Geneva.

27. World Bank (2010) *Economics of Adaptation to Climate Change - Bangladesh*. The World Bank Group, Washington DC.

28. UNDP (2011*) A Practical Guide to Social Audit as a Participatory Tool to Strengthen Democratic Governance, Transparency, and Accountability*. New York: UNDP. Available at: http://www.undp-aciac.org/publications/ac/books/practicalguide-socialaudit-e.pdf. [Accessed: 26 September 2019].

29. UNESCO (2007) *Social Audits for Strengthening Accountability: Building Blocks for Human Rights-Based Programming*. Bangkok: UNESCO Asia and Pacific Regional Bureau for Education. Available at: http://unesdoc.unesco.org/images/0015/001570/157021e.pdf. [Accessed: 01 October 2019].

GLOSSARY

Adaptation can be defined as the decision-making process and the set of actions undertaken to maintain the capacity to deal with future changes to a social-ecological system without undergoing significant changes in function, structural identity, or feedbacks of that system while maintaining the option to develop. Examples of adaptation measures include using scarce water resources more efficiently; adapting building codes to future climate conditions and extreme weather events; building flood defences and raising the levels of dykes; developing drought and salinity-tolerant crops; choosing tree species and forestry practices less vulnerable to storms and fires; and setting aside land corridors to help species migrate.

Adaptation Fund (AF) was established in 2001 to finance concrete adaptation projects and programmes in developing country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change. The Fund is financed with a share of proceeds from the clean development mechanism (CDM) project activities and other sources of funding. The share of proceeds amounts to 2 percent of certified emission reductions (CERs) issued for a CDM project activity.

Bangladesh Climate Change Strategy and Action Plan (BCCSAP) is a 10-year program (2009-2018) to develop the capacity and resilience of the country to meet the challenge of climate change. It was formulated in 2008 and subsequently revised in 2009 to include more areas of actions. The Action plan focused on the needs of the poor and vulnerable, including women and children. It is based on six pillars which are: 1) Food security, social protection and health; 2) Comprehensive disaster management; 3) Infrastructure; 4) Research and knowledge management; 5) Mitigation and low carbon development; and 6) Capacity building and institutional strengthening.

Bangladesh Climate Change Trust Fund (BCCTF) was created in 2009 by the government from its own resources to finance projects and programmes for implementation of BCCSAP. BCCTF is designated for projects which fit with the priority actions and programmes of BCCSAP. An independent trustee Board, chaired by the Minister for Environment, Forest and Climate Change, is entrusted with the responsibility of governance and management of the fund.

Climate can be defined as the average weather observed over a period of time. The Intergovernmental Panel on Climate Change (IPCC) defined climate as: "..the 'average weather', or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period ranging from months to thousands or millions of years. The classical period is 30 years, as defined by the World Meteorological Organization (WMO). These quantities are most often surface variables such as temperature, precipitation, and wind..".

Climate Change refers to a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. The UN Framework Convention on Climate Change (UNFCCC) defines climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods." Thus, climate change may be due to natural internal processes or external forces such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use.

Global Environment Facility (GEF) is a unique partnership of 18 agencies — including United Nations agencies, multilateral development banks, national entities and international NGOs — working with 183 countries to address the world's most challenging environmental issues. It serves as a financial mechanism

for five major international conventions including UNFCCC. The World Bank serves as the trustee and is accountable to the GEF Council for the performance of its fiduciary responsibilities.

Conference of Parties (COP) is the highest decision-making body of the UNFCCC. All States that are parties to the convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts. COP also takes decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements.

Green Climate Fund (GCF) is a unique global initiative to respond to climate change by investing in low-emission and climate-resilient development. GCF was established by 194 governments to limit or reduce greenhouse gas emissions in developing countries, and to help vulnerable societies adapt to the impacts of climate change. It sets its mission to advance the goal of keeping the temperature increase of earth below 2 degrees celsius by the and of this century.

Kyoto Protocol is an international agreement linked to the UNFCCC, which commits its parties by setting internationally binding emission reduction targets. The protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities" as they are the major emitters of greenhouse gases. It was adopted in Kyoto, Japan on 11 December 1997 and it came into force on 16 February 2005.

Mitigation refers to the efforts of decreasing the amount of emissions released into the atmosphere and reducing the current concentration of carbon dioxide (CO_2) by enhancing sinks (e.g., increasing the area of forests). As there is a direct relation between global average temperatures and the concentration of greenhouse gases in the atmosphere, the key for the solution to the climate change problem rests on mitigation. Mitigation measures are translated in, for example, an increased use of renewable energy, the application of new technologies such as electric cars, or changes in practices or behaviours, such as driving less or changing one's diet.

National Adaptation Plan (NAP) is a continuous, progressive and iterative process undertaken by developing country Parties to the UNFCCC. It enables Parties in identifying medium and long-term adaptation needs and developing and implementing strategies and programmes to address those needs. NAP follows a country-driven, gender-sensitive, participatory and fully transparent approach. Bangladesh has already initiated the NAP process with funding support from the GCF.

National Designated Authority (NDA) is a government-designated institution or agency in a country with the role of facilitating interface and function as the main point of communication between the country and the GCF. The Economic Relations Division of Ministry of Finance is the NDA for Bangladesh. The role of NDA is to recommend funding proposals for projects and programmes to the GCF Board, which are developed in the context of national climate strategies and plans. NDA's role, in this regard, is to ensure that proposals are prepared through a broad-based multi-stakeholder consultation process.

Nationally Determined Contribution (NDC) is a commitment to combat climate change, especially for reduction of greenhouse gas emission. In its NDC, Bangladesh committed to reduce GHG emissions in the power, industry and transport sectors by 5 percent below 'business-as-usual' GHG emissions by 2030 using domestic resources, or by 15 percent below 'business-as-usual' GHG emissions by 2030 if sufficient and appropriate support is received from developed countries. Bangladesh has prepared implementation roadmap for the NDC to manage growing emissions without compromising the required development and

to allow Bangladesh to play its role in global efforts to limit temperature rise to two degrees or preferably 1.5 degrees above pre-industrial levels.

The Sustainable Development Goals (SDGs) comprise of 17 global Goals with 169 targets were adopted in 2015 at 70th UN Summit to ensure peace, prosperity and sustainable development of the people across the globe. Officially came into force on 1st January 2016, the SDGs are to be achieved by 2030.

United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty adopted on 9 May 1992 and entered into force on 21 March 1994. The aim of the treaty is to stabilise GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Weather describes the conditions of the atmosphere at a certain place and time with reference to temperature, pressure, humidity, wind, and other key parameters (meteorological elements); the presence of clouds, precipitation; and the occurrence of special phenomena, such as thunderstorms, dust storms, tornados and others.

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