RAMP
UNIVERSITY
NETWORK

Evaluating the effectiveness of integration of climate budgeting and allocation: A Case of Bangladesh

Zaima Ahmed
Mizan Khan
Meherun Ahmed
Taslim Uddin
Ekhtekharul Islam

Abstract

Bangladesh has always been vulnerable to climate change risk. Over the years Bangladesh has experienced the impacts of climate change, such as rising sea levels, drastic weather change, and the related socioeconomic effects. To mitigate risks and to adapt to climate change, the government of Bangladesh has taken several initiatives to accumulate and allocate funds. Bangladesh has adopted climate budgeting to bring a comprehensive approach in mitigating climate change impact, optimise resource allocation and identify areas crucial for climate relevant interventions and improvements. This study reviews various components of Bangladesh's climate budget, its current state, and evaluates the effectiveness of this budget in mitigating climate change. The study examines the design, implementation and impact of climate budgeting by assessing available metrics, such as GHG emission reduction in relevant sectors, actual utilisation of the allocated budget, transparency, and offers actionable recommendations. The study highlights the need for proper utilisation of the actual budget, the need for incorporating more areas beyond the six thematic themes, the need for continuous monitoring, and integration into relevant policy.

Keywords: Climate change; climate budgeting; public finance; adaptation and mitigation; Bangladesh.

JEL classification: Q54, Q56, Q58 O13, H72

Working Paper Number: 004

October 2025

About the Resilience Adaptation Mainstreaming Program (RAMP) and the RAMP University Network

The Resilience and Adaptation Mainstreaming Program (RAMP) builds capacity in ministries of finance and other relevant public institutions in climate-vulnerable countries to embed climate adaptation into their core fiscal, budgetary and macro-economic functions, enabling governments to manage climate risks, design effective policy responses to build economy-wide resilience, and align adaptation funding with development priorities. RAMP is a strategic partner of the Coalition of Finance Ministers for Climate Action and works in close partnership with international financial institutions, regional development banks, and other stakeholders.

At the heart of RAMP's approach to capacity-building is its University Network for Strengthening Macrofinancial Resilience to Climate and Environmental Change ('the RAMP University Network'). Launched in 2022, the RAMP University Network consists of leading universities in vulnerable countries that seek to develop and deliver high-quality multi-disciplinary teaching and research on adaptation economics and climate risk management, train public officials, and serve as centres of expertise that ministries of finance and other public institutions can rely on. This approach ensures that skills and knowledge are embedded locally, strengthening partner countries' ability to integrate climate risks into economic decision-making.

Co-founded by the Centre for Sustainable Finance (CSF) at SOAS University of London and the World Resources Institute, RAMP is currently managed by the CSF, which also acts as Secretariat for the RAMP University Network. For more information visit: https://www.soas.ac.uk/university-network

The RAMP University Network Working Paper Series features research in progress published to encourage further debate and discussion in the advancement of economic climate change research. Papers can be downloaded free of charge at: The University Network | SOAS.

About the authors

Zaima Ahmed is a Senior Lecturer at the Independent University, Bangladesh, Department of Finance.

Professor Mizan R Khan is Deputy Director of the International Centre for Climate Change & Development.

Professor Meherun Ahmed is Dean and Professor of School of Business and Entrepreneurship, Independent University, Bangladesh.

Dr Md.Taslim Uddin is Assistant Professor at the Independent University, Bangladesh, Department of Finance.

Md.Ekhtekharul Islam is a Senior Lecturer at the Independent University, Bangladesh, Department of Environmental Science & Management.

RAMP
UNIVERSITY
NETWORK

Acknowledgements

This research was supported by a grant from the Resilience and Adaptation Mainstreaming Program (RAMP), which in turn received financial support from the U.S. Department of State. The views expressed in this working paper are solely those of the author(s) and so cannot be taken to represent those of RAMP or any of its affiliates.

Suggested citation

Ahmed, Z., Khan, M., Ahmed, M., Uddin, T., and Islam, E., (2025), Evaluating the effectiveness of integration of climate budgeting. RAMP University Network Working Paper No. 00 London: RAMP University Network.

RAMP
UNIVERSITY
NETWORK

Table of Contents

1 Introduction

The Paris Agreement 2015 introduced a new paradigm that sought to depart from the traditional development pathways and move toward low-carbon climate-resilient development. The agreement aims to curb average global warming below 2 °C (Roelfsema et al. 2020). The success of the agreement requires countries to prepare plans for achieving these objectives successfully at the national level through Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs). International support for achieving the Paris targets has been limited, though the industrial countries have assumed obligatory responsibilities under the climate regime to provide support. Mobilisation of domestic resources by the national government must play a crucial role. More specifically, public expenditure planning and national budgets have to play a key role in achieving these targets.

Bangladesh, as one of the most vulnerable countries in terms of exposure to various natural disasters, has taken pioneering steps to accommodate climate relevant budgeting into their national budget (O'Donnell et al. 2013). Bangladesh has a long history of substantial expertise in fighting climate change. Even before the establishment of a climate budget, Bangladesh had formed its own climate fund in 2010 called the Climate Change Trust Fund. The government of Bangladesh prioritised climate responsive budgets as a critical tool in policy making to address various significant threats that climate change poses to the socio-economic development and environmental stability of the country.

Climate budgeting is a valuable tool for facilitating various environmental goals. There has been an increase in the number of countries formally defining green budgeting and linking them to national climate and environmental strategies (OECD, 2024). However, adapting existing budget processes to consider the environment requires effort, education and the readiness to move away from traditional approaches

Effective management and allocation of funds are essential. Governance of funds and allocation involves the capacity to efficiently manage and distribute climate funds with decision-making processes and play a critical role in keeping donor confidence intact (Tippman et al., 2013; Vij et al., 2017). Maintaining and engaging key stakeholders throughout the process of decision-making is crucial as well (Fankhauser and Burton, 2016).

The Bangladesh Climate Budget aims to enhance resilience, minimise vulnerability and support the transition of the economy into a low carbon economy. Bangladesh is the recipient of various funding sources for fighting climate change impacts. The budgetary system puts into effect the sources of finance and allocation and utilisation in an orderly manner and integrates climate action into development planning.

This study seeks to contribute to the specialised literature to systematically integrate climate considerations into budget processes and, therefore, contribute to making progress in the efforts to achieve efficient and effective public expenditure aimed at sustainable development objectives, in compliance with the Paris Agreement. Furthermore, the study seeks to identify the monitoring process of the Bangladesh Public Financial Management for Climate, and identify gaps, best practices and/or factors within budget processes which both allow and hinder the inclusion of climate change components.

The research reviews various components of Bangladesh's climate budget and evaluates the effectiveness of the budget in mitigating climate change, the design, implementation and impact of the climate budget by assessing available metrics. It looks at GHG emissions reduction in relevant sectors, actual utilisation of the allocated budget and transparency, and offers actionable recommendations.

Section 2 lays out the current state of climate change and climate budgeting in Bangladesh. Section 3 follows by considering the various policies and commitments Bangladesh has established to fight climate change. Section 4 discusses the methodology. Section 5 discusses the climate tracking methodology of Bangladesh. Section 6 provides a descriptive analysis of budget-relevant data, followed by a discussion and recommendations comparing other countries' relevant experiences in the context of allocating climate budgets. Lastly, Section 7 concludes.

2 Current State of Climate Change and Climate Budget

The academic literature on climate finance has advocated prioritising climate change in the budgetary process. The main idea of a conventional budget process is to allocate scarce resources to optimally attain policy-relevant goals. This is addressed in a climate sense in that climate change is itself a policy goal, as it is also essential for broader economic goals.

Incorporating climate change therefore implies rendering mainstreaming tools and approaches instead of treating it as an independent problem. It has the potential to deliver positive economic returns and boost climate outcomes. Hence, to secure the development benefits of large-scale funding programs for the climate response agenda, it is important to undertake a public expenditure analysis. Climate-related expenditure is categorised as mitigation and adaptation for curbing GHG emissions. (CABRI, 2021). According to economic modelling by Forni et al. (2018), expenditure taken for preventive measures on adaptation increases the GDP growth rate rather than taking no action or just waiting.

In many circumstances, it is observed that the Ministry of Environment usually has an upper hand in climate change-related policies. However, the Ministry of Finance is more responsible for climate-related fund allocations (Miller, 2012). Bird et al. (2013) identified four principles that foster the effective development and implementation of policy around the proactive mode of climate change finance at the national level. First, ease of implementation, second, coherence, transparency, and third legitimacy.

In addition to the effective delivery of climate finance, it is also imperative to allocate, mobilise, and monitor the process of climate finance disbursement. The early common modality of measuring effectiveness was based on the outcome and assessment of the capacity of national institutions (Ford et al. 2013). Sherifdeen et al. (2020) discuss the importance of monitoring and evaluating output against input, especially with the growing pledge of international donor agencies.

Several methodologies and tools are available to measure the effectiveness of public administration and public expenditure management in developing countries. There are high levels of summary indices such

as World Governance Indicators as well as specific diagnostic tools, such as the Public Expenditure and Financial Accountability (PEFA) framework (CBGA, 2022). For example, Odisha, in their climate budget for 2020-21, adopted and extended their State Action Plan Financing Framework (SAPFIN). The framework measures the share of programmes relevant to climate change and calculates specific benefits which improve climate resilience as a percentage of total spending. In addition, vulnerability is measured in the absence of any additional intervention.

In Ethiopia, the Ministry of Finance has developed a consolidated budget tagging system, which is critical to attract external finance and track climate strategy implementation. It will count expenditures as climate-specific spending as they finance activities implementing federal climate change strategies or activities that count as climate adaptation and mitigation according to the definitions used in the OECD DAC Rio Markers for Climate. Furthermore, flood and drought risks have been incorporated into Ethiopia's new fiscal risk model and fiscal risk statements starting from FY 2023 budget (World, Bank 2024).

2.1 Climate Finance Scenario of Bangladesh

Bangladesh has been vulnerable to climate change impacts such as tropical cyclones, storm surges, and floods due to its geographical location, large river deltas, and low-lying coastal area. Over the years it has experienced about 185 climate events with rising frequency (Tominaga & Ponniah, 2023). Bangladesh has made dramatic strides in reducing the deaths and economic impact of climate-related weather events. Public financial management has played a role in these achievements, offering important insights for other countries.

Bangladesh, being highly susceptible to the impacts of climate change, requiring financial assistance to address and adapt to these effects. Notably, Bangladesh has received the largest funding from the Green Climate Fund (GCF). In the budget for the fiscal year 2023-24, the Ministry of Environment, Forests, and Climate Change has been allocated a slightly higher budget compared to the previous year. Additionally, climate-related initiatives across 25 ministries and divisions account for 54.09% of their combined budgets, reflecting the importance placed on addressing climate change.

To address climate action, Bangladesh requires a minimum of US$12.5 billion, which is roughly 3 percent of its GDP in the medium term. The financing gap can be partially filled by allocating additional funds through budget prioritisation, implementing carbon taxation, securing external financing, and encouraging private investment. It is crucial to tackle immediate and pressing challenges related to climate change and development (World Bank, 2022)

The government has recognised the significance of addressing climate change and has accorded importance to this issue in the proposed allocations for other ministries. The government of Bangladesh has also given importance to dealing with the impact of climate change to ensure long-term sustainable development.

Of the total allocation for the 25 climate-relevant ministries and divisions, 8.99% is specifically set for climate-relevant expenditures. The total climate change-relevant budget for these 25 ministries and

divisions in FY24 has decreased by Tk1.67 billion. However, compared to the revised climate budget of FY2022-23, the allocation in FY2023-24 is TK56.43 billion more. Meanwhile, the climate-relevant allocation for the current budget increased to 7.04% in FY2023-24 from 6.88% in FY2019-20. In the same period, the development budget allocation for climate change increased to 10.84% from 9.83%. (Ministry of Finance, 2023)

In numerical terms, the climate-relevant allocation increased from Tk25,650.28 crore (USD 256.5 billion) to Tk 370.05 billion over the five years from FY2019-20 to FY2023-24, which accounted for 0.74% of the GDP in FY2023-24. The new climate budget has redirected its new focus area for future investments in a wide range of adaptation and mitigation measures which includes climate-smart agriculture, gender-inclusive climate action, and capacity building for future generations.

2.2 Bangladesh's Budget

Bangladesh's budget is based on a realistic macroeconomic framework. The estimates are based on reasonable revenue projections, what could be the main sources of financing for respective elements, what are the global factors/developments that may impact its budget size, and what are the possible investments including the ratio of public and private investments, possible drivers of growth and inflation in the coming financial year.

Figure 1: Stages of Budget
Source: Ministry of Finance (MoF)

The Bangladesh National Budget is prepared by the Finance Division under the Ministry of Finance in consultation with relevant stakeholders and then placed before the Parliament for approval. Once the budget is approved by the Parliament in June each year, the MDIs get their budget on the first day of July through the iBAS++ (Integrated Budget and Accounting System) system, and the MDIs start implementing the budget from July in each FY.

The Finance division prepares the Medium-Term Macroeconomic Framework (MTMF) to forecast possible resources for the funding expenditure budget, to propose the amount of total government expenditure, ADP, external funding, export and import targets, and more. The Coordination Council formed under the Bangladesh Bank Order 1972 headed by the finance minister approves the MTMF (Medium Term Macro-Economic Framework) and finalises the total resources for the upcoming FY budget. The total resource ceiling (approved by the Coordination Council) is then divided among 62 MDIs (Ministries/Divisions and Institutions) and communicated to them as a preliminary indicative resource ceiling through the Budget Circular.

Budget implementation is the responsibility of the line ministries, divisions, and spending institutions. The MDIs spend the budget within regulatory controls set by the Finance Division (IMF, 1999) in delivering services and implementing development projects. The budget information, revised budget, and actual spending reveal that in Bangladesh, actual spending is less than the budgeted amount. In other words, the MDIs could not implement their budgets fully.

As the iBAS++ system is used by all the MDIs for the national budget, and their system is centrally linked with the Finance Division server, FD obtains information on the budget and actual expenditure of 62 MDIs through its iBAS++ system. The accounting for budget execution transactions is maintained/prepared by the Chief Accounts and Finance Officer (CAFO) in the spending ministry/division.

2.3 Climate Budget

With the surge of climate finance flows from various sources, it has become important to integrate climate public finance tracking. This is one of the most important financial planning and management mechanisms to comprehend how a country's resource commitment has been directed towards climate change. Budgetary analysis plays a crucial role in mitigating issues by simplifying problems and facilitating the evaluation of mitigation options. To develop an effective climate action plan, it is recommended to establish a comprehensive climate accounting system that identifies, explains, and measures key metrics. Proposed mitigation solutions should be assessed based on their impact on budgets, financial desirability, and technical feasibility. To achieve this, a central climate data agency should be established to define, collect, organise, distribute data, and conduct climate scoring (Shiman, 2023). Bangladesh carried out a CPEIR in 2012 and formulated a framework to make climate budgeting more congruent with the need.

There have been two main technical methodologies that have been used to weigh relevance and assess the tracking method – the objective-based approach and the benefits-based approach. The first approach is simpler compared to the second, which is more time-consuming but also more rigorous. Taking lessons from all over the world, Bangladesh has adopted a more hybrid approach called the 'Objective-Based Cost Component Approach'. This approach integrates both the classification of climate-relevant projects and programmes along with scientific bases to weigh the allocation made for those projects.

In Bangladesh, the Ministry of Finance presents both a comprehensive annual Climate Finance Report and a simplified annual Citizens' Climate Budget. Bangladesh only produces budget execution reports on climate projects and programmes. The Climate Budget Report provides information on the allocation, revised allocations, and actual expenditure overall by the ministry, programme, and thematic areas

(overall and by the ministry). Bangladesh has systematised climate performance audits for tagged projects. The Office of the Comptroller and Auditor General has adopted the guidelines of the International Organisation of Supreme Audit Institutions (INTOSAI) to country-specific requirements and to date has audited two climate-tagged projects.

Bangladesh has undertaken two performance audits for climate-tagged projects and will introduce climate performance audits. However, more systematic effort needs to go into using the data generated from climate budget tagging to inform policy, planning, and budgeting.

The climate budget report is based on climate data and information in the budgets of the relevant Ministries/Divisions to inform parliamentarians and other stakeholders of the patterns of resource allocation that address the adverse fallouts of climate change. The Citizen's Climate Budget Report is an annual publication presented in simple language and published for a wider audience using infographics. The government invites CSOs to participate in pre-budget consultations (Ministry of Finance, 2023).

The first climate budget report titled "Climate Protection and Development: Budget Report 2017-18" was published in 2017 which included six ministries and divisions (Ministry of Primary and Mass Education, Local Government Division, Ministry of Agriculture, Ministry of Environment and Forest, Ministry of Water Resources, and Ministry of Disaster Management and Relief) that were considered to prepare the climate budget. A second report followed called "Climate Financing for Sustainable Development: Budget Report 2018-19. This published document reflects climate expenditure of twenty ministries with projects and programmes of climate relevance (Khatun et al. 2023).

3 Climate Policy and Commitments

Reducing greenhouse gas emissions (GHG) and promoting renewable energy (RE) generation are effective measures to combat climate change and its impact. Bangladesh has implemented various policies over the years to address the alarming increase in GHG emissions, driven by economic growth, energy security, and local environmental concerns. However, there is limited knowledge about the impact of these existing measures and policies on curbing GHG emissions, specifically in the agricultural and energy sectors contributing about 44% and 39% (Chowdhury et al. 2021).

Bangladesh demonstrates a strong commitment to addressing climate change and environmental concerns through various national plans and policies. These include the National Adaptation Programme of Action 2005 (updated 2009), Bangladesh Climate Change Strategy and Action Plan (BCCSAP, 2009), Bangladesh Country Investment Plan for Environment, Forestry and Climate Change 2016–2021 (2017), Bangladesh Delta Plan (BDP) 2100 (2018), Mujib Climate Prosperity Plan Decade 2030 (2021), and National Adaptation Plan of Bangladesh 2023–2050 (NAP, 2022). The country follows a 5-year planning system, currently implementing its 8th Five-Year Plan (July 2020–June 2025), which incorporates the long-term climate strategies of the BDP 2100 (NAP, 2022).

Bangladesh Climate Change Strategy and Action Plan (BCCSAP) - To assess the country's own need to incorporate climate change into the national and sectoral budget Bangladesh’s Climate Strategy and

Action Plan was developed (BCCSAP, 2008). The idea was to recognise the strategy and action plan for local climate change and not specifically comply with any global agency, such as the United Nations Framework Convention on Climate Change (UNFCCC), but to meet the country's own needs. BCCSAP provided a gateway for the last decade, as a guidance to spend money from the Bangladesh Climate Change Trust Fund (BCCTF) and other funding sources, including the development partners. BCCSAP has been broken into six specific areas. The following figure shows the BCCSAP thematic areas.

Figure 2. BCCSAP thematic areas.
Source: Ministry of Finance (MoF)

Bangladesh Climate Change Trust Fund (BCCTF) **-** Bangladesh established BCCTF in 2010 with its own funding. The BCCTF has undertaken about 800 projects so far with investment of around US$480 million to implement strategic actions. BCCSAP mainly focuses on adaptation, mitigation, and climate change research. According to the Climate Budget Report (2023-2024), the total climate-relevant budget allocation of the 25 ministries/divisions accounts for 54.09 percent of the total budget. Of the total budget of 25 climate relevant ministries/divisions, 8.99 percent is specifically for climate-relevant expenditures. The total climate change-relevant budget for these 25 ministries/ divisions is about USD 3.34 billion.

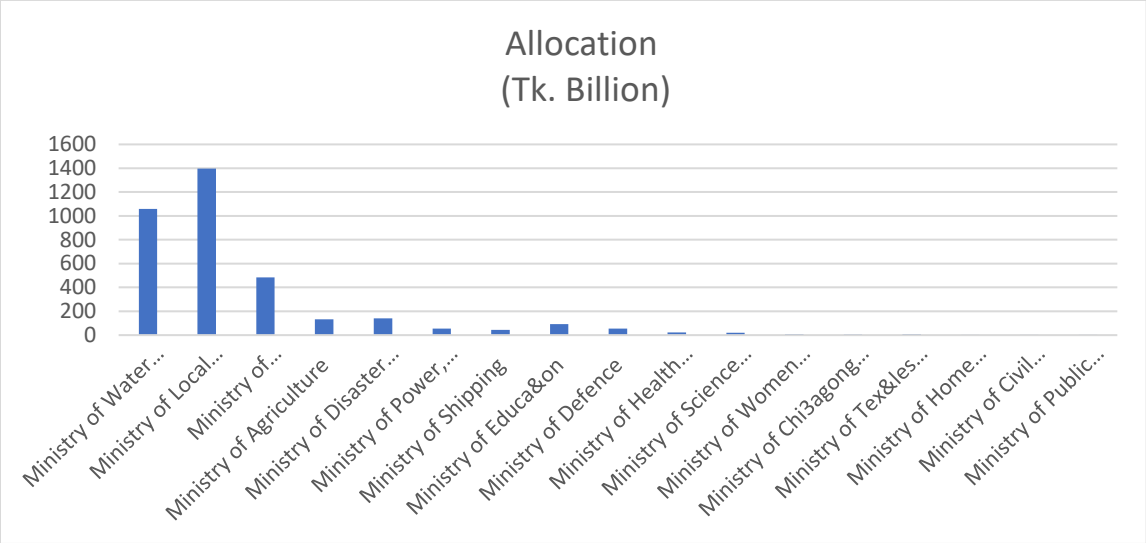


Figure 3: Allocation of budget 2022-2023 Ministry Wise

The Government of Bangladesh established the Bangladesh Climate Change Trust Fund (BCCTF) to address the insufficient climate financing received from bilateral and multilateral sources. To provide a legal basis for the provision of funds, the Climate Change Trust Act, 2010 (BCCTA) was enacted. The objective of establishing BCCTF is to mobilise resources through project implementation within the thematic areas and programmes of the Bangladesh Climate Change Strategy and Action Plan, 2009 (BCCSAP) aiming to mitigate the impacts of climate change.

The Bangladesh Delta Plan 2100 (BDP 2100) - The government of Bangladesh formulated the Bangladesh Delta Plan 2100 (2018) to face the challenges of development due to climate change impact. The aim of BDP 2100 is to eradicate extreme poverty, and address the challenges of climate, water, and land sustainability by coordinating other short- and medium-term plans. Out of 80 projects, the Bangladesh Delta Plan 2100 identified 34 projects as climate relevant.

For FY 24-25, the Bangladesh Delta Plan 2100 has allocated a limited amount of overall investment in drought-prone areas. Although the required amount is about TK 286.416 billion up to the year 2040, the annual fund allocation stands at TK 16.848 billion. The NAP (2023-2050) has allocated funds worth around TK 1644.358 billion for these areas (Financial Express, 2024).

Climate Public Expenditure and Institutional Review (CPEIR) - In 2012, Bangladesh conducted a Climate Public Expenditure and Institutional Review (CPEIR) to assess the policy, institutional and financial management of climate change activities and to integrate climate change considerations into Bangladesh's fiscal and institutional framework (GED,2012). In pursuit of integrating climate considerations at the policy and institutional level, led to the adoption of the Climate Fiscal Framework (CFF) in 2014. The aim of CFF was to outline tools and approaches and embed climate action components within the country's public financial management systems. In 2020, the CFF was updated, broadening the scope of the framework with the inclusion of the role of private sector, NGOs and CSOs in climate finance, and underlining additional policies on lending and insurance.

Climate Fiscal Framework (CFF 2014) - Bangladesh began its journey with a climate finance governance agenda in 2014 with the adoption of the Climate Fiscal Framework (CFF). Since the adoption of the CFF in 2014, there has been significant changes to the climate finance landscape and climate policy architecture both nationally and globally, which then necessitated an update to the framework. The CFF provides principles and tools for climate fiscal policymaking that help identify the demand and supply of climate funds. This ensures that climate fiscal policies are transparent and sustainable in the long term. Combating adverse climate change effects in Bangladesh requires a framework for tracking climate-related expenditures while estimating potential costs of long-term finance. In 2020, the Climate Fiscal Framework was updated to incorporate a more extensive alignment with the new Public Financial Management government strategy (2016-2021).

The updated Climate Fiscal Framework now deals with more fiscal policy implications from climate change. The updated version also highlights the role of the private sector, financial sector, and NGOs/CSOs in adopting more innovative approaches to climate finance.

National Adaptation Plan (2010-2022) **-** The National Adaptation Plan was established in 2010 at COP16 to enhance the global drive towards climate adaptation by addressing and identifying medium- and long-term adaptation needs. Bangladesh adopted a US$230 billion National Adaptation Plan (NAP) which envisages building a climate-resilient nation through effective adaptation strategies and fostering sustainable economic growth. The NAP comprises eight specific sectors which include, water resources, disaster social safety and security, agriculture, fisheries, aquaculture and livestock, urban areas, ecosystems, wetlands and biodiversity, policies and institutions and capacity development, research, and innovation. NAP (2022) plans to mobilise 72.5% of its total US$230 billion budget by 2040.

Nationally Determined Contribution (NDC) **-** Bangladesh's Nationally Determined Contribution (NDC) emphasises adaptation and mitigation measures highlighted in the BCCSAP but also introduces new priorities. In adaptation, the NDC introduces 10 key areas to address adverse impacts of climate change, one of which is 'enhanced urban resilience'. In addition, the NDC highlights adaptation priorities for Bangladesh, including the 'improvement of urban resilience through improvement of drainage systems to address urban flooding'. In addition, the NDC also highlights several mitigation measures that go beyond those prioritised in the BCCSAP. These measures include inherently urban actions, including greater energy efficiency and replacement of polluting cookstoves at the household level, and actions to improve rainwater harvesting and energy efficiency in commercial buildings.

The Mujib Climate Prosperity Plan (MCPP) **-** MCPP aims to deliver robust socio-economic development while accelerating green opportunities and resilience towards climate change. The focus areas are to eradicate extreme poverty and climate change-induced migration by 2030, induce about 4.1 million climate-resilient jobs, promote clean air and improve mobility, and exert a reduced loss or increase of savings of at least US$30 billion per year by 2030. The MCPP leverages the financing of the Eighth Five Year Plan 2020-2025 of Bangladesh, Vision 2041, and Bangladesh Delta Plan 2100 with synergies from the Bangladesh Climate Change Strategy and Action Plan (BCCSAP), National Adaptation Plan 2023-2050 (NAP) and Nationally Determined Contributions (NDCs) submitted in 2021. This aims to unlock a pathway for fast-tracked attainment of Sustainable Development Goals by 2030, and GDP per capita growth commensurate to upper middle-income status.

Bangladesh has developed several policies and initiatives to promote climate change mitigation and incorporate financial practices to promote economic resilience. However, in light of so many policies and the various sources of funds directed towards climate-relevant projects, there is a need to develop a

comprehensive public financial management policy to bring coherency into actual accounting of these policies.

4 Methodology

4.1 Research Design

The case study uses on a qualitative approach. Given the case study is based on the climate budget of Bangladesh, several budget reports and other budget-related instruments have been studied to get the essence of the climate budget process and current method of allocating funds. Interviews were conducted with key participants who were part of the process of incorporating the climate budget report and the allocation mechanism. Most of the data collected are from secondary sources, specifically publications and budget reports of the Ministry of Finance and other relevant ministries dating back from 2005. The climate budget reports date back from 2017-2024 along with the latest report.

4.2 Data Collection

The climate budget reports and the main budget reports were analysed to understand the budgetary processes and allocations in key sectors which include energy, transport, agriculture, environment, and disaster risk management. This then allows us to see the level of expenditure in activities that are allocated to help fight climate change or that may otherwise increase GHG emissions.

The national planning instruments (legislation, national development plans, strategies, and specific plans) related to climate change and the legal framework governing the budgeting processes in Bangladesh have been reviewed through secondary sources and through interviews.

Each of the stages in the budget cycle and their weighing for climate-relevant allocations have been reviewed from various instruments.

The new IBAS++ has been evaluated by studying various relevant documents to measure its effectiveness.

The study then analyses the effectiveness of the actual budget-relevant allocations by considering the various budgetary allocations and projects under the various ministries and corresponding GHG emissions over the years. For this purpose, KII also is constructed with relevant experts such as a Senior Climate Change Officer at ADB, a Sustainable Energy and Adaptation Specialist, and a few other experts in these sectors to get their inputs and formalise a framework. However, due to the election and upcoming budget, we are unable to obtain government officials insights.

5 Climate Budget Tracking

It has been globally acknowledged that there is a necessity to collaborate to prevent detrimental climate change. This entails gathering financial resources from various sources, including public and private entities, as well as bilateral and multilateral organisations. Monitoring and reporting financial flows that aid climate change mitigation and adaptation is becoming more crucial to establish trust, accountability, and to track advancements in climate-related investments.

5.1 Climate Tracking Methodology

OECD Rio Markets are used by governments to self-categorise and classify their projects as climate-related, but this has posed challenges. While these markers, which indicate climate change mitigation and adaptation efforts, have undergone refinements, they are inconsistently applied by donors. Each member nation employs a different scaling factor to determine the extent to which a project contributes to climate objectives, resulting in variations ranging from 0% to 100%. Additionally, multilateral development banks have established their own categorisation system, and some countries have modified their accounting methodologies over time (Robert et al. 2021).

CPEIR developed methodologies to support the identification of expenditures drawing on elements of the Rio markers' objective-based and/or MDBs' activity-based approaches. This analysis serves to raise awareness of climate change issues in central finance and planning agencies and demonstrates the potential of tagging as a tool for integrating climate change into plans and budgets. Many of the CPEIRs recommended that national authorities follow up with climate change budget tagging initiatives that would institutionalise the process for identifying climate-relevant expenditures and facilitating tracking through the budget process. Both the World Bank (2014) and UNDP (2015a) have issued guidance on the design and implementation of CPEIRs.

Climate change as a cross-cutting theme runs across public sector activities relevant to climate change adaptation and mitigation, and is typically scattered across several ministries. This includes 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 Public Financial Management (PFM) relating to the difficulty of planning, identifying and reporting climate related expenditures.

This methodology is designed to help address these challenges. It is a tool for identifying, classifying, weighting and marking climate-relevant allocations in the budget system, enabling the estimation, monitoring, and tracking of those expenditures. It includes the process of attaching a climate budget marker, such as a tag or account code, to budget lines or groups of budget lines. Bangladesh has adopted a multi-step objective-based cost component approach where they apply climate-relevant weights to all expenditures. The step-by-step approach comprises of five systematic steps:

1. **Linking BCCSAP themes and programmes with the climate relevance criteria -** All climate relevant expenditures are defined and classified based on national climate change policy and expenditure is categorised into adaptation and mitigation or a more relevant structure elaborated within the 6 thematic areas and programmes under BCCSAP 2009.

2. **Assigning climate relevant weights against each of the Climate Relevant Criterion -** The weights defined here are the proportion of total expenditures for each climate relevant

allocation/expenditure minus the share of the expenditure that would take place under a business-as-usual scenario. So, within the methodology, climate relevant activities are targeted in a way that even with a lower allocated amount or less relevant climate related action, these are still captured along with the most highly relevant ones. For example, in assigning weights, certain aspects are put into consideration such as location, known hotspots, potential vulnerability and other relevant project activities. It is very subjective in nature depending on their importance.

3. **Relevance of Projects and Programmes - If** a project or programme addresses only one relevance criterion, the climate relevant finance should be calculated as a percentage (of climate relevance) of the annual project allocation for the project/programme. However, the projects and programmes are usually complex in nature and may have finances that match more than one climate relevance criterion.

4. **Estimating climate finance for multiple relevance criteria for projects/programmes -** From the overall project or programme, relevance weights are worked out in Step-3 and should be distributed among the multiple matching relevance criteria according to the amount of budget allocation for each relevance area.

5. **Climate finance weights for 'Operating Budget' of the ministries/divisions -** Tracking operating cost is warranted as they constitute costs (such as functions, support activities, special activities, and LG) that go beyond development allocation (e.g. projects and programmes). The 'Allocation of Business', project and programme portfolios, and the contribution to climate change adaptation and mitigation are considered in this regard.

   The climate relevance categories used for the criteria-based assessment are assigned certain percentages as shown in Table 1:

   Table 1: Climate Relevant Categories

RELEVANCE	PERCENTAGE CRITERIA
Strongly Relevant	81 to 100 percent
Significantly Relevant	61 to 80 percent
Moderately Relevant	41 to 60 percent
Somewhat Relevant	21 to 40 percent
Implicitly Relevant	6 to 20 percent
Not Relevant	0 to 5 percent

The tracking of climate finance has only considered public finance so far. Private sector financing has not yet been considered. Nevertheless, there is scope to incorporate private sector financing into the methodology to obtain an overall picture of the total contribution of climate financing both the public and private sector. Additionally, there is scepticism as to how the BCCSAP thematic areas and programmes are rationalised with climate relevance criteria along with their respective weight distributions as discussed in the above tracking methodology.

5.2 The Accounting System

The Climate Fiscal Framework (2014) recommended that there should be some restructuring of the existing Ministry Budget Framework (MBF) to accommodate the climate dimension in the budget

formulation process. The required changes were necessitated by aligning with the six thematic areas identified in the BCCSAP 2009 which was mapped into the new Budget and Accounts Classification System (BACS) and iBAS++ by working out appropriate methodologies, such as introducing codes and classifications to enhance efficient tracking of climate relevant expenses.

The introduction of the IBAS++ system supports expanding the number of digits in the BACS (compared to the existing system) as it enables certain segments to be derived and the use of software tools to simplify the coding of transactions (including drop-down lists, defaults, and memory of prior coding for each user). In IBAS++, users will not be required to memorise long coding strings. In this way, the number of digits could be expanded whilst also achieving simplification for users (Ministry of Finance, 2017).

IBAS++ has been developed in a way that will also generate climate relevant reports to meet the requirements of various stakeholders. IBAS++ is to track to map all kinds of climate relevant expenditure to the lowest tire of local governments, including all climate hotspots. This is the first time that BACS and IBAS++ have been mapped to consider climate issues by centralising and integrating other relevant agencies.

The existing IT based systems established in other relevant agencies within the government (e.g. AIMS, DMFAS) identify the possibility of interfacing with IBAS++ for collection of climate relevant data and information and provide technical support for interfacing. Since the systems are already established, it would be possible to identify links to work out interfaces at lower cost. This will ensure real time and regular flows of information between the systems established in different agencies (Ministry of Finance, 2020). The system aims to track Climate Budget Data through linkages from the main budget documents, programmes, plans and strategies of the concerned Ministry/Division and create a sub-module, thus ensuring accurate accounting of climate expense. This also expedites the process of disseminating instructions across various line ministries.

The Climate Fiscal Framework (2014) recommended that there should be some restructuring of the existing Ministry Budget Framework (MBF) to accommodate the climate dimension in the budget formulation process. The required changes were necessitated by aligning with the six thematic areas identified in the BCCSAP 2009 which was mapped into the new Budget and Accounts Classification System (BACS) and iBAS++ by working out appropriate methodologies, such as introducing codes and classifications to enhance efficient tracking of climate relevant expenses.

The introduction of the IBAS++ system supports expanding the number of digits in the BACS (compared to the existing system) as it enables certain segments to be derived and the use of software tools to simplify the coding of transactions (including drop-down lists, defaults, and memory of prior coding for each user). In IBAS++, users will not be required to memorise long coding strings. In this way, the number of digits could be expanded whilst also achieving simplification for users (Ministry of Finance, 2017).

IBAS++ has been developed in a way that will also generate climate relevant reports to meet the requirements of various stakeholders. IBAS++ is to track to map all kinds of climate relevant expenditure to the lowest tire of local governments, including all climate hotspots. This is the first time that BACS and IBAS++ have been mapped to consider climate issues by centralising and integrating other relevant agencies.

The existing IT based systems established in other relevant agencies within the government (e.g. AIMS, DMFAS) identify the possibility of interfacing with IBAS++ for collection of climate relevant data and information and provide technical support for interfacing. Since the systems are already established, it would be possible to identify links to work out interfaces at lower cost. This will ensure real time and regular flows of information between the systems established in different agencies (Ministry of Finance, 2020). The system aims to track Climate Budget Data through linkages from the main budget documents, programmes, plans and strategies of the concerned Ministry/Division and create a sub-module, thus ensuring accurate accounting of climate expense. This also expedites the process of disseminating instructions across various line ministries.

6 Climate Relevant Allocation and Utilization

Over time, the budget allocation has increased within the BCCSAP thematic areas. However, it has also been observed that the allocation was not reflected in the actual expenditure. The table below shows the actual budget, the revised allocation, and actual expenditure. Even though in the initial budget the climate allocation under the respective thematic area was high, it has changed in the revised budget allocation and has been reduced in terms of actual expenditure. Under the BCCSAP thematic areas: food security, social protection, and health has an increasing allocation and expenditure rate compared to other thematic areas. In food security, social protection has about 42.28% allocated. Other areas have experienced decreases in both allocation and expenditure.

Table 2: BCCSAP Thematic Area Allocation (TK)

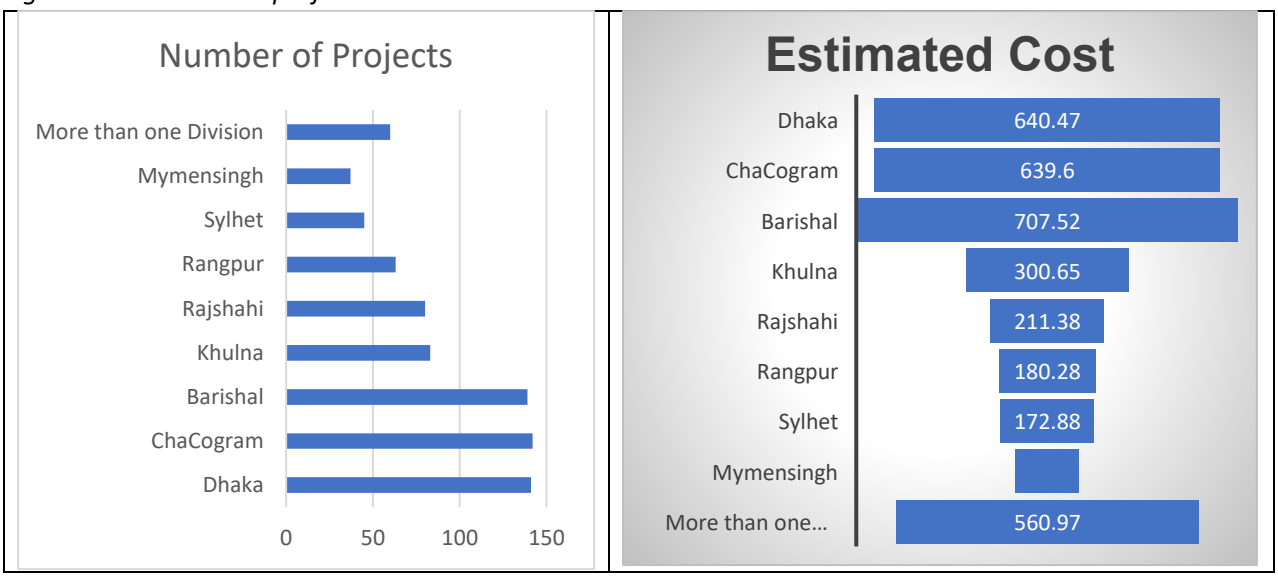
BCCSAP Thematic Areas	2017-18	2019-20	2020-21	2021-22	2022-23	2023-24
Food security, social protection, and health	8,392.94	9,722.89	9,951.24	10,425.52	13,587.03	15,666.00
% of total CC-relevant allocation	44.34	37.91	41.33	37.22	41.92	42.28
Comprehensive disaster management	1,785.24	2,135.84	1,811.86	1,977.88	2,200.42	2,559.25
% of total CC-relevant allocation	9.43	8.33	7.53	7.06	6.79	6.91
Infrastructure	4,063.87	7,370.27	6,303.85	7,929.19	9,291.88	10,556.97
% of total CC-relevant allocation	21.47	28.73	26.18	28.31	28.67	28.49
Research and knowledge management	944.04	858.94	822.73	910.62	937.33	1,119.45
% of total CC-relevant allocation	4.99	3.35	3.42	3.25	2.89	3.02
Mitigation and low-carbon development	2,852.31	4,217.58	3,919.62	5,082.71	4,340.04	4,893.75

% of total CC-relevant allocation	15.07	16.44	16.28	18.15	13.39	13.21
Capacity building and institutional strengthening	891.01	1,344.75	1,266.30	1,684.19	2,052.19	2,256.51
% of total CC-relevant allocation	4.71	5.24	5.26	6.01	6.33	6.09
Total CC Relevance (Tk.)	18,929.41	25,650.27	24,075.60	28,010.11	32,408.89	37,051.93
% of Total Budget	8.01	8.44	7.48	8.09	8.56	8.99

Source: Ministry of Finance

The lowest share of the climate budget, which was only 3.02 per cent in FY24, was allocated to research and knowledge management. Two important thematic areas, mitigation and low-carbon development and comprehensive disaster management, are not among the top Climate Budget recipients either. In contrast, the allocation for mitigation and low-carbon development increased over the years from 9.32 per cent in FY16 to 13.21 per cent in FY24. However, the allocation for comprehensive disaster management decreased from 11.68 per cent in FY16 to 6.91 per cent in FY24. Being vulnerable to climate change, the allocation for comprehensive disaster management for Bangladesh should be prioritised. Infrastructure has also received the second-highest allocation over the years. For a friendly environment and sustainable urban development to promote smart agriculture, this allocation is also necessary.

Figure 4: Division wise project allocation and cost



On the basis of division-wise project allocations, Barisal Division received the highest allocation, followed by Dhaka and Chattogram Divisions respectively. On the other hand, Mymensingh Division ranks last in terms of the number of projects and their allocation, where against 37 projects, the amount of allocation is Tk.1.18 billion.

Every year Barisal is exposed to frequent flooding, urban sewage problems and cyclones with damaging impact on low-income households. A study by Swiss Re (2023) shows communities in Barisal face annual damage of about USD$10 million, which is projected to increase significantly by 2050.

From both government and non-government sources, a total of TK.395.5 billion was allocated to implement the climate change agenda under this fund until 2022-23. As of December 2022, 851 projects were approved, with 790 projects being implemented by various Ministries/Divisions and the remaining 61 projects were implemented by different NGOs under the supervision of the Palli Karma-Sahayak Foundation (PKSF). The Local Government Division received the highest allocation of TK.13.97 billion followed by the Ministry of Water Resources and the Ministry of Environment, Forest and Climate Change at TK.10.57 billion and TK.4.85 billion respectively.

Figure 5: Climate-related allocations according to BCCSAP thematic areas of 25 Ministries/Divisions

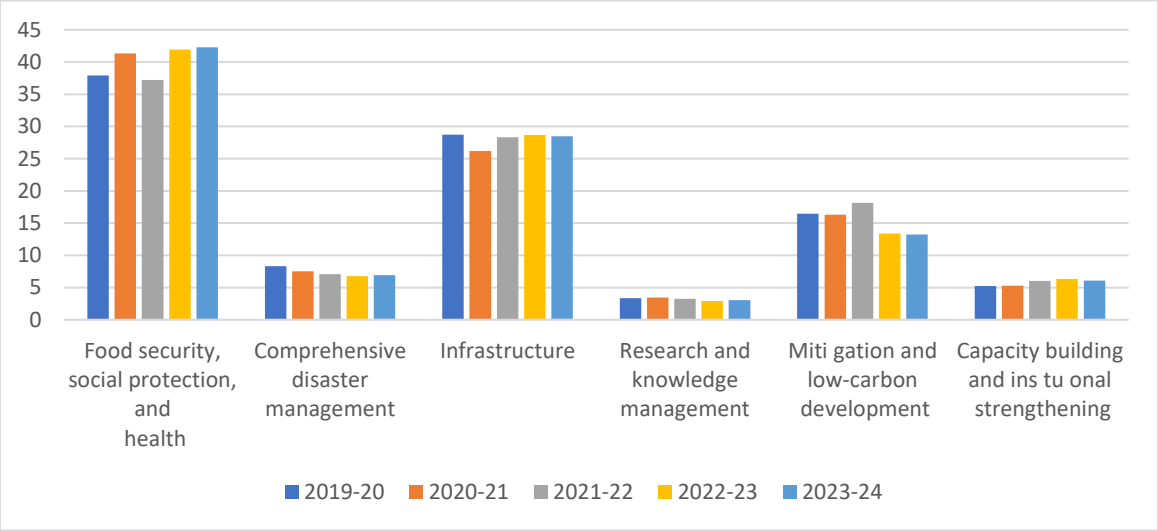
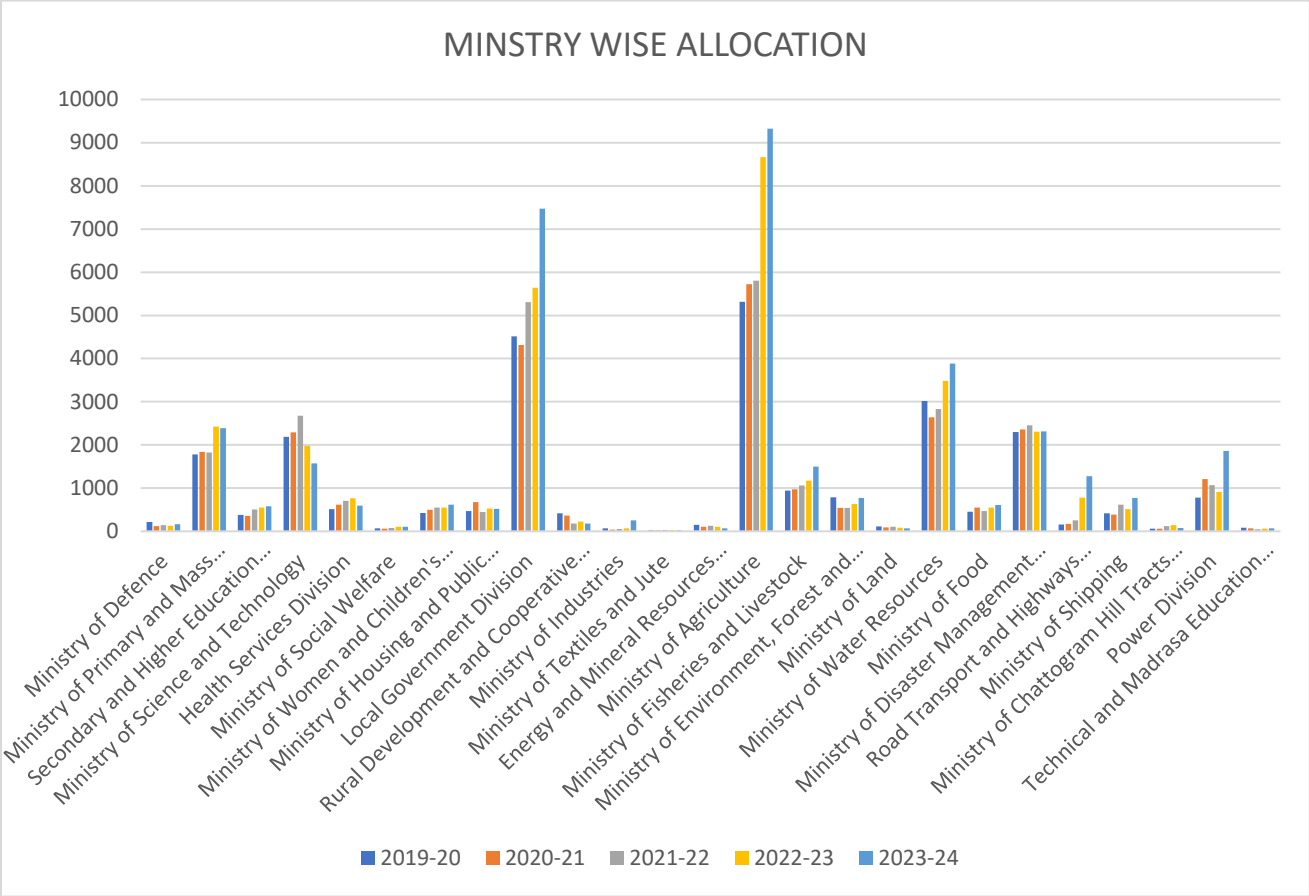


Figure 5 shows climate-related allocations as a percentage of the budget of 25 Ministries/Divisions in six BCCSAP thematic areas over a period of 5 years. Among the thematic areas, the highest allocation was made to Food Security, Social Protection and Health, followed by Infrastructure. The lowest allocation went to Research and Knowledge Management. There were some fluctuations observed in the allocation for Food Security, Social Protection and Health. However, the allocation remains consistent for Infrastructure. The figure also captures the tendency to increase the allocation for Mitigation and Low carbon Development over FY2019-20 to FY2021-22, which has declined in recent years.

Figure 6: Ministry wise (25 ministries) allocation over time



Source: Ministry of Finance

Figure 6 shows ministry wide climate relevant allocations since 2019 across all 25 ministries. The Ministry of Agriculture (TK. 86.67 billion) and the Local Government Division (TK.37.68 billion) have experienced a drastic increase in allocation towards climate relevant projects. On the other hand, the Ministry of Defence, Ministry of Rural Development, Ministry of Land and Ministry of Energy are experiencing a lower allocation compared to previous years.

6.1 Actual Budget Utilisation

Over the years, governments have allocated a higher number of climate relevant budgets to all 25 ministries. However, by the end of the period, the actual expenditure was less than the allocation.

Table 3: Actual Expenditure

Ministries		2017-18		2018-19			2019-20			2020-21			2021-22		
	Budget	Revised	Actual	Budget	Revised	Actual	Budget	Revised	Actual	Budget	Revised	Actual	Budget	Revised	Actual
Ministry of Defence	0.64	0.24	0.26	0.47	0.33	0.16	0.68	0.21	0.2	0.35	0.23	0.17	0.38	0.3	0.28
Ministry of	5.7	5.43	4.68	5.5	6.26	6.18	7.41	7.32	6.68	7.37	6.3	5.97	6.92	7.29	7.23
Secondary and Higher Education Division	1.06	1.18	1.09	1.29	1.19	1.16	1.28	1.06	0.97	1.07	0.99	0.79	1.4	1.16	1.05
Ministry of Science and Technology	13.48	13.64	13.92	13.15	13.29	13.3	13.29	13.11	13.09	12.75	13.24	13.34	12.62	13.19	13.22
Health Services	2.99	2.81	2.53	3.09	2.8	2.51	2.59	2.65	2.2	2.7	2.88	2.24	2.74	2.81	2.71
Ministry of Social Welfare	1.17	1.22	1.14	1.16	1.07	0.91	1.03	0.94	0.74	0.82	1	0.75	0.81	0.89	0.79
Ministry of Women and	13.85	13.86	13.6	11.56	12.03	11.97	11.31	12.03	4.96	12.92	12.65	12.58	13.05	12.57	12.85
Ministry of Housing and Public Works	3.38	5.59	5.95	12.41	10.51	7.07	7.07	11.46	12.02	9.73	9.54	9.31	7.02	9.27	10.08
Local Government Division	7.15	7.09	6.25	6.88	7.14	7.45	7.69	7.09	7.15	6.78	7.18	9.88	13.53	12.66	11.39
Rural Development	16.07	18.24	18.25	15.69	16.34	16.49	16.93	17.54	17.35	16.27	17.85	16.91	10.16	14.12	14.49
Ministry of Industries	1.56	1.4	1.4	3.72	3.44	2.86	4.28	2.55	2.74	2.43	4.17	2.48	3.42	3.08	2.99
Ministry of Textiles and Jute	0.68	0.84	0.82	1.15	0.94	0.82	3.34	1.48	1.53	3.37	1.01	0.89	4.99	3.48	3.34
Energy and Mineral Resources Division	8.79	11.54	18.49	11.06	14.36	7.66	7.39	7.61	4.55	5.63	7.57	6.74	6.21	6.85	7.01
Ministry of Agriculture	39.12	38.83	38.85	39.2	39.06	38.96	37.78	37.79	37.85	37.05	36.84	36.87	35.82	36.56	37.19
Ministry of Fisheries and Livestock	24.36	25.58	24.97	23.86	26.08	26.95	32.25	22.84	27.42	30.51	33.27	39.24	30.83	29.36	33.54
Ministry of Environment,	37.47	46.6	47.73	52.68	52.23	53.32	37.84	50.6	43.77	31.38	34.65	43.75	44.38	47.61	46.17
Ministry of Land	8.09	13.55	15.33	5.06	6.08	6.69	5.88	2.39	2.43	4.4	3.79	3.48	4.84	5.14	5.61
Ministry of Water Resources	39.94	40	40.81	41.29	38.47	37.97	38.01	34.58	31.4	32.62	35.72	34.14	32.11	31.82	30.7
Ministry of Food	2.77	1.43	1.42	2.64	2.64	0.88	2.64	2.86	3.04	2.87	2.56	2.57	2.64	2.84	2.76
Ministry of Disaster Management and Relief	21.14	21.57	21.06	24.05	22.69	22.82	23.28	20.31	18.9	24.01	22.45	22.51	24.7	23.11	22.66
Road Transport and Highways Division	0.76	0.49	0.39	0.61	0.42	0.51	0.53	0.52	0.44	0.59	0.58	0.61	0.78	0.55	0.5
Ministry of Shipping	12.33	10.7	10.22	9.98	8.63	8.76	10.97	10.86	11.58	9.7	8.43	8.53	11.95	14.41	12.41
Ministry of Chattogram Hill Tracts Affairs	6.27	6.98	6.05	6.33	9.61	9.92	5.23	5.82	6.1	5.07	6.05	5.48	9.99	9.85	10.07
Power Division	4.15	4.46	4.43	3.45	4.16	4.78	3.01	3.26	3.67	4.86	2.74	2.84	4.22	3.13	3.02
Technical and Madrasa	2.12	2.39	1.57	2.24	2.28	2.12	1.12	1.12	0.59	0.84	0.61	0.36	0.5	0.49	0.35

Source: Ministry of Finance, Climate Budget Report

In 2017-2018, the highest allocations were made to the Ministry of Agriculture, the Ministry of Water Resources and the Ministry of Environment, Forest, and Climate Change (MoEFCC) respectively. However, in terms of revision and actual expenditure, it was drastically reduced for all other ministries except for these three. In fact, MoEFCC utilised more funds than were allocated. Goosen et al. (2018) conducted the National Climate Vulnerability Assessment of Bangladesh. During the period, they identified several hazards that are significant to the country. This includes temperature and heat pressure escalation, heightened drought occurrences, intensified rainfall patterns, increased flooding of major rivers, erosion of riverbanks, rising sea levels accompanied by salinity intrusion, cyclones and storms, as well as amplified coastal flood intensity.

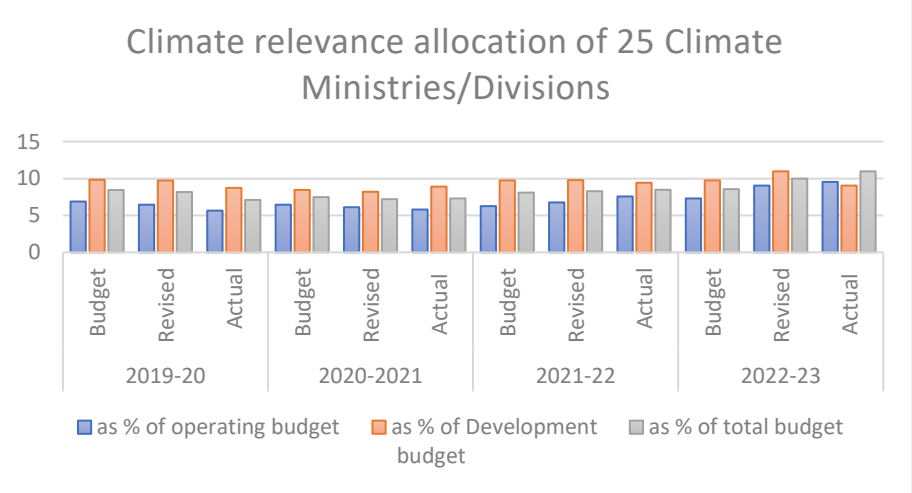
The Ministry of Agriculture has also secured a growing climate budget allocation. Climate change has been identified as a significant factor in environmental degradation caused by agriculture, primarily due to its

association with greenhouse gas emissions. This sector is particularly vulnerable to the impacts of climate change. Bangladesh's agricultural sector is one of the country's most energy-intensive industries due to its heavy mechanisation and irrigation practices. Following the transportation industry, which accounts for around 45% of energy consumption, agriculture ranks second with petroleum usage of 19%. To tackle this issue, the Ministries of Agriculture and Power, Energy and Mineral Resources are spearheading a government project that promotes the widespread adoption of solar irrigation systems, utilising renewable energy sources (Raihan et al 2023). The Local Government Division, Ministry of Agriculture and Energy, and Mineral Resources Division, have reportedly spent more than they have been allocated. Other sectors have relatively underutilised their actual budget over the years.

In the FY2023-24, there was about TK99.7608 billion allocated to climate relevant social safety net programmes (SSNP) across different relevant ministries, such as char development and settlement, construction of flood shelters in flood affected or prone areas. There has been a significant increase in the allocation for this in the FY 2024-25 which accounts for around TK179.11 billion that is about 13.23% of climate relevant allocations to total social safety net programmes. Bangladesh has also been trying to make the climate budget more gender responsive. Under the Ministry of Social welfare, there has been an increase in the budget allocation for gender issues from Tk 0.4791 FY-24 billion to TK0.6102 billion for the FY 2024-25. In 2013, the government formulated the Bangladesh Climate Change and Gender Action Plan (ccGAP). The plan has recently been updated and is to be approved soon by the policymakers.

Furthermore, another facet to be discussed for the actual implementation is through the lens of the operational and development budget that is also climate relevant. Figure 7 shows that overtime there has been an increase in the revised budget, while the actual budget spent has always been comparatively lower. This shows that even with a more proper allocation, the budget was not fully utilised to its maximum.

Figure 7: Operational Vs Development Climate Relevant Budget



Source: Ministry of Finance (2023)

Another aspect of the actual usage of the allocated fund can be discussed through the lens of total greenhouse gas emissions over the years that the climate budget received importance and also whether the cost of damage due carbon emissions has been contained over the same period. This increase has been a result of rapid growth in energy demand and increasing industrialisation. With increasing

commercial buildings and plots, energy demand has been increasing. There has been a surge of Economic Zones which is increasing employment and building roads and other infrastructures, but at the cost of increasing emissions. Even with the inclusion of the climate budget and the disparity shown between the original budget allocation and actual expenditure in Table 3, the budget is neither enough nor is it being utilised effectively to reduce GHG emissions (Figure 8). If we look at sector specific emissions, Figure 9 shows that the major contributors of GHG emissions are predominantly Energy, Agriculture, and the usage of electricity. In FY 2020-21 and FY 2021-22 the initial budget allocation for renewable energy development was about TK5.30 billion and TK5.71 billion respectively. However, the actual utilization was about TK0.53 billion and TK2.03 billion respectively (Ministry of Finance, 2023).

Figure 8: Total GHG Emission

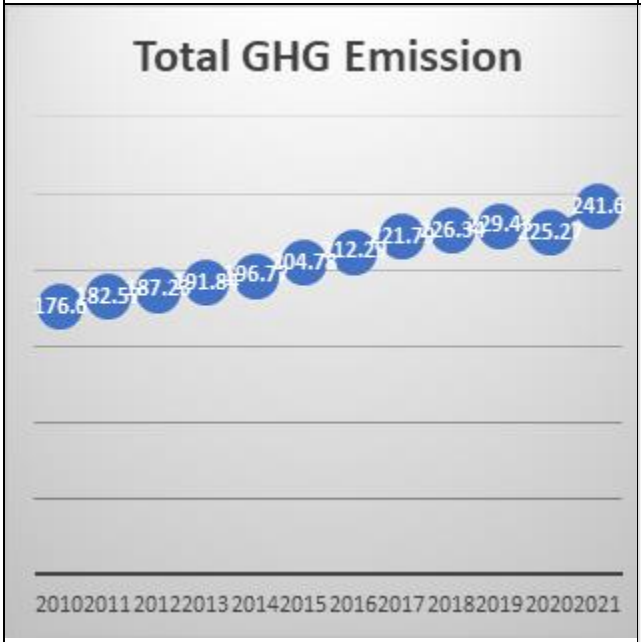
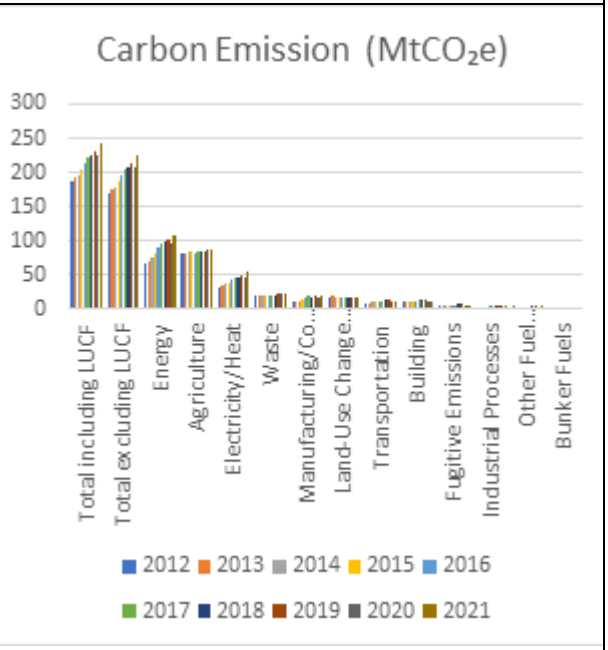


Figure 9: Sectoral GHG Emission



Source: Climate Watch

7 Conclusion

According to the Global Climate Risk Index 2021, Bangladesh was ranked the 7th most climate-vulnerable country. Over the years, climate-specific allocations have been increasing in various sectors, however, both the utilisation and revised budget allocation indicate fluctuations. The budget allocation was still lower in the FY 2024, 4.86% of the total budget and 0.74% of GDP, compared to FY 2023, 5.63% of the total budget and 0.84% of GDP (CPD, 2024). Research, capacity building, and disaster management have received lower allocations, but these are important for making assessments of environmental vulnerability and preparing institutions to be prepared for climate finance readiness (Vanderweerd et al., 2013; Sumawai & Hill, 2018)

There is also uncertainty as to how the climate relevance weights are configured. The weights assigned for the metric should be developed to quantify and justify the importance of relevant allocations. Odisha uses the SAPFIN methodology, though under scrutiny, and this has shown some progress. The framework

assesses climate-relevant expenditure needs and makes the budget more climate-responsive by identifying expenditures imperative to climate change and assessing the percentage of spending related to climate change.

IBAS++ has somewhat incorporated tracking climate funds as well. However, as of yet, private-sector financing has not been considered. BCCSAP thematic areas and programmes, which are rationalised and used as guidance with climate relevance criteria for tracking (along with their respective weight distribution) should also be modified.

Multiple projects are proposed for funding, and some of these are already in the pipeline. Yet, to what extent the budget is being properly managed is the key question. Monitoring and evaluation through a holistic approach is required to make overall climate change mitigation easier.

If financial monitoring is strengthened, then the effectiveness of the allocation and utilisation of the budget in climate-relevant sectors could be optimised. The focus should be more on the sectors where the potential to reduce emissions is the highest, or where adaptation efforts will actually mitigate vulnerabilities. Financial monitoring can take place following the annual budget cycle, and this could be part of the reporting process on an annual basis. This is usually the general case for tracking the national budget (Bird et al, 2016).

Few methodologies track expenditure and even though tagging is integrated into the process,reporting is rarely done as can be seen with Bangladesh Climate budgeting. We can see allocations and changes in actual expenditure. However, the difference between the allocation and utilisation is yet unclear. Bangladesh has managed to organise climate performance audits for tagged projects in a systematic way. Bangladesh adopted the specific guidelines of the International Organisation of Supreme Audit Institutions (INTOSAI) via The Office of the Comptroller and Auditor General. This was adapted to country-specific requirements and until now has led to audits of two climate-tagged projects. Nevertheless, more emphasis is needed on the use of data generated from climate budget tagging to inform policy, planning, and budgeting.

Since the adoption of Climate Budgeting, only BCCSAP thematic areas have been used maintaining the same six themes. Bangladesh should start incorporating climate change into its budgeting format using a different lens. There are allocations made only to 25 ministries, but there are still 15 ministries remaining. In addition, there seems to be no funding allocation for projects under NAP (2050), although they are listed in the budget along with the mention of six ongoing GCF projects, and nine ongoing Global Environment Facility (GEF) projects.

Climate budgets should also incorporate various policies and interventions into the budget circular. For example, in Kenya's 2020 budget circular, priority mitigation and adaptation interventions are outlined, which include renewable energy generation, and energy efficiency in construction, water, and disaster risk management. The circular further outlines the system of climate budget tagging with the idea to ensure the proper mobilisation of resources.

Bangladesh has taken commendable steps in mitigating climate change risk. The integration of climate change in national budgets addresses the issues of multifaceted challenges faced by Bangladesh. Addressing the gaps discussed above would foster long-term economic and environmental sustainability. This is especially the case in the context of monitoring and strengthening institutional governance and incorporating the relevant components in the formulation of the Climate Budget.

References

Assessment of the Climate Responsive Budgeting Framework adopted by States in India.Centre for Budget and Governance Accountability (CBGA, 2022).

Climate Budget 2021-22, February 2021, Finance Department, Government of Odisha

Bird, N., & Granoff, I. (2016). National monitoring approaches for climate change public finance. *London: GIZ and ODI*.

Bird, N., Tilley, H., Trujillo, N. C., Tumushabe, G., Welham, B., & Yanda, P. (2013). Measuring the effectiveness of public climate finance delivery at the national level--Research reports and studies.

Chowdhury, M. M. I., Rahman, S. M., Abubakar, I. R., Aina, Y. A., Hasan, M. A., & Khondaker, A. N. (2021). A review of policies and initiatives for climate change mitigation and environmental sustainability in Bangladesh. *Environment, Development and Sustainability*, *23*, 1133-1161.

Eckstein, D., Künzel, V., & Schäfer, L. (2021). *The global climate risk index 2021*. Bonn: Germanwatch.

Fankhauser, S., & Burton, I. (2011). Spending adaptation money wisely. *Climate Policy*, *11*(3), 1037-1049.Khatun et al (2023). Establishing a Blended Finance Mechanism Involving Climate Funds in Bangladesh Opportunities and Challenges, Centre for Policy Dialogue

Financial Express BD (2024). Anomalous public fund allocation for mitigating climate change impact.

Forni, L., Catalano, M., & Pezzolla, E. (2018). Increasing resilience: Fiscal policy for climate adaptation. In *Fiscal policies for development and climate action* (Vol. 1, pp. 115-133). World Bank Group.

Ford, J. D., Berrang-Ford, L., Lesnikowski, A., Barrera, M., & Heymann, S. J. (2013). How to track adaptation to climate change: a typology of approaches for national-level application. *Ecology and Society*, *18*(3).

Goosen, H., Hasan, T., Saha, S. K., Rezwana, N., Rahman, R., Assaduzzaman, M., & Van Scheltinga, C. (2018). Nationwide climate vulnerability assessment in Bangladesh. *Final Draft*.

Global Economic Devision (2012): Bangladesh Climate Public Expenditure and Institutional Review (CPEIR), GED, Planning Commission, Government of Bangladesh, supported by UNDP, Dhaka, May 201

Khatun, F., & Al Kabir, F. (2023). *Review of Climate Budget and Recommendations for Climate Public Finance Management in Bangladesh* (No. 151). Centre for Policy Dialogue (CPD).

Ministry of Finance (2012). Climate Public Expenditure and Institutional Review.

Ministry of Finance (2017). Climate Protection and Development. Budget Report

Ministry of Finance (2017). *Public Expenditure Management Strengthening Program (PEMS*). Budget & Accounting Classification Manual

Ministry of Finance (2018). Climate Public finance tracking

Ministry of Finance (2019). Climate Finance for Sustainable Development, Budget Report

Ministry of Finance (2020). Climate Finance for Sustainable Development, Budget Report

Ministry of Finance (2020). Climate Budget Scenario in Bangladesh. Accessible at: https://www.financeministersforclimate.org/sites/cape/files/inline-files/Session%202%20-%20Bangladesh%20Writeup.pdf

Ministry of Finance (2021). Climate Finance for Sustainable Development, Budget Report

Ministry of Finance (2022). Climate Finance for Sustainable Development, Budget Report

Ministry of Finance (2023). Climate Finance for Sustainable Development, Budget Report

Ministry of Environment, Forest and Climate Change (2022). National Adaptation Plan

Miller, M. (2012). Climate public expenditure and institutional reviews (CPEIRs) in the Asia-Pacific region: what have we learnt. *Bangkok: the Asia-Pacific Regional Center, United Nations Development Programme*.

New Government, National Budget and Citizens' Aspirations. Centre for Policy Dialogue, CPD (2024)

OECD (2024). Green Budgeting in OECD Countries

O'Donnell, M., Rashid, A. M., Steele, P., Hedger, M., Lee, J., Islam, K. N., ... & Sinha, N. C. (2013). Bangladesh climate public expenditure and institutional review. *Climate change adaptation actions in Bangladesh*, 365-385.

Raihan, A., Muhtasim, D. A., Farhana, S., Hasan, M. A. U., Pavel, M. I., Faruk, O., ... & Mahmood, A. (2023). An econometric analysis of Greenhouse gas emissions from different agricultural factors in Bangladesh. *Energy Nexus*, *9*, 100179.

Roberts, J.T., Weikmans, R., Robinson, Sa. et al (2021). Rebooting a failed promise of climate finance. *Nat. Clim. Chang.* **11**, 180–182

Roelfsema, M., van Soest, H. L., Harmsen, M., van Vuuren, D. P., Bertram, C., den Elzen, M., ... & Vishwanathan, S. S. (2020). Taking stock of national climate policies to evaluate implementation of the Paris Agreement. *Nature communications*, *11*(1), 2096.

Samuwai, J., & Hills, J. M. (2018). Assessing climate finance readiness in the Asia-Pacific region. *Sustainability*, *10*(4), 1192.

Sherifdeen et al (2020). Indicators to Evaluate the Institutional Effectiveness of National Climate Financing Mechanisms, *Forest and Society*, Vol. 4 No. 2 (2020): NOVEMBER.

Shiman, D. R. (2023). Mitigating Climate Change Using a Budget Approach. *Available at SSRN 4537882*.

Tominaga.E, &Ponniah.J (2023). Four Ways to Use Public Financial Management to Address Climate Change. Asian Development Bank (ADB)

Tippmann, R., Agoumi, A., Perroy, L., Doria, M., Henders, S., & Goldmann, R. (2013). Assessing barriers and solutions to financing adaptation projects in Africa. *A report submitted to the International Development Research Centre. Toronto: International Development Research Centre*.

Vandeweerd, V., Glemarec, Y., & Billett, S. (2012). Readiness for climate finance: A framework for understanding what it means to be ready to use climate finance. *United Nations Development Programme (UNDP), New York, NY, USA*.

Vij, S., Moors, E., Ahmad, B., Arfanuzzaman, M., Bhadwal, S., Biesbroek, R., ... & Wester, P. (2017). Climate adaptation approaches and key policy characteristics: Cases from South Asia. *Environmental Science & Policy*, *78*, 58-65.

Women, U. N., & Oanh, P. T. K. Advancing Gender Equality in Asia and the Pacific in the Context of Climate Change.

Wang. B & Gopal M (2023). Climate Action Brief: Bangladesh. *Asia Society Policy Institute, ASPI*

World Bank (2022). Country Climate and Development Report for Bangladesh

World Bank (2024). Country Climate and Development Report for Ethiopia

Appendix A: List of Acronyms

ADP	Annual Development Plan
BCCSAP	(Bangladesh Climate Change Strategy and Action Plan)
BDP 2100	(Bangladesh Delta Plan 2100)
BCCTF	Bangladesh Climate Change Trust Fund (BCCTF)
BACS	(Budget and Accounting Classification System)
CABRI	Collaborative African Budget Reform Initiative
CBGA	Centre for Budget and Governance Accountability
ccGAP	Climate Change and Gender Action Plan
CSO	Civil Society Organization
CPEIR	(Climate Public Expenditure & Institutional Review)
CFF	(Climate Fiscal Framework)
GoB	Government of Bangladesh

Appendix B: Descriptions of Figures