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Parliamentary Oversight of Climate Finance in ASEAN

A Compendium of Parliamentary Briefs on Climate Finance and Policy

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PARLIAMENTARY CENTRE OF ASIA
Strengthening Parliamentary Capacity

The Parliamentary Centre of Asia (PCAsia) is an independent, non-partisan institute dedicated to supporting ASEAN parliaments through tailored capacity development, including training, dialogue platforms, and evidence-based research. With a focus on good parliamentary practices and fostering regional cooperation on challenges such as climate change, gender equality, and peacebuilding, PCAsia's work is strengthened by partnerships with legislative bodies — including ASEAN Parliaments, AIPA, Parliaments outside the region — and other key institutions. Through these collaborations, PCAsia plays a key role in strengthening parliamentary performance by connecting parliaments together and parliaments with people, contributing to responsive democratic governance across the region.

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PARLIAMENTARY OVERSIGHT OF CLIMATE FINANCE IN ASEAN

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Parliamentary Oversight of Climate Finance in ASEAN

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Citation

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ABBREVIATIONS

ADB	Asian Development Bank
AFD	Agence Française de Développement
AKSARA	Aplikasi Perencanaandan Pemantauan Aksi Pembangunan Rendah Karbon Indonesia
ALGU	Allocations to Local Government Units
APBN	Anggaran Pendapatandan Belanja Negara (State Budget, Indonesia)
BAU	Business As Usual
BESF	Budget of Expenditures and Sources of Financing
BLGF	Bureau of Local Government Finance
BSGC	Budgetary Support to the Government Corporations
BUR	Biennial Update Report
BTr	Bureau of the Treasury
CA	Climate Adaptation
Cat DDO	Catastrophe Deferred Drawdown Option
CBT	Climate Budget Tagging
CC	Climate Change
CCAM	Climate Change Adaptation and Mitigation
CCET	Climate Change Expenditure Tagging
CCC	Climate Change Commission
CPI	Climate Policy Initiative
CSO	Civil Society Organization
DA	Department of Agriculture
DAK	Dana Alokasi Khusus (Special Allocation Funds)
DAR	Department of Agrarian Reform
DBH-DR	Dana Bagi Hasil – Dana Reboisasi (Revenue Sharing Funds – Reforestation Fund)
DBM	Department of Budget and Management
DEPDev	Department of Economy, Planning, and Development
DENR	Department of Environment and Natural Resources
DOF	Department of Finance
DOE	Department of Energy
DOTr	Department of Transportation
DOST	Department of Science and Technology
DRCMTF	Disaster Response and Crisis Management Task Force
DRF	Disaster Risk Financing
DRFI	Disaster Risk Financing and Insurance
DRIP	Disaster Resilience Improvement Program
DRRM	Disaster Risk Reduction and Management
DSWD	Department of Social Welfare and Development
FGD	Focus Group Discussion
GAA	General Appropriations Act
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEMP	Government Energy Management Program
GHG	Greenhouse Gas
IMF	International Monetary Fund
IP	Implementation Plan

JMC	Joint Memorandum Circular
K/L	Kementerian/Lembaga (Ministries/Agencies)
KRISNA	Kolaborasi Perencanaandan Informasi Kinerja Anggaran
LCCAP	Local Climate Change Action Plan
LCDI	Low Carbon Development Initiative
LDRRMF	Local Disaster Risk Reduction and Management Fund
LDRRMOs	Local Disaster Risk Reduction and Management Offices
LDRRMC	Local Disaster Risk Reduction and Management Council
LGU	Local Government Unit
LTS-LCCR	Long-Term Strategy for Low Carbon and Climate Resilience
M&E	Monitoring and Evaluation
MoDP	Ministry of Development Planning (Bappenas)
MoEF	Ministry of Environment and Forestry
MoF	Ministry of Finance
NARS	National Asset Registry System
NCCAP	National Climate Change Action Plan
NDC	Nationally Determined Contribution
NDC IP	NDC Implementation Plan
NDRRMC	National Disaster Risk Reduction and Management Council
NDRRMF	National Disaster Risk Reduction and Management Fund
NG	National Government
NGA	National Government Agency
NGO	Non-Governmental Organization
NHA	National Housing Authority
ODA	Official Development Assistance
OP	Office of the President
PFM	Public Financial Management
Phivolcs	Philippine Institute of Volcanology and Seismology
PIDS	Philippine Institute for Development Studies
PSA	Philippine Statistics Authority
PSF	People's Survival Fund
QRF	Quick Response Fund
R.A.	Republic Act
RCBT	Regional Climate Budget Tagging
Renja K/L	Rencana Kerja Kementerian/ Lembaga
RKA-K/L	Rencana Kerja dan Anggaran Kementerian/Lembaga
RRPs	Restoration and Recovery Plans
SAKTI	Sistem Aplikasi Keuangan Tingkat Instansi
SDGs	Sustainable Development Goals
SMART	System for Monitoring, Analysis, Reporting, and Tracking
SRN	Sistem Registri Nasional (National Registry System)
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

FOREWORD

This compendium is the result of a joint initiative between the United Nations Development Programme (UNDP) and the Parliamentary Centre of Asia (PCAsia) to strengthen the capacity of ASEAN parliaments in overseeing climate finance. The collaborative project on "Strengthening the Roles of ASEAN Parliaments for Enhancing Transparency and Accountability of Climate Finance," is part of an effort to support legislative institutions engage more effectively with resourcing mechanisms and to meet national climate targets.

UNDP and PCAsia bring complementary strengths to this partnership: UNDP provides technical expertise on climate finance and public expenditure through its Climate Finance Network, while PCAsia offers a strong record of success in delivering trainings and facilitating experience sharing amongst parliaments in the region. Crucially, the partnership recognises that lasting impact depends on strong parliamentary ownership—ensuring that the skills and knowledge acquired are not only understood, but actively embraced and applied within parliamentary processes.

A key feature of this initiative, therefore, has been the strong involvement of the leadership in participating parliaments. The training programme and subsequent technical support provided were developed in response to their request—demonstrating a clear recognition of the increasing technical demands placed on parliamentary staff in emerging policy areas such as climate finance.

Based on this vision, sixteen participants from Cambodia, Indonesia, the Philippines, and Thailand were nominated for a specialised training that included themes of climate finance, climate budget analysis, climate budget tagging, and other fiscal oversight tools. With continued mentoring from UNDP specialists, attendees produced climate budget briefs that address country-specific challenges and institutional priorities. These briefs—compiled here—offer practical insights and serve as models for integrating climate considerations into parliamentary budget work.

As ASEAN parliaments continue to confront the complex challenges of climate change, it is the hope of UNDP and PCAsia that this compendium will help contribute to more informed, transparent, and effective scrutiny of climate finance in ASEAN—and support parliaments in fulfilling their oversight, budgetary, and representative functions in this critical area.

Prasnar YI
Executive Director
Parliamentary Centre of Asia

SYNOPSIS

ASEAN Member States are currently in the process of updating their NDC 3.0 by 2025 and the role of parliament to engage in the process is critical. As determined from previous NDCs, ASEAN is projected to require approximately USD 422.16 billion in climate finance by 2030. In contrast, current annual climate finance flows into ASEAN are estimated at only USD 3.2 to 6 billion[1]. This highlights a significant gap between the region's financing needs and the current level of financial support. In alignment with ASEAN's climate vision in achieving carbon neutrality by 2050, mobilizing and accessing climate finance is a top priority in the region. In response to the region's financing gaps, several ASEAN Member States have begun mobilizing and investing in climate action through government funding and external resources.

PCAsia and UNDP collaborated to help strengthen parliamentary oversight capacity in ASEAN countries through an initiative that aimed at improving the knowledge and skills of parliamentary staff. After a week-long training on sustainable and climate finance, the parliamentary staff were supported in developing climate thematic/budget briefs.

This synopsis consolidates the findings of seven papers that examine current climate-related public expenditures in the Philippines, Indonesia, Cambodia, and Thailand and identifies key gaps that parliaments must address to enhance effectiveness and accountability in climate finance in each country. This synopsis also examines the challenges associated with implementing key climate response policies—such as the disaster management financing policy in the Philippines, the energy transition policy in Indonesia, and the Long-Term Strategy for Carbon Neutrality (LTS4CN) in Cambodia—while reflecting on the role of parliaments in supporting and advancing these policies. The summary of the seven papers is structured as follows.

REVIEW OF PHILIPPINE CLIMATE CHANGE EXPENDITURES

BY MS COLEEN ABIGAIL VILLALUZ AND MS JENNELYN GO-SISON

This brief provides an analysis of the Philippine government's climate change expenditures from 2019 to 2023, with a focus on alignment with the National Climate Change Action Plan (NCCAP). Following the enactment of the Climate Change Act in 2009 and the institutionalization of the Climate Change Expenditure Tagging (CCET) system in 2015, national budget allocations for climate-related activities have significantly increased. The proposed 2025 climate budget exceeds ₱1 trillion, reflecting both expanded agency participation and enhanced tagging processes. Despite this upward trend, actual disbursement has been inconsistent, with notable underutilization during the COVID-19 years and over-expenditure in 2022–2023 due to carryover obligations. The majority of climate expenditures are concentrated in Water Sufficiency and Sustainable Energy priorities, primarily through large-scale infrastructure projects such as flood control and urban transit systems, most of which are centered in Metro Manila and Luzon. This geographic and typological concentration raises concerns about equity and alignment with NCCAP's broader goals, including the enhanced adaptive capacity and resilience of communities to climate change. Projects funded by Official Development Assistance

1 UNFCCC (2022). Technical assessment of climate finance in Southeast Asia

(ODA) demonstrate better monitoring, suggesting a need for improved oversight in General Appropriations Act (GAA)-funded initiatives. The report underscores the urgent need for updated monitoring and evaluation frameworks, as the latest published M&E report from Climate Change Commission only covers up to 2016. Recommendations include reassessing expenditure allocations, enhancing institutional capacity, and expanding impact assessments to ensure more balanced, inclusive, and effective climate action across the country, especially in underserved regions such as Visayas and Mindanao.

NAVIGATING THE STORM: CHALLENGES AND FISCAL IMPACTS OF NATURAL DISASTERS IN THE PHILIPPINES

BY MS ARLENE F. SISON

This analysis briefly reviews the challenges in the different disaster management stages (i.e. mitigation, preparedness, response and recovery) in the country and provides solutions and recommendations to address these. Statistics on typhoons — including estimated losses, damages, and disaster response budgets — were presented to illustrate the scale of the impact and assess whether budget allocations were sufficient to address such events. The impacts on fiscal sustainability have also been analyzed. Based on the review, it has been observed that funding inefficiencies and accessibility challenges have been some of the perennial problems. Unclear or overlapping mandates of agencies, and insufficient soft or hard infrastructure have also been noted. The parliament's role is to investigate the reasons behind these issues and the actions taken to address them. Aside from exercising its oversight functions, the legislature's policy making capacity is also necessary in pursuing the necessary reforms toward addressing the problems. Continuous capacity building activities of the local government units (LGUs) on disaster fund management and tracking their progress are necessary to address the funding issues. Clearer guidelines are also crucial to clarify the delineation of functions of concerned agencies. The gaps in infrastructure can be addressed through the inclusion of implementation ready projects in the budget. The impacts on the debt to gross domestic product (GDP) ratio were also estimated based on various economic shocks using the International Monetary Fund (IMF) stress test model. The IMF model is an excel template that is based on the interplays among the different macroeconomic variables. Based on the analysis, the highest projected debt ratio is the combined shock with a debt ratio of 64.1 percent. The combined shock is a combination of the contingent liability, primary balance, growth, and interest rate shocks. Meanwhile, the impacts of contingent liabilities posed by natural disasters on the deficit were estimated based on the formula definition of the variables (e.g. of deficit and net financing). If additional disaster spending is treated as non-budgetary, i.e., it is not programmed into the budget, it is estimated that the deficit to GDP ratio would increase annually by 0.1 ppt. The disaster management challenges facing the country, along with the estimated fiscal impacts of typhoons, present risks to sustainable development and national progress. By addressing and managing them effectively, through the collective efforts of the different branches of the government, the private sector, the civil society organizations (CSOs), and the individual citizens, the country can make further development toward achieving the sustainable development goals (SDGs).

ENHANCING CLIMATE FINANCE IN INDONESIA: STRENGTHENING BUDGET TAGGING FOR CLIMATE ACTION

BY MS MARIHOT NASUTION AND MR RIZA ADITYA SYAFRI

Indonesia has committed to reducing greenhouse gas (GHG) emissions by 31.89% unconditionally and up to 43.02% with international support by 2030. To support these climate ambitions, the government introduced the Climate Budget Tagging (CBT) system in 2014 to track climate-related expenditures in the national budget. While CBT has expanded from six to 14 ministries and agencies, its effectiveness remains constrained by inconsistent funding, limited technical capacity, and fragmented data systems. Between 2016 and 2023, climate-tagged allocations averaged just 3.2% of total state expenditure, with adaptation programs persistently underfunded. Moreover, manual tagging, lack of automation, and poor integration between budget systems (KRISNA, SAKTI) and climate data platforms (AKSARA, SRN) impede the system's capacity to measure outcomes and promote accountability.

Despite efforts to align budget planning with national climate strategies—including the Enhanced NDC, LCDI, and LTS-LCCR 2050—significant financing gaps persist. Government allocations have covered only 12.4% of the annual mitigation funding needs identified in Indonesia's climate roadmap. Additionally, discrepancies between CBT figures and mitigation finance data from other institutions point to potential overstatements in climate reporting, raising concerns about credibility and greenwashing.

Regional Climate Budget Tagging (RCBT), piloted in 11 local governments,[2] remains nascent at the subnational level. Climate-related budget allocations in these regions ranged from 0% to 6.4%, hindered by the absence of a legal mandate, reliance on manual processes, and low institutional capacity. Coordination challenges between the Ministry of Finance and Home Affairs further limit uptake. Nonetheless, local governments have demonstrated a growing commitment, formulating over 9,000 climate action plans from 2019 to 2022. Yet without robust evaluation and funding mechanisms, these efforts risk falling short.

Climate-responsive fiscal transfers—such as Dana Alokasi Khusus (DAK/Special Allocation Funds) and Dana Bagi Hasil – Dana Reboisasi (DBH-DR/Revenue Sharing Funds - Reforestation Fund)—offer promise in channelling funds for subnational climate actions. However, these mechanisms require more targeted audits, improved reporting, and more substantial alignment with national climate objectives.

To close the climate finance gap, Indonesia must enhance the integration of financial and climate information systems, develop clear regulatory mandates for subnational tagging, and build technical capacity across all levels of government. These measures are vital for ensuring efficient, transparent allocation of climate funds and supporting a just and accountable transition toward a low-carbon, climate-resilient economy.

2 Initially, 23 local governments were involved, but only 11 produced their climate budget tagging reports.

ACCELERATING INDONESIA'S ENERGY TRANSITION: THE CRITICAL ROLE OF PARLIAMENT IN CLIMATE ACTION

BY DR ARI MULIANTA GINTING AND MS VENTI EKA SATYA

Climate change poses severe threats to Indonesia, including rising sea levels, extreme weather events, and economic disruptions, disproportionately affecting vulnerable communities. As the world's seventh-largest greenhouse gas emitter, Indonesia's heavy reliance on coal and slow renewable energy transition exacerbate these challenges. Despite commitments like the Just Energy Transition Partnership and a net-zero emissions target by 2060, progress remains hindered by financial constraints, regulatory gaps, and infrastructural limitations. The Indonesian Parliament plays a pivotal role in accelerating climate action through legislative and policy interventions. Key priorities include enacting the Renewable Energy Bill to provide a clear regulatory framework, establishing carbon pricing mechanisms (carbon trade and tax), and reallocating fossil fuel subsidies to renewable energy projects, and revising the Law on Climate Change. Additionally, Parliament must ensure a just transition by safeguarding affected workers through reskilling programs and social protection. Strengthening oversight of carbon markets and integrating climate resilience into national policies are critical for aligning Indonesia with global climate goals. By advancing strong legislation—such as a revised Law on Climate Change and the new EBET Bill—promoting green investment, and supporting equitable development, Parliament can help drive Indonesia's shift toward a sustainable, low-carbon economy. Swift action may be critical to reduce climate risks, strengthen energy security, and ensure long-term socio-economic stability.

In terms of oversight and budgeting, the Indonesian House of Representatives needs to continue to monitor the carbon trading mechanism and the preparation of the carbon tax roadmap, this is important to ensure that the carbon trading and taxes imposed do not have a negative impact on the related industry in addition to increasing fiscal revenue.

THE INTEGRATION OF CLIMATE FINANCE INTO CAMBODIA'S BUDGET FRAMEWORK

BY MS CHENDA MOM, MS SOPHEARA SIN AND MR THEA CHAMROEUN

This analysis explores Cambodia's efforts to integrate climate finance into its national budgetary framework. As a climate-vulnerable country, Cambodia has advanced key policy instruments and institutions to manage climate finance, including the Cambodia Climate Change Strategic Plan (CCCSP), updated Nationally Determined Contributions (NDCs), and the Climate Public Expenditure Review (CPER). Climate-related public expenditure reached 2.1% of GDP in 2023, with increasing domestic contributions, yet challenges remain in funding allocation, institutional coordination, and performance tracking. The research finds that while adaptation dominates budget priorities (97% in 2023), mitigation remains underfunded, and social sectors receive minimal support. A case study of sub-national budget allocation reveals uneven implementation and insufficient support for local climate resilience, especially among vulnerable rural communities. The findings highlight the need for balanced investment, improved monitoring, and greater

inclusion of local governments in climate planning and finance management. Given these challenges, the study underscores the important role of the Cambodian Parliament—particularly the Senate—in addressing policy-to-practice gaps. Through its legislative, oversight, and representative functions, the Senate can help ensure climate finance is more accountable, inclusive, and responsive to national and local needs.

STRENGTHENING PARLIAMENTARY ENGAGEMENT WITH CAMBODIA'S LTS4CN

BY MR SUONVISAL SETH, MR BUNHAV LONG AND MS SEAVMEY SONG

Cambodia's Long-Term Strategy for Carbon Neutrality (LTS4CN) provides a comprehensive roadmap to achieve net-zero greenhouse gas emissions by 2050. It aligns with Cambodia's Updated Nationally Determined Contribution (NDC) under the Paris Agreement and outlines economy-wide mitigation measures while promoting sustainable development. LTS4CN prioritizes sectoral actions across forestry, energy, agriculture, industry, and waste management. It integrates emissions reduction, adaptation, and resilience goals, establishing emission baselines and targets under both Business-As-Usual (BAU) and low-carbon scenarios. Notably, the strategy aims to transform Cambodia into a carbon sink, with the AFOLU sector offsetting remaining emissions.

Beyond its environmental ambition, LTS4CN offers substantial co-benefits. The strategy is projected to deliver over $4 billion in net economic gains and avoid up to $8.3 billion in climate-induced GDP losses by 2050. It can catalyze $18.6 billion in investment, generate 157,000 green jobs, and yield nearly $7 billion in wider social and environmental benefits, including improved health, biodiversity conservation, gender-responsive adaptation, and climate resilience. These outcomes demonstrate LTS4CN's potential to drive inclusive, low-emission development.

Parliamentary engagement is crucial to realizing the LTS4CN vision. The National Assembly of Cambodia would play a transformative role through its legislative, budgetary, and oversight functions. By embedding climate targets into laws, aligning budgets with green investments, monitoring implementation, and convening inclusive dialogues, parliamentarians can ensure national climate ambition translates into accountable action. Strengthening parliamentary leadership will be key to institutionalizing Cambodia's carbon neutrality agenda and ensuring a just and resilient transition.

ADVANCING THAILAND'S CLIMATE COMMITMENTS THROUGH BUDGET TAGGING: A POLICY PROPOSAL

MR PHUBET SENBUT, MR PANUPONG PHECTSUWAN, AND MS BOONWISA CHAIYARATANA

Climate Budget Tagging (CBT) presents a vital governance mechanism for Thailand, which faces severe climate vulnerability as the 30th most at-risk country globally. This paper analyzes Thailand's significant climate threats: rising temperatures projected to increase by up to 3.8°C by 2099, extreme weather events like the 2024 floods affecting 47 provinces, coastal inundation threatening 12 million Bangkok residents, and

agricultural decline including projected 5.3% reduction in rice yields. These challenges could reduce Thailand's economic growth by 6.7% by 2050, resulting in $220 billion in losses. Despite Thailand's ambitious climate commitments, including 30-40% emissions reduction by 2030, the document identifies three critical finance governance failures: severe underfunding (environmental protection receives just 0.36% of the national budget), high volatility (22.36% coefficient of variation), and systemic opacity (climate expenditures fragmented across 17 ministries with no unified tracking). These deficiencies create a causal chain that impedes NDC implementation and limits access to international climate finance. The paper advocates for implementing CBT as a targeted institutional fix, drawing on successful models from Indonesia, the Philippines, Nepal, and Bangladesh. Recommendations include developing a Thailand-specific CBT methodology, implementing through a phased approach starting with key ministries, building institutional capacity, integrating with existing financial systems, publishing annual climate budget statements, and strengthening cross-ministerial coordination. By systematically identifying and tracking climate expenditures, Thailand can enhance transparency, improve resource allocation, strengthen international climate finance access, and ultimately build greater climate resilience.

Valenzuela Solar Farm, Metro Manilla, Philippines (Photo : Lisa Marie David/IMF, April 2021)

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ABSTRACT

This brief provides an analysis of the Philippine government's climate change expenditures from 2019 to 2023, with a focus on alignment with the National Climate Change Action Plan (NCCAP). Following the enactment of the Climate Change Act in 2009 and the institutionalization of the Climate Change Expenditure Tagging (CCET) system in 2015, national budget allocations for climate-related activities have significantly increased. The proposed 2025 climate budget exceeds PhP1 trillion, reflecting both expanded agency participation and enhanced tagging processes. Despite this upward trend, actual disbursement has been inconsistent, with notable underutilization during the COVID-19 years and over-expenditure in 2022–2023 due to carryover obligations. The majority of climate expenditures are concentrated in Water Sufficiency and Sustainable Energy priorities, primarily through large-scale infrastructure projects such as flood control and urban transit systems, most of which are centered in Metro Manila and Luzon. This geographic and typological concentration raises concerns about equity and alignment with NCCAP's broader goals, including the enhanced adaptive capacity and resiliency of communities to climate change. Projects funded by Official Development Assistance (ODA) demonstrate better monitoring, suggesting a need for improved oversight in General Appropriations Act (GAA)-funded initiatives. The report underscores the urgent need for updated monitoring and evaluation frameworks, as the latest published M&E report from the Climate Change Commission only covers up to 2016. Recommendations include reassessing expenditure allocations, enhancing institutional capacity, and expanding impact assessments to ensure more balanced, inclusive, and effective climate action across the country, especially in underserved regions such as Visayas and Mindanao.

INTRODUCTION

The Philippines is one of the most vulnerable countries to weather-related events driven by climate change, posing risks to people's lives, livelihood, food security, and properties [1]. To address these challenges, the national government (NG) enacted the Climate Change Act (CCA) in 2009, mandating the integration of climate change into government policies formulation, and to establish the Climate Change Commission (CCC) [2]. As required by the CCA, the National Framework Strategy on Climate Change (NFSCC) was adopted in April 2010, and the National Climate Change Action Plan (NCCAP) was

formulated, outlining the country's agenda on climate change from 2011 to 2028 [3]. In 2013, the Joint Memorandum Circular (JMC) No. 2013-01 was issued by the National Disaster Risk Reduction and Management Council (NDRRMC), Department of Budget and Management (DBM) and the Department of Interior and Local Government (DILG), which served as a guideline to all concerned local and national government officials in the utilization of the Local Disaster Risk Reduction and Management Fund (LDRRMF) which marked the beginning of monitoring government expenditures for climate change mitigation.

The NCCAP serves as the baseline in designing national priority programs for adapting to and mitigating climate change, prioritizing vulnerable communities. It aims to enhance resilience, protect ecosystems, and ensure long-term sustainability through regular monitoring and evaluation. The plan focuses on seven key outcomes: food security, water sufficiency, ecological and environmental stability, human security, climate-friendly industries and services, sustainable energy, and knowledge and capacity development [4]. When Climate Change Expenditure Tagging (CCET) was implemented in 2015 as guided by DBM-CCC-DILG JMC 2015-01, the Philippine government integrated climate-related expenditures into its budgeting process. This standardized system, ensures that climate adaptation and mitigation actions are tracked across all budget levels and in line with the NCCAP.

The National Adaptation Plan (NAP) 2023-2050 and the Nationally-Determined Contribution Implementation Plan (NDC IP) have been developed and recently adopted to ensure that international commitments are met. These detailed roadmaps support the operationalization of the long-term strategies outlined in the NCCAP. The NAP establishes the country's adaptation priorities and serves as a guideline for adaptation efforts. Identified adaptation priority sectors particularly agriculture, fisheries, food security, water resources, health, and ecosystems and biodiversity. In comparison, the NDC IP focuses on mitigation efforts and outlines policies and measures to meet the Philippines' NDC. The NDC IP also acknowledges the importance of adaptation and capitalizing on the co-benefits of mitigation and adaptation measures. Together, these roadmaps with the CCET are meant to strengthen the Philippines' climate resilience by enhancing financial tracking, policy coherence, and strategic investment in climate adaptation and mitigation efforts.

PUBLIC CLIMATE CHANGE EXPENDITURE (GAA-FUNDED)

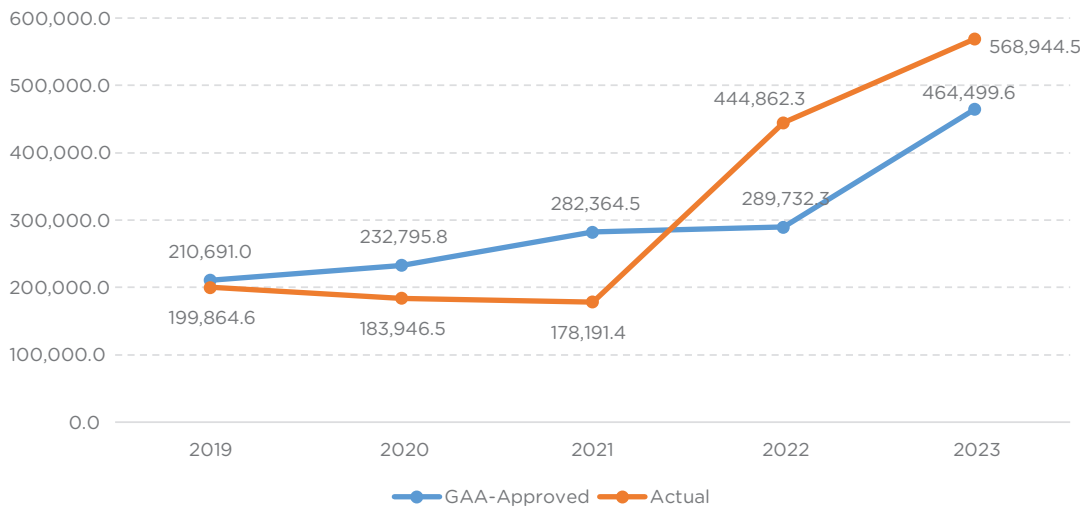
For the NCCAP to be fully implemented and its target outcomes reached, the government utilizes both local and international sources of funding. One of the government's sources of funds is the Official Development Aid (ODA) received from its development partners. As of 2023, NEDA reports that P232.9 million of total ODA went to Climate Change Adaptation and Mitigation (CCAM) and Disaster Risk Reduction (DRR) initiatives [5]. Another source of international funding for country's climate action is the Green Climate Fund (GCF). Total GCF financing received by the Philippines amounts to USD 158.6 million with readiness support[3] of USD 2.7 million [6].

Aside from these external resources, the primary source of funding for climate-related expenditures is the NG annual budget otherwise known as the General Appropriations

3 Financial support for capacity building of developing countries to access and effectively manage GCF funds

Act (GAA). In the proposed 2025 budget, climate-related expenditure items for 2025 have risen to more than PhP1.0 trillion or more than double that of the approved 2024 CCET GAA level of P457.4 billion. While more climate-related expenditure items have been included in the budget, a part of this increase in CCET can be attributed to the enhancements in the tagging system that were applied in 2024 and the raised awareness for the need of climate action which led to higher involvement of NG agencies and their increased compliance of to the CCET[4]. The National CCET compliance table shows that from 96 compliant NGAs in 2023, the number has risen to 140 compliant NGAs in 2025.

Figure 1. Level of Climate Change Expenditure, GAA-Approved vs. Actual Spending, 2019-2023 (in million Pesos)



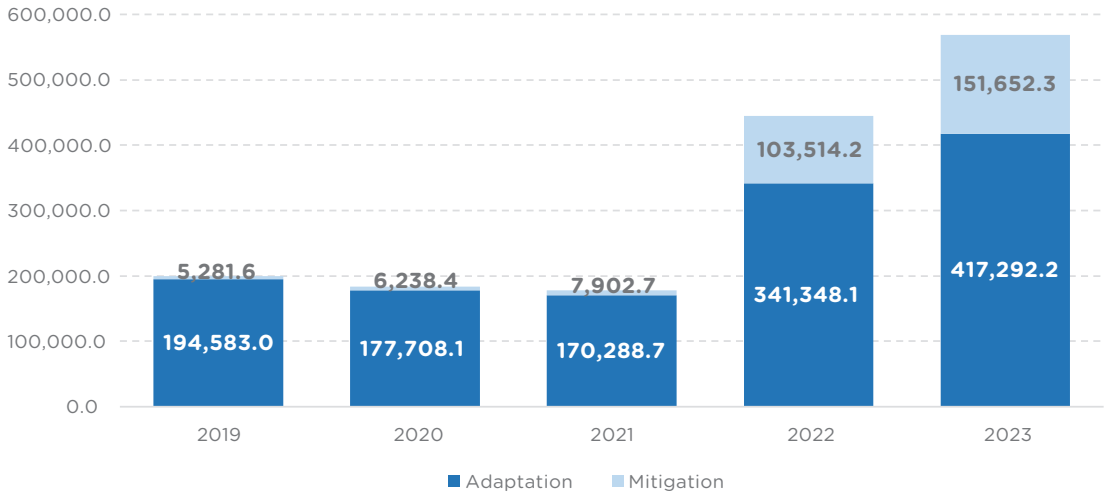
Source: Budget of Expenditures and Sources of Financing 2020-2025

In the years 2019 to 2023, GAA-approved CCET was already on an upward trend from PhP210.7 billion in 2019 to PhP464.5 billion in 2023 (Figure 1). In comparison, actual expenditures for climate-related were on a decline in the years 2019 to 2021 from P199.9 billion to PhP178.2 billion. Spending level in 2021 is less than half that of the approved funding levels. According to CCC and DBM, a possible reason for under-utilization is the reprioritization of funds towards COVID-19 response programs during the pandemic years. However, the CCC mentioned that there is still a need to examine the data to find out exactly which programs and projects were not funded for these years[5]. Level of actual expenditures started to spike in 2022 as it grew to PhP444.9 billion and surpassed the 2022 approved appropriations of PhP289.7 billion. This trend continued in 2023 as the actual expenditures exceeded approved levels by PhP104.4 billion. According to CCC[6], the reason for the over-utilization of funds in 2022 and 2023 was due to the continuing expenditures from previous years that were only obligated in either 2022 or 2023. Both CCC and DBM still lack the capacity to identify which of the CCET items were continuing expenditures funded from the GAA. While this is so, most of the items tagged for a current year were funded by the approved funding of the same year. This also means that the unutilized CCET budget for years 2019 to 2021 were possibly used in the subsequent budget years, which may result to the slight underreporting or bloating of utilization rates for these years.

4 Phone interview with CCC
5 Ibid.
6 Ibid.

Most of the NG's CCET items go to adaptation initiatives, particularly in years 2019 to 2021 where adaptation expenditures account for more than 95% (figure 2). Increased CCET spending in 2022 were mainly due to adaptation items and an increase in mitigation initiatives. Mitigation-related activities grew from 2022 to account for about one-fourth of the NG's actual climate spending.

Figure 2. Actual Climate Change Expenditure by Focal Area, 2019-2023 (in million Pesos)



Source: Budget of Expenditures and Sources of Financing 2020-2025

Part of the NG's climate adaptation initiatives is the People' Survival Fund (PSF) that was established in 2015 and allocated annually with P1 billion to support the local government units (LGUs) in funding and implementing their climate adaptation projects. However, since its inception through 2022, only six of 176 proposals were approved by the PSF board. Low approval rates were attributed to stringent documentary requirements resulting in 97 proposals failing to pass initial screening. PSF tried to address this by streamlining the application process and allocating 6% of the fund activities for the identification and development of the LGUs' proposed projects. Approved projects amount to PhP310.4 million with disbursement rate for the projects ranging from 15% to 90.7%[7] despite their approval before the pandemic [7]. Implementation delays were found to be due to delays in the downloading of funds and difficulties brought by the pandemic. Some of the projects were also damaged by the Super Typhoon Odette which resulted in unusable facilities and additional costs. From the six projects, a community-based ecological farming project was completed as of 2022. The project involved installing rainwater catchment facilities, solar-operated water pumps, a greenhouse , and the rehabilitation and development of water systems [8].

In terms of NGAs, the department that largely implements climate-related initiatives is the Department of Public Works and Highways (DPWH) with a total expenditure of PhP1.1 trillion from 2019 to 2023 or an average of 75.5% within these five years (Table 1). DPWH conducts all construction-related projects of the NG such as the construction of dams, roads, and bridges. The Department of Transportation (DOTr) which only started posting CCET items in 2022, shows an increase in climate spending and ranked next to DPWH in 2022 and 2023. DOTr is the department-in-charge in the establishment of public transportation such as railway systems. Together, both agencies already account

7 as of 2022

for 87.5% of the total recorded CCET from 2019. Meanwhile, tracked CCET funded through the Department of Agriculture (DA) decreased significantly from PhP23.7 billion in 2019 to PhP14.5 billion in 2023. The share of expenditures for DA was similarly reduced from 11.9% in 2019 to 2.6% in 2023. The highest expenditure of DA in 2019 was the concreting of a farm-to-market road in Basilan amounting to PhP9.3 billion. No expenditure was posted for the project after 2019. Lower spending for DA was also due to the reductionsfor the National Rice Program and the Philippine Rural Development Program. Other agencies that reported CCET spending in the millions are the Department of Environment and Natural Resources (DENR), Budgetary Support to the Government Corporations (BSGC), and Allocations to Local Government Units (ALGU).

Ariel View of Baguio, CAR, Philippines (Photo: M&W Studios, Dec 2020)

Table 1. Actual Climate Change Expenditure by Department, 2019-2023 (in million Pesos)

Department Name	2019		2020		2021		2022		2023		Total	
	Amount	% Shr	Amount	% Shr	Amount	% Shr	Amount	% Shr	Amount	% Shr	Amount	% Shr
DPWH	154,635.8	77.4	152,216.1	82.8	144,894.5	81.3	305,958.3	68.8	381,962.7	67.1	1,139,667.5	72.3
DOTr	-	-	-	-	-	-	95,389.3	21.4	143,334.7	25.2	238,724.0	15.1
DA	23,756.0	11.9	12,771.6	6.9	11,116.8	6.2	7,972.7	1.8	14,545.7	2.6	70,162.8	4.5
DENR	9,777.6	4.9	6,474.2	3.5	9,013.4	5.1	10,085.5	2.3	8,398.5	1.5	43,749.3	2.8
BSGC	5,095.0	2.5	5,275.9	2.9	4,272.5	2.4	10,234.6	2.3	8,196.8	1.4	33,074.9	2.1
ALGU	3,276.8	1.6	3,504.6	1.9	4,689.3	2.6	5,404.7	1.2	4,904.4	0.9	21,779.8	1.4
DAR	472.8	0.2	279.5	0.2	301.1	0.2	3,634.0	0.8	318.8	0.1	5,006.1	0.3
DOST	1,099.8	0.6	1,201.0	0.7	1,137.8	0.6	751.2	0.2	720.2	0.1	4,910.0	0.3
DSWD	-	-	-	-	1,598.7	0.9	1,633.5	0.4	1,630.9	0.3	4,863.1	0.3
DOE	223.3	0.1	121.9	0.1	639.4	0.4	849.5	0.2	884.2	0.2	2,718.3	0.2
All Other Departments	1,527.4	0.8	2,101.8	1.1	527.9	0.3	2,948.9	0.7	4,047.7	0.7	11,153.6	0.7
Total	**199,864.6**	**100.0**	**183,946.5**	**100.0**	**178,191.4**	**100.0**	**444,862.3**	**100.0**	**568,944.5**	**100.0**	**1,575,809.3**	**100.0**

Source: Budget of Expenditures and Sources of Financing 2020-2025

Out of the strategic priorities identified in the NCCAP, most resources went to Water Sufficiency as spending consistently increased from PhP119.7 billion in 2019 to PhP374.0 billion in 2023, reporting more than half of CCET spending in the specified period (Table 2). Most typology that posted high spending are climate adaptive initiatives under the Water Sufficiency priority (see Annex 1). Outcomes under Water Sufficiency include flood control, improved resilience of infrastructure from flood risks, and construction and expansion of the water supply in waterless communities. Expenditures towards flood control projects more than doubled in 2022 and peaked in 2023 at PhP262.2 billion. This trend is similarly seen in projects for improved resilience against flood risks while a more modest increase in spending can be observed for water supply provision with reported spending of PhP11.0 billion in 2023.

However, comparing this with the goals and outcomes outlined in the NCCAP under Water Sufficiency, the intermediate outcome covers the sustainable management and equitable access of water resources. Indicators also focus on reviewing of water resource management laws and streamlining of water government structure, assessment and improvement of water-supply systems, and increase in water supply coverage. Increased allocation towards flood control projects instead of programs addressing water management and scarcity suggest a disconnect between the NCCAP and the actual CCET spending.

Sustainable Energy is the strategic priority with the largest expenditures next to Water Sufficiency at PhP157.0 billion in 2023. Spending for this priority was fairly low in 2020 and 2021 but largely increased in 2022 and 2023. Together, Water Efficiency and Sustainable Energy expenditures already make up for 93.3% of CCET items in 2023. Funded ultimate outcomes under energy include urban traffic management and protection of transport infrastructure against extreme weather events. Actual expenditures for urban traffic management in particular went up from PhP456.5 million in 2021 to PhP94.9 billion in 2022, accounting for most of the sustainable energy in 2022. On the other hand, spending for other strategic priorities is lagging behind with their cumulative spend in 2023 only totaling PhP37.8 billion. Similar to Water Efficiency, the intermediate outcome under Sustainable Energy in the NCCAP puts emphasis on the adoption of sustainable and renewable energy and ecologically-efficient technologies. Outputs include the implementation of the Government Energy Management Program (GEMP), increased participation in energy efficiency and conservation, and adoption of an off-grid, decentralized community-based renewable energy system to generate affordable electricity.

Table 2. Actual Climate Change Expenditure by NCCAP Strategic Priority, 2019-2023 (in million Pesos)

Strategic Priorities	2019		2020		2021		2022		2023	
	Amount	% Share	Amount	% Share	Amount	% Share	Amount	% Share	Amount	% Share
Water Sufficiency	119,719.5	60.1	112,685.5	61.3	145,195.2	81.5	303,479.9	68.2	373,984.9	65.7
Sustainable Energy	31,642.9	15.9	8,457.7	4.6	5,098.7	2.9	103,965.1	23.4	157,094.8	27.6
Food Security	28,691.4	14.4	17,387.9	9.5	15,138.4	8.5	19,883.5	4.5	24,327.1	4.3
Climate Smart Industries and Services	3,095.3	1.6	37,700.7	20.5	4,098.8	2.3	6,547.2	1.5	5,619.0	1.0
Ecosystem and Environmental Stability	8,727.4	4.4	5,348.6	2.9	5,162.2	2.9	7,159.9	1.6	4,898.8	0.9
Knowledge and Capacity Development	985.7	0.5	1,131.8	0.6	1,145.6	0.6	1,459.7	0.3	1,526.9	0.3
Human Security	6,191.8	3.1	1,002.6	0.5	1,446.3	0.8	1,980.3	0.4	1,045.1	0.2
Cross-Cutting	42.3	0.0	231.8	0.1	906.2	0.5	386.6	0.1	448.0	0.1
Total	**199,096.3**	**100.0**	**183,946.5**	**100.0**	**178,191.4**	**100.0**	**444,862.3**	**100.0**	**568,944.5**	**100.0**

Source: Budget of Expenditures and Sources of Financing 2020-2025

The 2011-2016 monitoring and evaluation report on the NCCAP is the latest that was produced by the CCC. The recommendation for most strategic priorities is increased coordination and clear delineation of the management roles of the implementing agencies involved in the climate action initiatives for each thematic area. The main recommendation for Water Efficiency is the restructuring of water governance in order to more effectively implement adaptation actions related to the strategic priority. The study also found that the country is water-stressed due to low water availability per capita and water withdrawal to availability. Aside from Water Sufficiency, other strategic priorities such as Food Security and Ecosystem and Environmental Stability encountered difficulties in implementing adaptation action due to limited financial resources and a lack in institutional capacity [9].

Despite the recommendations of restructuring the water governance landscape or the need for increased water supply, climate-related funding for Water Sufficiency was mainly focused on flood control projects. Further examining the projects under this typology, it can be seen that six of ten projects are located in Metro Manila while three are in Luzon (Table 3). This leaves one project that is located in Visayas. The top ten projects already take up the 94.3% of total spending for flood control. These projects were all implemented by DPWH. On the other hand, the projects under the most-funded Mitigation typology, Urban Traffic Management, involve the construction of efficient public transport in major urban centers and improvement of the rail transit systems in the Greater Manila Area (Table 4). The top five projects that posted the highest total expenditure levels make up 97.8% of total expenditures for urban traffic management. Similar to the flood control projects, only the Davao Public Transport Modernization Study is located outside Luzon with total spending amounting to PhP2.3 billion.

Urban intersection, Taguig, NCR, Philippines (Photo: Trish Dijamco)

Table 3. Climate-Related Projects under Flood Control typology (Adaptation), 2019-2023 (in million Pesos)

Project or Activity Name	2019	2020	2021	2022	2023	Total
Pasig - Marikina River Channel Improvement Project, Phase V, Contract Package 9 - Construction of Malanday Pumping Station and Associated Works, Marikina City	-	-	-	82,177.5	114,089.7	196,267.2
Construction of Drainage System (Box Culvert) along Labores Street, Pandacan, Manila	-	-	-	61,532.1	68,593.7	130,125.8
Rehabilitation of Dike System along Cura - Labugaon River (Breached and Eroded Dike, Left and Right Bank) Laoag River Basin Flood Control and Sabo Project	-	-	-	42,635.1	67,591.7	110,226.7
Pasig - Marikina River Channel Improvement Project, Phase V, Contract Package 2 and 3 - River Improvement Works along Upper Marikina River (Upstream of Marikina Bridge)	-	-	58,131.7	1,949.5	-	60,081.3
Bank Improvement along Estero de Reina, Manila City	57,196.5	890.9	-	-	-	58,087.5
Construction/Rehabilitation of Bolo River Dam, Brgy. San Isidro, Dumalneg, Ilocos Norte	-	54,831.7	-	-	-	54,831.7
Rehabilitation/Restoration of Deteriorated Dikes/Eroded Riverbanks along Pampanga River including Candaba Cut-off Channel, Candaba, Pampanga	-	-	22,882.3	914.9	-	23,797.2
Construction of Slope Protection along Zapote River (Upstream), Las Piñas City	21,408.7	429.7	-	-	-	21,838.4
Construction of Flood Control Structures of Himoga-an River along Bacolod North Road, Sagay City, Negros Occidental	-	16,593.2	-	-	-	16,593.2
Pasig - Marikina River Channel Improvement Project, Phase IV	-	-	-	4,445.3	3,810.5	8,255.7
All Other Projects or Activities	13,627.0	263.5	8,396.9	11,062.8	8,137.1	41,487.3
Total	**92,232.3**	**73,009.1**	**89,410.9**	**204,717.1**	**262,222.6**	**721,591.9**

Source: Climate Change Commission CCET data 2019-2023

Table 4. Climate-Related Projects under Urban Traffic Management typology (Mitigation), 2019-2023 (in million Pesos)

Project or Activity Name	2019	2020	2021	2022	2023	Total
North-South Commuter Railway (NSCR) System	-	-	-	54,198.9	99,406.6	153,605.4
Metro Manila Subway Project (MMSP) Phase I	-	-	-	31,618.9	32,990.8	64,609.7
Light Rail Transit (LRT) Line 1 Cavite Extension Project	-	-	-	4,012.3	2,268.4	6,280.7
Metro Rail Transit (MRT) Line 3 Rehabilitation Project	-	-	-	2,128.3	3,126.6	5,254.9
Davao Public Transport Modernization Study (High Priority Bus System)	-	-	-	-	2,259.6	2,259.6
All Other Projects or Activities	367.4	291.2	456.5	94,858.4	141,319.3	237,292.8
Total	**367.4**	**291.2**	**456.5**	**94,858.4**	**141,319.3**	**237,292.8**

Source: Climate Change Commission CCET data 2019-2023

According to the DPWH website[8], the construction of the Malanday pumping station under the Pasig-Marikina Channel Improvement Project was approved in GAA 2017 and was 95.34% completed as of September 2022. Although funding was available from 2017 for this phase of the project, actual spending was only posted in CCET for 2022 and 2023. This is the same for the other flood control projects listed on the DPWH website. The river improvement works along upper Marikina River was similarly allocated with funds in the GAA 2017 with a status of 91.37% completed as of February 2023, while spending was only seen in 2021 and 2022. Meanwhile, the rehabilitation of the dike system along the Cura-Labugaon River was reported completed in November 2020 while spending was recorded in CCET only for years 2022 and 2023.

In contrast, projects funded with ODA counterparts have better monitoring reports compared to projects that are fully supported by regular GAA funding. Aside from the ODA portfolio review reported by NEDA which includes the projects' implementation status, the DOTr also uploads social and environmental monitoring documents for its

8 www.dpwh.gov.ph/dpwh/projects/infrastructure

railway projects. Some projects under Urban Traffic Mitigation such as components of the NSCR project, the MMSP, and the Davao Public Transport Modernization Project were found to be behind their implementation schedules due to delays in land acquisition, procurement, and right-of-way acquisition [5].

KEY TAKEAWAYS AND RECOMMENDATIONS

The Climate Change Act was passed to address the impacts of climate change and to mainstream climate action in the Philippines. Through the NFSC and the NCCAP, the government is guided in its goal to build resilience for vulnerable communities by tackling the action plan's key priority areas. The CCET was also institutionalized to ensure that climate-related expenditures are systematically tracked and aligned with the NCCAP for effective policy implementation. Through the CCET, it was found that the government's climate-related appropriations went up to a proposed PhP1.0 trillion for 2025. A part of this increase, however, may be due to the heightened compliance of NGAs or the continued enhancement of the CCET which are welcome improvements to the monitoring of the country's public climate finance.

Examining the projects funded by CCET, it was seen that most of the spending largely went to two strategic priorities – Water Sufficiency and Sustainable Energy. In particular, typologies or ultimate outcomes on flood control and urban traffic management account for the bulk of climate-related spending from 2019 to 2025. Top flood control and urban traffic management projects are also mostly located in the Greater Manila Area or Luzon Island. While Metro Manila is highly susceptible to flooding, there may be a need to reassess the prioritization for the funding of climate-related projects to ensure that other vulnerable localities that lack resources for these projects are not overlooked, particularly those in Visayas and Mindanao. There may be a need to revisit the allocation for climate-related initiatives to also guarantee that these funded activities are aligned with the target outcomes outlined in the NCCAP. This can be done through committee hearings in aid of legislation through the Committee on Climate Change or through budget oversight hearings by the Appropriations Committee. Meanwhile, the Public Investment Program from 2023 to 2028 amounts to a total of PhP95.8 billion for climate action and disaster resilience with the highest allocation programs lodged under the DENR. Related congressional committees can ensure that these planned climate expenditures will be carried to completion.

There is an urgent need for updated monitoring and evaluation frameworks for the country's climate change initiatives, especially because the latest M&E report only covers the years 2011 to 2016. The recent performance audit report of the Commission on Audit (COA) (2024) on the NCCAP highlighted the importance of monitoring and evaluation systems to improve the prioritization of CCAM projects. COA identified the need for performance baseline indicators and targets to assess the country's progress in implementing its climate action initiatives. The CCC recognizes the significant gap in impact assessment for the country's climate change projects and is collaborating with Congress to secure funding for regular evaluations of CCET items. Additionally, it is focused on enhancing the CCET system and strengthening capacity-building efforts for monitoring and evaluation[9].

9 Phone Interview with CCC

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ANNEX 1

ACTUAL CLIMATE CHANGE EXPENDITURE BY TYPOLOGY, 2019-2023 (IN MILLION PESOS)

Particular	Focus Area	Strategic Priority	Instrument	2019	2020	2021	2022	2023
Incorporate climate change and climate variability in design standards for flood control and drainage systems	Adaptation	Water Sufficiency	Action Delivery	92,232.3	73,009.1	89,410.9	204,717.1	262,222.6
Department of Public Works and Highways (DPWH)				91,945.2	72,745.6	89,147.2	204,717.1	261,938.8
Allocations to Local Government Units (ALGU)				287.1	263.5	263.7	-	283.8
State Universities and Colleges (SUCs)				-	-	-	-	-
Urban traffic management (e.g. improve traffic flow) to reduce GHG emissions per unit transported	Mitigation	Sustainable Energy	Action Delivery	367.4	291.2	456.5	94,858.4	141,319.3
Department of Transportation (DOTr)				-	-	-	94,206.9	141,032.2
Allocations to Local Government Units (ALGU)				367.4	291.2	456.5	645.2	286.2
Department of Tourism (DOT)				-	-	-	-	0.8
Budgetary Support to Government Corporations (BSGC)				-	-	-	6.3	-

Particular	Focus Area	Strategic Priority	Instrument	2019	2020	2021	2022	2023
Improve resilience of infrastructure (bridges, water supply, community infrastructure, water storage, coastal defense, etc.) to account for climate change and climate variability related extreme weather and climate variability that could increase flood risks in infrastructure	Adaptation	Water Sufficiency	Action Delivery	24,385.8	38,365.4	53,390.0	91,187.6	97,953.8
Department of Public Works and Highways (DPWH)				23,295.9	37,707.3	51,928.4	89,778.5	96,094.9
Allocations to Local Government Units (ALGU)				1,089.8	658.2	1,461.6	1,372.9	1,858.9
State Universities and Colleges (SUCs)				-	-	-	32.7	-
Department of Science and Technology (DOST)				-	-	-	3.5	-
Construct new and expand existing water supply infrastructures for waterless communities	Adaptation	Water Sufficiency	Action Delivery	2,101.2	-	17.0	4,380.5	11,041.3
Department of Public Works and Highways (DPWH)				2,101.2	-	17.0	4,370.5	11,041.3
State Universities and Colleges (SUCs)				-	-	-	10.0	-
Protect transport infrastructure against extreme weather events (especially floods and storms) becoming more frequent and violent due to climate change and climate variability	Adaptation	Sustainable Energy	Action Delivery	-	-	-	4,213.6	10,307.4

Particular	Focus Area	Strategic Priority	Instrument	2019	2020	2021	2022	2023
Department of Public Works and Highways (DPWH)				-	-	-	4,213.6	8,995.9
Department of Transportation (DOTr)				-	-	-	-	1,311.5
Incorporate climate change and climate variability considerations in agricultural production and distribution systems (including irrigation) policies and planning	Adaptation	Food Security	Policy and Governance	12,465.6	8,165.5	2,584.0	2,281.1	6,226.8
Department of Agriculture (DA)				12,366.4	8,165.5	2,584.0	2,277.5	6,205.7
Department of Science and Technology (DOST)				99.2	-	-	3.6	14.0
Department of Agrarian Reform (DAR)				-	-	-	-	4.1
Department of Social Welfare and Development (DSWD)				-	-	-	-	3.0
Department of National Defense (DND)				-	-	-	-	0.0
State Universities and Colleges (SUCs)				-	-	-	-	0.0
All Other Activities				68,312.2	64,115.4	32,333.0	43,223.9	39,873.3
Total				**199,864.6**	**183,946.5**	**178,191.4**	**444,862.3**	**568,944.5**

Source: Climate Change Commission CCET data 2019-2023

Destruction caused by Typhoon Haiyan, Tacloban, Philippines (Photo: Henry Donati/Department for International Development, November 2013)

2

NAVIGATING THE STORM: CHALLENGES AND FISCAL IMPACTS OF NATURAL DISASTERS IN THE PHILIPPINES

BY MS ARLENE F. SISON

ABSTRACT

This study will briefly review the challenges in the different disaster management stages (i.e. mitigation, preparedness, response and recovery) in the country and provide solutions and recommendations to address these. Some statistics on typhoons including the estimated amounts of loss and damages and the budgets allocated to disasters will be presented to know the magnitudes of the damages and budget cover of these events. Likewise, a brief review of some key disaster risk financing mechanisms will be presented and how these contribute to the resilience of the local government units (LGUs). The impacts on fiscal sustainability will also be briefly analyzed. Based on the review, it has been observed that funding inefficiencies and accessibility challenges have been some of the perennial problems. Unclear or overlapping mandates of agencies, and insufficient soft or hard infrastructures have also been noted. The parliament's roles are to investigate the reasons behind these issues and the actions taken to address them. Aside from exercising its oversight functions, the legislature's policy-making capacity is also necessary in pursuing the necessary reforms toward addressing the problems. Continuous capacity building activities of the LGUs on disaster fund management and tracking their progress are necessary to address the funding issues. Clearer guidelines are also crucial to clarify the delineation of functions of concerned agencies. The gaps in infrastructure can be addressed through the inclusion of implementation ready projects in the budget. The impacts on the debt-to- gross domestic product (GDP) ratio were also estimated based on various economic shocks using the International Monetary Fund (IMF) stress test model. The IMF model is an excel template that is based on the interplays among the different macroeconomic variables. Based on the analysis, the highest projected debt ratio in 2025 is the combined shock with a debt ratio of 64.1 percent. The combined shock is a combination of the contingent liability, primary balance, growth, and interest rate shocks. Meanwhile, the impacts of contingent liabilities posed by natural disasters on the deficit were estimated based on the formula definition of the variables (e.g. of deficit and net financing). If an additional disaster spending is treated as non-budgetary, i.e., it is not programmed into the budget, it is estimated that the deficit to GDP ratio would increase annually by 0.1 ppt. The disaster management challenges facing the country, along with the estimated fiscal impacts of typhoons, present risks to sustainable development and national progress. By addressing and managing them effectively, through the collective efforts of the different branches of the government, the

private sector, civil society organizations (CSOs), and individual citizens, the country can make further development toward achieving the sustainable development goals (SDGs).

INTRODUCTION

Climate change distresses all countries in the world and is hampering progress towards achieving the 2030 Agenda for Sustainable Development. According to the Sustainable Development Goals Report 2024 which was based on the latest available data (as of June 2024) on selected indicators in the global indicator framework, "current progress falls far short of what is required to meet the SDGs." The report attributed this to the "lingering impacts of the COVID-19 pandemic, escalating conflicts, geopolitical tensions, and growing climate chaos" [1]. Scientific evidence shows a link between greenhouse gases and climate change, indicating a connection between the rising frequency of natural disasters and human-made emissions of greenhouse gases in the atmosphere [2]. According to the latest World Risk Index (2024), the Philippines has the highest disaster risk out of 193 countries assessed [3]. The country is located along the typhoon belt in the Pacific; hence, it is visited by an average of twenty typhoons every year, a quarter of which are destructive [4]. It is undeniable that the impacts of climate change are felt by all its residents in various forms such as loss and damages in lives and properties respectively.

Everybody including private organizations and government agencies have various roles to play in every stage of disaster management. Agencies are involved with different roles such as planning, mitigation, recovery, data analysis, among other functions. It is important to identify these challenges and provide solutions in order to attain the sustainable development goals as well as better the lives of the Filipinos. For instance, despite the huge budgets being provided for the different programs,[10] the issue of flooding remains.[11] The other challenges are "funding gaps, ad hoc management and arrangements, as well as protracted periods of implementation of projects particularly for post disaster recovery and reconstruction." The inefficiency in the funding and implementation mechanisms are due to the inadequate and ineffective disaster risk financing and insurance (DRFI) tools, coupled with obstacles or delays in the movement of funds and budget execution [5].

Contingent liabilities (CLs) are potential obligations that may arise from past events or future uncertainties. CLs associated with typhoons are both explicit and implicit wherein (1) there is a legal or contractual requirement (i.e. budget cover), or (2) where there are moral obligations arising from unexpected and uncertain circumstances (i.e. for response and recovery), respectively. As identified earlier, insufficient funding could halt planning and implementation of crucial activities. It could also put a strain on the budget and may force the government to borrow to finance the shortfall.

There are various funding sources or risk financing mechanisms for disasters in the country and they are categorized according to when they are mobilized. Ex ante risk financing which refers to financial instruments put in place before the occurrence of a disaster is being used to transfer the risks or financial consequences of a disaster to a third party (e.g. "insurance", "catastrophe bonds"). At the same time, it is also being used to retain the risks by reserving government funds for disaster to assume losses (e.g. "contingency budget lines" and "reserves"). On the other hand, some examples of ex post risk financing

10 Based on the GAA 2022-2025, flood management programs increased by an average of 34.2 percent for the period 2022-2024 and shared 23.7 percent of the total operations of the Department of Public Works and Highways (DPWH) in 2025 [7]. For 2025, the program was allotted only with a slight increase of 1.4 percent.

11 Improvements have been noted particularly in Metro Manila but challenges remain [8].

include “grants”, “emergency assistance loans”, “project and sector loans” and “ex-post budget reallocations and borrowing”. The latter are financing programs put up or availed by government after the disaster strikes [6]. In the Philippines, the well-known types of ex ante risk financing are the National Disaster Risk Reduction and Management Fund (NDRRMF) or the calamity fund which is an annual allocation in the National Budget earmarked for aid, relief, and rehabilitation services to communities/areas and repair and reconstruction of permanent structures affected by human-induced and natural calamities and the local disaster risk reduction and management fund (LDRRMF)[12] which are intended for LGUs to support various disaster risk management activities. An example of an ex post disaster risk financing is the Catastrophe Deferred Drawdown Option (Cat DDO)[13] and government borrowings from foreign and domestic creditors. Other risk financing mechanisms for disasters include bonds, loans and insurance facility programs.[14]

CLs brought by natural disasters may pose a threat to fiscal sustainability especially if not considered in the budget. Based on processed data from the situational reports of the National Disaster Risk Reduction and Management Council (NDRRMC), on the average, for the period 2019-2024, meteorological events including typhoons had an estimated loss and damage amounting to PhP35.3 billion [11]. They are considered fiscal risks that should be disclosed, managed, and mitigated. It is important to assess the fiscal impacts of climate change (i.e. natural disasters) for policy planning, analysis and formulation. On the average, the calamity fund amounted to an average of PhP19.5 billion for the same period based on the General Appropriations Act (GAA) [12].

The fiscal risks brought by natural disasters can be minimized if they are properly accounted for in government policies, planning, and public finance frameworks. Governments can manage “fiscal risks” by including these liabilities in the fiscal analysis, by incorporating the costs of contingent liabilities into policy decisions, budget formulation, financial planning, reporting practices, and auditing processes, and by enhancing institutional capabilities to assess, regulate, manage, and mitigate financial risks across both public and private sectors [13]. In the Philippines, mechanisms are in place to disclose, mitigate, and manage contingent liabilities[15] through established policies and practices.

While financing for calamities in the Philippines is included in the budget, sometimes they are not sufficient especially when sudden disasters occur (e.g. the COVID-19 pandemic). Meanwhile, to cover financing for specific purposes such as principal amortization of government debts (i.e. contributions to the bond sinking fund), among others, non-budgetary accounts which are all off-budget represent collections from non-income sources authorized by law [14]. While these off-budget accounts have no impacts on the fiscal position, they are technically included in the accounting framework.

This study will review the issues and challenges on disaster mitigation, preparedness, response, and recovery, and propose solutions and recommendations. It will also analyze the impacts of contingent liabilities posed by natural disasters on the government

12 More detailed discussions are provided in Section IV.

13 This a financial instrument offered by the World Bank that can be tapped after a declaration of a state of calamity to support relief, recovery, and reconstruction efforts.

14 In November 2019, the Philippines successfully launched its Cat Bond to offer extra financial security against rare but intense typhoons and earthquakes. The bond was designed to provide coverage of up to US$75 million for earthquakes and US$150 million for typhoons, with protection spanning from November 2019 to November 2022 [9]. The Philippine Crop Insurance Corporation (PCIC) under the Department of Agriculture also offers insurance protection to farmers due to losses from natural calamities such as typhoons [10].

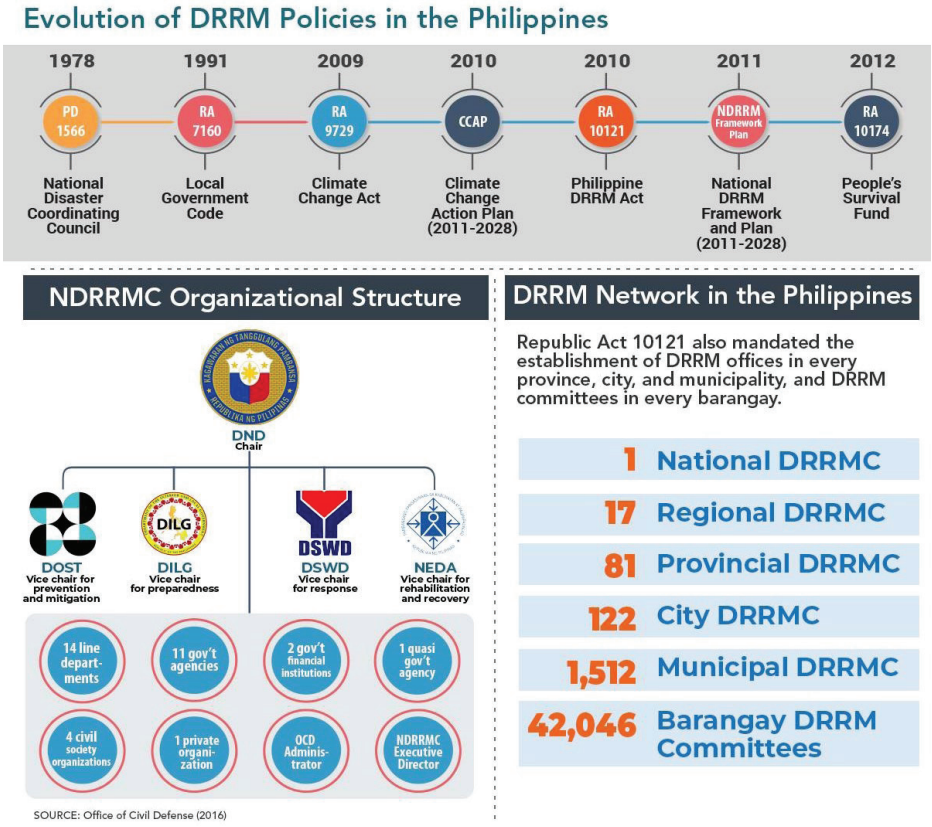
15 Other contingent liabilities include, legal claims against the government, government obligations arising from public private partnership contracts, guaranteed government debts, government insurance, among others.

debt and deficit by using the IMF Stress test template and by estimating through the defined fiscal accounts formula. It is hoped that the succeeding discussions on disaster management can jump start discussions on how to solve the different issues and challenges in disaster management hampering the growth of the country. Meanwhile, assessing the fiscal impacts of natural disasters will help in analyzing whether the budgets covering these are fiscally responsible and sustainable and the impacts on the fiscal position are significant.

OVERVIEW OF DISASTER RISKREDUCTION AND MANAGEMENT

Disaster risk reduction and management (DRRM) in the Philippines is governed by a series of laws and policies (Figure 1), beginning as early as 1978 with the establishment of the National Disaster Coordinating Council (NDCC) under Presidential Decree No. 1566. It was replaced by the National Disaster Risk Reduction and Management Council (NDRRMC) created by virtue of the Philippine Disaster Risk Reduction and Management Act or R.A. Number 10121 enacted in 2010. It is chaired by the Secretary of the Department of National Defense. The overarching plan for the sector is the National Disaster Risk Reduction Management Framework and Plan. Other laws governing the sector are the Local Government Code of 1991 or R.A. 7160, and the Climate Change Act or R.A. 9729 enacted in 2009 [15]. Meanwhile, the Climate Change Action Plan assesses the situation of the country about climate change risk and outlines its directions on climate change [16]. The People's Survival Fund (PSF) was established in 2012 through Republic Act No. 10174, which amended the Climate Change Act. The government allocates PhP1 billion annually to the PSF under the General Appropriations Act. The PSF is an additional fund for local governments and community organizations intended for long term climate change impact planning and adaptation. The fund is overseen by a board chaired by the Department of Finance (DOF) [17].

Figure 1. Evolution of DRRM Policies and Organizational Structure



Source of the chart: Philippine Institute for Development Studies (30 July 2018). Policy Issue at a Glance: Disaster Risk Reduction and Management in the Philippines. Infographic based on PIDS Discussion Paper 2017-50 titled "Institutional Issues on Disaster Risk Reduction and Management" by Dr. Sonny N. Domingo.

Note: NEDA was reorganized into the Department of Economy, Planning, and Development (DEPDev) through R.A. 12145 enacted on 10 April 2025.

Disaster management in the country is governed by a broad legal framework that requires coordination between national and local governments, incorporation of disaster risk reduction into development processes, and specific measures to safeguard vulnerable populations. Republic Act (R.A.) No. 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010 is the main law that provides the framework for disaster management focusing on disaster preparedness, prevention, mitigation, and response. The NDRRMC is the main body in charge of various functions including policymaking, coordinating, among others pertaining to disasters in the country. At the local government level, the Local Disaster Risk Reduction and Management Offices (LDRRMOs) are created to carry such tasks including planning and coordination efforts with other concerned entities [18].

The Disaster Response and Crisis Management Task Force (DRCMTF) which is focused on disaster preparedness and response created by virtue of Executive Order (EO) Number 24 issued in 2023, is playing a role similar to that of the U.S. Federal Emergency Management Agency (FEMA). The EO serves as an interim mechanism until legislation is passed to create a permanent agency mirroring the role of FEMA in the United States. [19].

The following presents some initiatives in the country on disaster risk financing.

a. **Disaster Risk Management Development Policy Loan with Catastrophe Deferred Drawdown Options (Cat DDOs)** – these are contingent credit lines provided by the World Bank which can be tapped when there is a declaration of state of calamity to supply immediate liquidity for disaster response and recovery [20].

b. **Parametric Insurance –** this program or instrument provides coverage for national government assets against major typhoons and earthquakes. A notable example is the Philippine Parametric Catastrophe Risk Insurance Program, launched by the government in 2017 with support from the World Bank, International Bank for Reconstruction and Development, and the U.K. Department for International Development. Insurance payouts are triggered when pre-defined parametric thresholds are met, facilitating rapid financial response to disasters [21].

c. **National Asset Registry System (NARS) -** comprehensive inventory of non-financial assets owned and utilized by the national government established by the Bureau of the Treasury in 2017, facilitating "easy access, and analysis of critical information on government assets" [22].

d. **PlanSmart -** a digital tool launched by the Department of Science and Technology (DOST), Philippine Institute of Volcanology and Seismology (Phivolcs), Department of the Interior and Local Government (DILG), National Disaster Risk Reduction and Management Center (NDRRMC), and Office of Civil Defense (OCD) in collaboration with the World Bank enabling LGUs affected by disasters to prepare restoration and recovery plans (RRPs) instantly [23].

Operationalizing disaster risk financing (DRF) tools and models in the Philippines requires a comprehensive approach that incorporates financial instruments, institutional frameworks, and enabling environments as discussed above. The various disaster risk financing instruments available in the country help in safeguarding the resilience of LGUs by assuring the availability of funds, reducing financial uncertainty, enabling foresight planning, and improving recovery and continuity of services.

ISSUES AND CHALLENGES ON DISASTER MANAGEMENT IN THE PHILIPPINES

Disaster management typically involves four main stages, often referred to as the Disaster Management Cycle. These stages are: (i) mitigation or prevention, (ii), preparedness, (iii) response and, (iv) recovery.

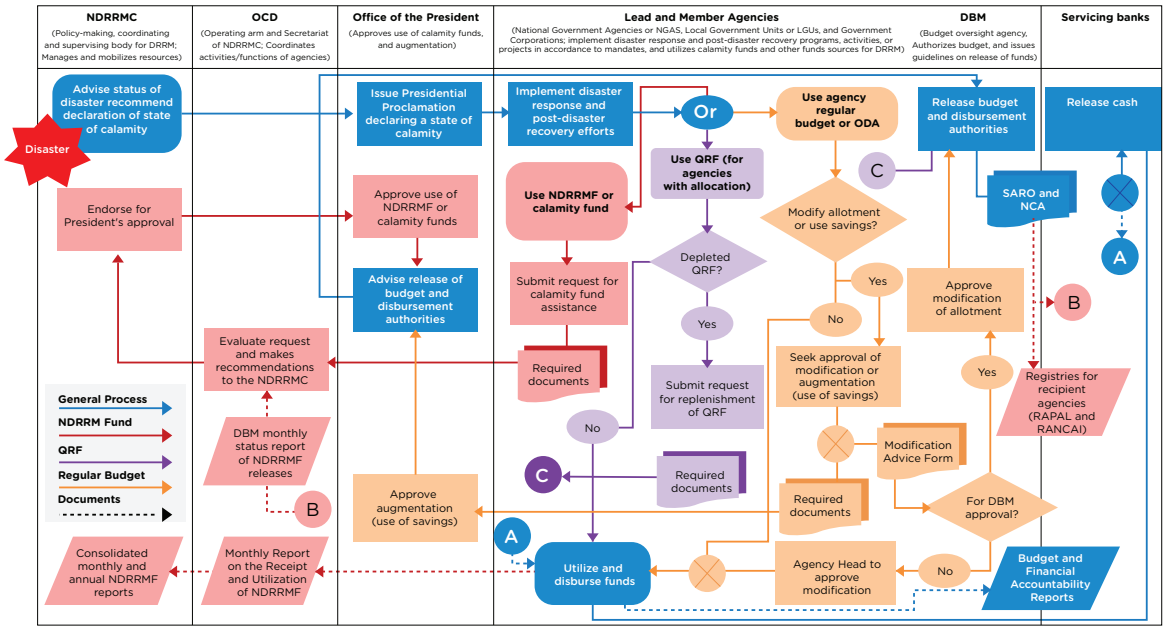
A. MITIGATION

Disaster mitigation is a continuous effort undergone to lessen the adverse impacts of natural disasters such as typhoons. It includes measures such as "engineering techniques and hazard resistant construction, as well as improved environmental policies and public awareness" [24].

The National Disaster Risk Reduction and Management Fund (NDRRMF) or the calamity fund, mainly used for relief, recovery, and reconstruction is oftentimes insufficient to meet post disaster financing needs. The difficulty to access the calamity fund granted to the different national government agencies, local government units, government owned and controlled corporations, and others has been noted as the main problem. The issues that have been identified are "(1) lengthy approval process or release of funds, and (2) lack of clear criteria or rules in getting approval for funds" [25].

The flow chart below shows the process on how the calamity fund can be tapped by various entities. It starts off with the recommendation by the NDRRMC of a declaration of a state of calamity to the President. The Philippine Disaster Risk Reduction and Management Act of 2010 or R.A. No. 10121, mandates the urgent undertaking of applicable remedial measures after the declaration of a state of calamity by the President. The requests for calamity fund assistance by an implementing agency shall be coursed through the OCD. Meanwhile, the local government units (LGUs) submit their requests to the NDRRMC through the regional/provincial/city/municipal DRRM councils. The NDRRMC endorses the requests to the Office of the President (OP) for approval after going through the necessary evaluations by the concerned units (e.g. OCD). The Department of Budget and Management (DBM) releases the requested funds to the implementing agency after the approval by the OP. The Bureau of the Treasury (BTr) then deposits cash to the implementing agency's Modified Disbursement System (MDS) sub-account after receiving the notice of cash allocation (NCA) from the DBM [26].

Figure 2. Flow of Funds at the National Government Level



Source of the chart: Qian, R. Signer, B., Skalon, T., and Marohombsar, Z., et al. (14 December 2020). Public Expenditure Review. Disaster Response and Rehabilitation in the Philippines. World Bank Group.

B. PREPAREDNESS

Taking a holistic review of disaster risks, disaster preparedness encompasses activities that refer to "contingency planning, stockpiling of equipment and supplies, development of arrangements for coordination, evacuation, and public information, and associated training and field exercises." It also considers linkages with "early warning systems" carried out with "formal institutional, legal and budgetary capacities" [27]. Some of the critical challenges cited for disaster preparedness include inadequate funding and infrastructure facilities in general. Based on a report published by the Norwegian Refugee Council in 2014, more technical and process-based tools such as risk maps are not being consistently maintained by the LDRRMOs [28]. During the fourth webinar of the 8th Annual Public Policy Conference (APPC) organized by the Philippine Institute for Development Studies (PIDS) and supported by the Bangko Sentral ng Pilipinas held last 13 September 2022, Nathaniel von Einsiedel, fellow at the Philippine Institute of Environmental Planners noted the insufficient investments in disaster planning tools among poorer LGUs and the lack of "permanent personnel to manage GIS [geographic information system] mapping functions" [29].

C. RESPONSE AND RECOVERY

Some challenges on disaster response include the "lack of delineation of mandates or responsibilities". For example, the Department of Social Welfare and Development (DSWD) and the National Housing Authority (NHA) have overlapping responsibilities in terms of providing permanent shelter. There are procurement and absorptive capacity issues which delay the implementation of government projects. There are also confusions in project procurement guidelines in emergency cases. Altered physical and manpower resources were also noted for some large-scale typhoons such as the Yolanda typhoon in 2013 [30].

RELEVANT NATURAL /CLIMATE INDUCED DISASTER STATISTICS

Based on processed data from the NDRRMC situational reports for the period 2019-2024, meteorological events including tropical cyclones, El Niño, and southwest monsoon have resulted in an estimated average loss and damages amounting to PhP35.3 billion (USD680.5 million) as shown in Table 1 below. The estimated loss and damages were felt in affected regions in the country from both the agriculture and infrastructure sectors. In terms of the ratio to the nominal gross domestic product, on the average, the ratio is equal to 0.2 percent [31].

Table 1. Data on the Estimated Loss and Damages from Meteorological Events (including Typhoons/Tropical Cyclones) (in billion PhP and billion USD), 2019-2024

	2019		2020		2021		2022		2023		Preliminary 2024	
	PhP	USD	PhP	USD	PhP	USD	PhP	USD	PhP	USD	PhP	USD
Loss and damages	19.3	0.38	44.2	0.92	54.3	1.10	24.8	0.46	29.7	0.53	39.6	0.69
Ratio to GDP	0.10		0.25		0.28		0.11		0.12		0.15	

Source: NDRRMC situational reports, and Philippine Statistics Authority (PSA) website

Note: Conversion was based on end-of period average Philippine Peso per US Dollar Exchange Rates gathered from the Bangko Sentral ng Pilipinas (BSP) website for 2019-2024 [32]

Meanwhile, on the average, based on data from the General Appropriations Act, from 2019-2024, the calamity fund is equal to PhP19.5 billion (USD371.1 million), or 0.1 percent of the nominal GDP (Table 2) [33].

Table 2. Calamity Fund (in billion PhP and billion USD), and Ratio to the Nominal Gross Domestic Product (GDP), 2019-2024

	2019		2020		2021		2022		2023		2024	
	PhP	USD	PhP	USD	PhP	USD	PhP	USD	PhP	USD	PhP	USD
Calamity Fund	20.0	0.39	16.0	0.33	20.0	0.41	20.0	0.37	20.5	0.37	20.5	0.36
Ratio to GDP	0.10		0.09		0.10		0.09		0.08		0.08	

Source: General Appropriations Act Various Years and PSA

Note: Conversion was based on end-of period average Philippine Peso per US Dollar Exchange Rates gathered from the BSP website for 2019-2024 [34]

Section 21 on the LDRRMF of the Philippine Disaster Risk Reduction and Management Act of 2010 specifies that "not less than five percent (5%) of the estimated revenue from regular sources shall be set aside as the LDRRMF to support disaster risk management activities such as, but not limited to, pre-disaster preparedness programs including

training, purchasing life-saving rescue equipment, supplies and medicines, for post-disaster activities, and for the payment of premiums on calamity insurance." Of the amount appropriated for LDRRMF, "thirty percent (30%) shall be allocated as Quick Response Fund (QRF) or stand-by fund for relief and recovery programs in order that situation and living conditions of people in communities or areas stricken by disasters, calamities, epidemics, or complex emergencies, may be normalized as quickly as possible" [35].

On the average, based on data from the BLGF (Table 3), the LDRRMF amounted to PhP30.1 billion (USD577.6 million) for the period 2019-2023. Based on available data, for the period 2019-2022, about 54.0 percent of the fund is being disbursed by the LGUs [36]. Based on Joint Memorandum Circular Number 2013-1, "the unexpended balance of the LDRRMF shall accrue to a special trust fund to support disaster risk reduction and management activities of the Local Disaster Risk Reduction Management Council (LDRRMC) within the next five years" [37].

Table 3. Local Disaster Risk Reduction Management Fund, (in billion PhP and billion USD), 2019-2023

	2019		2020		2021		2022		2023	
	PhP	USD	PhP	USD	PhP	USD	PhP	USD	PhP	USD
LDRRMF	20.3	0.40	25.9	0.54	25.4	0.52	43.7	0.80	35.1	0.63

Source: Bureau of Local Government and Finance (BLGF)

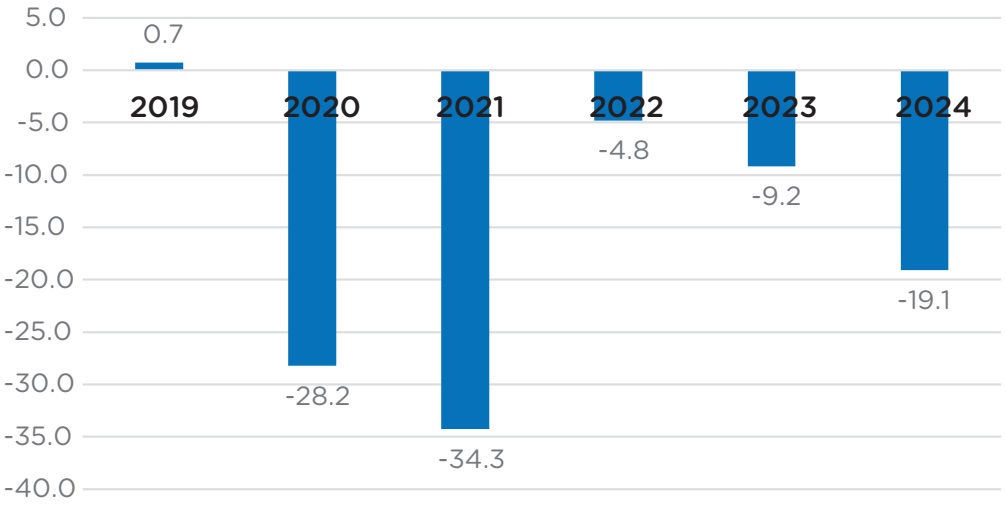
Note: Conversion was based on end-of period average Philippine Peso per US Dollar Exchange Rates gathered from the BSP website for 2019-2023 [38]

The underutilization of the LDRRMF is due to policy and institutional hindrances [39]. The literature points to various reasons of the underutilization of the LDRRMF citing incidences such as limited technical capacity of the LGUs on disaster fund management and insufficient manpower [40], improper allocation of funds wherein funds were used for other purposes rather than their intended uses [41], procurement delays [42], among others.

To maximize the utilization of the LDRRM fund, the challenges being encountered resulting in the underutilization of the fund need to be addressed. First, the technical capacities of the LGUs need to be upgraded and permanent additional personnel need to be hired. Second, a proper system or mechanism on the monitoring of funds could be established to ensure accountability and consistency of funds within the unit or individual LGUs. Moreover, personnel involved can benefit from continuous capacity building activities on disaster fund management. The Commission on Audit (COA) already performs its audit roles over the LDRRMF of the LGUs. To hasten the accessibility of funds, there is a need to continuously identify and solve the procurement bottlenecks.

As shown in Figure 3 below, there were financing gaps based solely on the calamity fund for the years 2020-2024 with estimates ranging from PhP4.8 billion – PhP34.3 billion (USD88.3 million – USD695.7 million) probably due to stronger typhoons such as typhoon Odette in 2021 which had an estimated loss and damage of PhP47.5 billion. The resources directed to the Corona Virus Disease (COVID) – 19 pandemic, even restricted the recovery efforts during that time.

Figure 3. Estimated Disaster Financing Gap Based on the Calamity Fund Alone, 2019-2024 (in billion PhP)



Source: Author's calculations

Table 4. Estimated Disaster Financing Gap, 2019-2024

	2019	2020	2021	2022	2023	2024
in million PhP	+	-28,222.00	-34,265.00	-4,808.00	-9,200.00	-19,100.00
in million USD	+	-587.5	-695.7	-88.3	-165.4	-333.3

Source: Author's calculations based on data on calamity fund and loss and damages from typhoons

Note: Conversion was based on end-of period average Philippine Peso per US Dollar Exchange Rates gathered from the BSP website for 2019-2024 [43]

Furthermore, various program loans as shown in Table 5 below have also been availed by the government to support the disaster management agenda [44].

Table 5. Program Loans Related to Disasters (in million US dollars)

Particulars	Lead implementing agency	Loan Signing Date	Date of Effectivity	Loan Closing Date	Loan Amount	Actual 2023	Program Availment	
							2024	2025
ASIAN DEVELOPMENT BANK								
Second Disaster Resilience Improvement Program, Subprogram2 (DRIP) */					500.00	--	--	--
WORLD BANK – International Bank for Reconstruction and Development								
Fourth Disaster Risk Management Development Policy Loan with a Catastrophe Deferred Drawdown Option (CATDDO 4)	DOF	29-Nov-21	22-Dec-21	31-Dec-24	500.00	297.5	--	--
Philippine Disaster Risk Management and Climate Development Policy Loan with a Catastrophe Deferred Drawdown Option 1	DOF				500.00	--	--	--
AGENCE FRANCAISE DE DEVELOPMENT (AFD)								
Disaster Risk Reduction Enhancement at the Local Level, Subprogram2 (DRREALL2)					162.95	--	--	162.95
The Export Import Bank of Korea – Economic Development Cooperation Fund (KEXIM-EDCF)								
Program-Based Loan for Disaster Resilient Infrastructure Management (PL-DRIM) **/	DOF				100.00	--	--	30.00

Source: Table D.2 Budget of Expenditures and Sources of Financing (BESF) 2025
**/ Indicative (Pipeline Loans)*
***/ Proposed as hybrid regular program loan and standby loan facility*
Note: These do not include the other climate change related program loans

FISCAL IMPACTS

Natural disasters such as typhoons pose fiscal risks referring to an event that results in the deviations of an economic indicator from its expected fiscal outcome. This could endanger fiscal sustainability if not properly managed and mitigated. The impacts of typhoons on fiscal sustainability are channeled through increased borrowing to finance the deficit due to increased spending.

The equation below shows the debt dynamics formula to better appreciate the interactions of the variable debt with the other variables [45].

$$dt = (1+\lambda_t)d_{t-1} - p_t$$

where,

dt = Debt at the end of period t, as a ratio to GDP at t

γt = Nominal GDP growth rate between t – 1and t.

pt = Primary balance in t, as a ratio to GDP at t.

πt = Change in the GDP deflator between t – 1and t.

rt Real interest rate in period t. Defined as rt ≡ [(1+ i t)/(1+ πt)]–1. Thus, 1+i t = (1+ rt)(1+ πt)

gt = Real GDP growth rate between t – 1 and t. Notice that 1+γ*t* = (1+*gt*)(1+π*t*).

$$\lambda t = \frac{1-\gamma t}{1+\gamma t} = \frac{r-g}{1+g}$$

A. IMPACT ON THE PROJECTED DEBT

The IMF stress test makes use of historical data or baseline data and projections. The projections for the debt-to-GDP include both the baseline and the five scenarios, namely the shock to the primary balance, the shock to economic growth, contingent liabilities shock, interest rate shock and the combined shocks. The projection for the baseline is computed based on the official projections of the Development Budget Coordination Committee (DBCC) as contained in the 2025 BESF [46]. The IMF model is an excel formula-based format that considers the interplay among various macroeconomic variables (e.g. gross domestic product, government debt, inflation rate, overall balance, interest payments, primary balance, and interest rate).[16]

The table below shows the projected debt-to-GDP based on the baseline and the scenarios. Various economic shocks, the magnitude of which were determined based on the related literature, were applied to the baseline data. A 0.1 percent shock to contingent liability was considered based on the ratio of the calamity fund to the nominal GDP. A -1.0 percent shock to the economic growth17, and a +0.5 percent shock to the interest rate are considered based on the impacts of natural disasters to the said indicators based on the literature and the author's assumption. Some of the surveyed literature estimate the impact of a severe typhoon to the annual real GDP growth in the country to be about 1.0 percent [47]. The positive impact on the interest rate is a result of the government's monetary policy to abate the inflationary impact of the

16 The excel template was sourced from the IMF Fiscal Affairs Department during the course on Fiscal Analysis and Forecasting in Singapore in 2016. The model was replicated using Philippine data.

17 Based on the literature, natural disasters may also promote economic growth due to the productivity of the private sector [50]. However, in the Philippines, the economic impact is expected to be negative due to several factors including diminished income and livelihood, and loss/damages to the agriculture and infrastructure sectors.

disaster resulting from a mixture of supply side disruptions and likely demand driven reasons as well as higher production costs. Based on a study analyzing the "impact of extreme weather episodes on the Philippine banking sector", it was discovered that "extreme rainfall episodes have a negative impact on banking sector performance". The following have been observed: "deterioration in loan growth, asset quality, total assets and profitability, following significant withdrawal in deposits" [48]. Based on another study, it was disclosed that there is a "positive association between natural disasters and median bank deposit interest rates across bank branches" [49]. Given the absence of quantitative impact of disaster on interest rates, the author assumed a small 0.5 percent increase based on the premise that the BSP has often delayed its policy rate cut in times of disaster to temper inflation. Meanwhile, the impact on the primary balance was determined based on the magnitude of the loss and damages from typhoons which is on average equal to 0.2 percent of the GDP.

Based on the results of the IMF stress test, the debt-to-GDP ratio could increase to 62.0 percent when a 0.10 percent contingent liability shock is added on top of the debt-to-GDP in 2025. This is higher than the 60.4 percent debt-to-GDP ratio in the baseline scenario. The other resulting debt ratios are presented in Table 5 below. The resulting highest debt-to-GDP (excluding the combined shocks), equal to 62.5 percent, is when there is -1.0 percent shock to the real GDP growth, followed by the debt-to-GDP equal to 62.2 percent when there is a +0.5 percent shock to the interest rate. The primary balance shock results in a 62.0 percent debt ratio, same with the contingent liability shock.

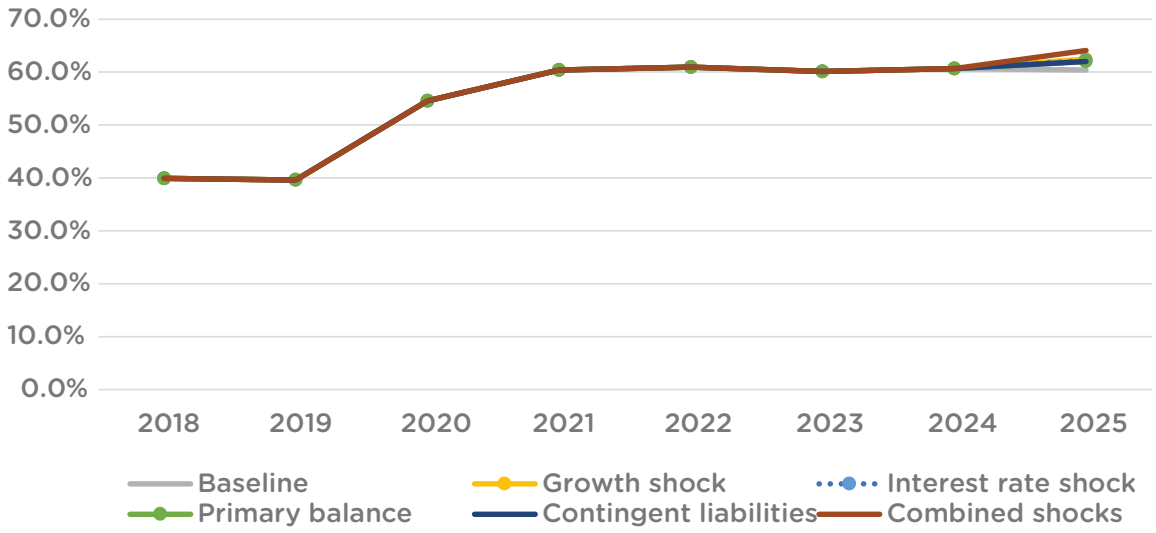
Table 6. Actual and Projected Debt-to-GDP Based on the Baseline Scenario and the Various Shock Scenarios

Actual 2024	Scenario	2025	
		Baseline	Projections
60.7	Contingent liability shock	60.4	62.0
60.7	Primary balance shock	60.4	62.0
60.7	Growth shock	60.4	62.5
60.7	Interest rate shock	60.4	62.2
60.7	Combined shocks	60.4	64.1

Source: Based on the Results of the IMF Stress Test

Note: The sensitivity analyses did not consider political risks and other factors (e.g. realism of assumptions (i.e. on the projected debt, nominal GDP, and other variables) that may affect the analysis

Figure 4. Debt-to-GDP at Unchanged Policy and under Shock Scenarios

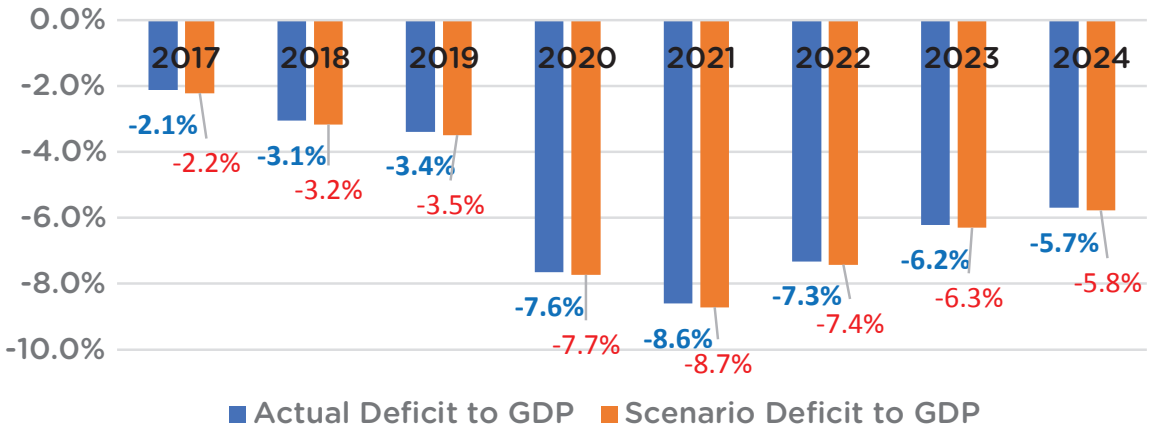


Source: Based on the Results of the IMF Stress Test

B. IMPACT ON THE DEFICIT AND ON THE IMPLEMENTATION OF GOVERNMENT PROGRAMS AND PROJECTS

Using the defined formula of net financing and deficit, the impact on the deficit was estimated if an additional calamity fund[18] was assumed as an off-budget account. Based on the said scenario, the deficit to GDP could have increased by 0.1 ppt annually based on data for the period 2017-2024. This is equivalent to approximately PhP20.0 billion in 2024.

Figure 5. Potential Impact of Unfunded Contingent Liability on the Deficit-to-GDP

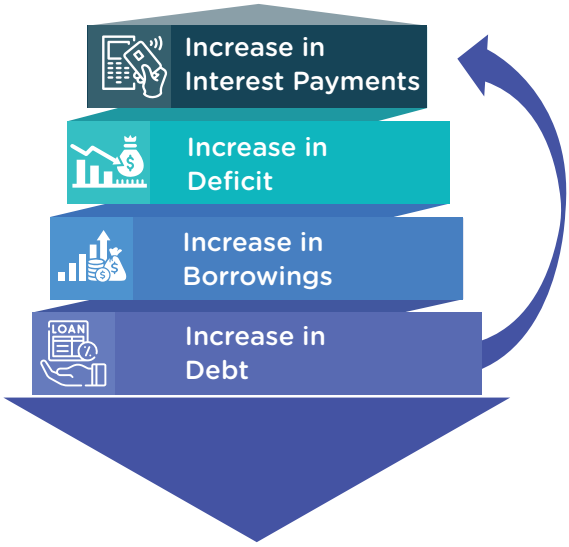


Source of raw data: BTr Cash Operations Report and Computations of the Author

Note: The scenario deficit to GDP refers to the deficit ratio when an additional calamity fund was assumed as off-budget or non-budgetary assuming other factors are unchanged

18 For the purpose of the exercise, the same calamity fund magnitudes for the period 2017-2024 were applied.

Figure 6. Vicious Cycle of Deficit and Debt



The possibility of sizable interest payments borne by the government to service debt obligations could crowd out resources for the other productive activities of the government. To be more cautious, the international benchmark of 60.0 percent debt-to-GDP ratio is oftentimes adopted. However, for some emerging market economies, 70.0 percent ratio is also recommended.

The Medium-Term Fiscal Framework 2022-2028 adopted by the Philippine Congress in 2022 highlights the government's commitment to fiscal consolidation and debt sustainability. To achieve the targets and strategies/objectives set by the government, several administrative and structural reforms are necessary in various areas including the labor market, macroeconomy, health, energy, social protection, infrastructure, etc. [51].

Part of the headline indicators include:

- 6.5-8.0 percent real GDP growth rate annually between 2023-2028
- Single digit (9.0 percent) poverty rate by 2028
- 3.0 percent NG deficit to GDP ratio by 2028
- Less than 60.0 percent NG Debt-to -GDP ratio by 2028

Fiscal risks brought on by natural disasters such as typhoons could compromise the attainments of the abovementioned targets as well as the implementation of crucial government programs and projects.

CASE STUDY

HOW TO ADDRESS THE FLOODING IN LINGAYEN: PREPAREDNESS, MITIGATION OF IMPACTS AND POST-DISASTER STRATEGY (I.E. PROVIDE LIVELIHOOD OPPORTUNITIES)

Flooding incidents are just a few of the impacts of climate change. Due to stronger typhoons, the flooding problem in the Philippines remains a pressing concern. The following will present strategies in every stage of the disaster (i.e. flooding caused by typhoons) namely preparedness, mitigation, response and recovery in Lingayen, Pangasinan. The municipality of Lingayen is the capital of the province of Pangasinan.

Disaster mitigation aims to eliminate or reduce the impacts of typhoons should they occur. In order to do this, dikes along the shore of Lingayen Baywalk (near the beach) need to be protected from being destroyed by massive waves during typhoons. This will prevent sea water from flooding the baywalk and the streets. There have been efforts to elevate some of the roads. However, if there are no catchments for the water that flows from the nearby rivers, the flooding may not be solved. Hence, proper catchment such as a working drainage system could be reconstructed and monitored. If not addressed, floodwater will keep entering residents' homes.

Disaster preparedness is crucial to improve climate resilience. Early evacuation plans particularly for areas that are usually severely hit by floodings can be announced by local officials. This will prevent typhoon casualties.

A disaster may either create or destroy livelihoods for some people. For instance, the local government can employ interested non-working residents to render **post-disaster** clean-up.

The use of digital financial solutions can help entrepreneurs manage their transactions. To mitigate the loss of cash due to flooding, they may enroll in the G-Cash app, an online financial tool so that their income from their businesses will be kept online. They can also use the funds in the app to pay their utilities including electricity and water. There must be a change in behavior amongst these citizens in order for this proposal to be successful. Educating them is the first step towards this endeavor.

It is also important to protect private properties through low-cost insurance which can be offered by the local government.

The vulnerable and marginalized population and those who are severely affected by the disaster should be considered as the priority beneficiaries of the programs.

Some of the above proposed measures may also be applicable to other regions, particularly those prone to flooding incidences (e.g. some cities in Metro Manila such as Marikina, Pasig, and Manila; Central Luzon including the provinces of Bulacan, and Pampanga). Other regions that are not mentioned but in need of further interventions can also adopt the above-mentioned measures. It must be noted, though, that the ongoing efforts of the various regions in the country should be sincerely acknowledged and the above mentioned are just supplementary suggestions.

Continuous coordination with the concerned national and local government agencies is crucial. Data and information are important for the overall analysis of the issue.

ROLE OF THE PARLIAMENTS

Parliaments serve three main roles: representing the people, making laws, and monitoring the actions of the government. Its representation functions are carried out in various forms including constituency work such as attending local government activities, and formulating policies affecting the local and national government. The legislation function involves making or revising laws after passing through rigorous reviews, and debates in the lower and upper chambers. Its oversight functions involve monitoring and holding the executive branch accountable by reviewing policies, scrutinizing government spending, and ensuring transparency in governance.

While the government has been taking steps to solve the problems in disaster mitigation, preparedness, and recovery, much still needs to be done to realize the shared hopes of the many, i.e. to fully address the recurring problems involving disasters. The following presents some gaps on disaster management that the government should address. The role of the parliament is to exercise its oversight functions over the relevant government agencies. Its legislation function is also critical in order to approve policies relevant to disaster management. For instance, a well-crafted National Land Use policy is necessary for disaster risk reduction and management.[19] Other resolutions may also be filed as necessary to tackle the main issues.

Disaster Stage	Issues	Solutions/ Actionable Insights	Responsible Senate Committees	Responsible Government Agencies/ Units
Mitigation	Difficulty in accessing the calamity fund	• Issuance of a guideline enforcing, clarifying, and improving existing directives	Committee on Finance, Committee on Environment, Natural Resources and Climate Change, and others	DBM, OCD, NDRRMC, LGUs and other concerned agencies
Preparedness	Inadequate funding and infrastructure facilities (in general)	• Technical assistance from international organizations/ Utilize existing models and technologies • Upgrading of critical infrastructures like hospitals and schools • Upgrading of drainage systems	Committee on Finance, Committee on Environment, Natural Resources and Climate Change, and other relevant committees	DBM, DPWH and other concerned agencies

19 The benefits of a National Land Use policy span in several areas including urban planning, environmental protection, etc.

Disaster Stage	Issues	Solutions/ Actionable Insights	Responsible Senate Committees	Responsible Government Agencies/ Units
Response and Recovery	Lack of delineation of mandates or responsibilities • Procurement and absorptive capacity issues • Limitations on physical and manpower resources for large-scale typhoons	• Issuance of a rule clarifying existing guidelines or rules • Clearer inter-agency coordination platforms • Effective monitoring and evaluation systems	Relevant Committees (e.g. Committee on Environment, Natural Resources and Climate Change, Committee on Urban Planning, Housing and Resettlement and Urban Community Development), and other relevant committees	Relevant government agencies (e.g. DSWD, NHA for housing; DPWH and NHA for rehabilitation efforts) and other concerned agencies

CONCLUSIONS AND RECOMMENDATIONS

Disaster mitigation, preparedness, and response/recovery are crucial steps or stages in disaster management. Continuous mitigation efforts as well as preparedness activities have been implemented in the country to avoid significant loss of life and extensive property damage respectively. Similarly, response and recovery measures are being carried out during and after typhoon incidences.

Various actors play crucial roles in the fulfillment of these important functions including the whole government sectors (NG and LGUs), the private sector, CSOs, the legislative branch, other concerned government branches, as well as individuals and/or private citizens. The NDRRMC, OCD, DBM, the various LGUs, among other entities, should ensure the timely and appropriate actions to all requests made by the concerned agency or organization. The NDRRMC, being the overseer of the whole sector (i.e., disaster management) should be proactive in all its policies and should anticipate any possible risks or scenarios that may happen in the future. Aside from exercising sound fiscal discipline (e.g. judicious use of resources), the DBM must be prompt and transparent in its disbursement of funds.

It is important to account for disaster financing in the sphere of public financial management. Most of the sources of funds for NG disaster activities come from the National budget. The loans that have been acquired by the government are also incorporated into the National budget. Disaster financing may pose fiscal risks if not accounted for in the Public Finance Management (PFM) system. If disaster is underfunded, this could result in a larger deficit because of higher government borrowing. This will eat up a chunk of the

budget that is intended for the productive activities of the government such as social and infrastructure programs.

The government can consider strengthening its domestic resource mobilization efforts and explore other ways to raise revenues. Progressive tax reforms (e.g. personal income tax reform, etc.), those which put more emphasis on imposing the higher tax burden to those with the most ability to pay and less to those with lesser ability should be pursued. Well-designed well taxes may also be explored by the government. Health taxes (e.g. sin taxes), those which discourage harmful behavior, could also be encouraged. Other forms of financing such as public private partnerships (PPPs) can also be reinvigorated to generate funds from the private sector. Tapping the international and domestic market for green bonds and/or sustainability bonds could also be continuously pursued. Other best practices in other countries may also be replicated. A 2024 study discussed some nature-based solutions as the new approach for flood management. These include "constructing green roofs, establishing community woodlands, landscaping around buildings and creating urban parks and gardens" [52].

Identifying the root causes of the challenges in disaster management would be helpful in providing solutions and strategies to address them. Foremost, the difficulty in accessing the calamity fund could be addressed by issuing guidelines and timelines by the DBM jointly with other concerned agencies like the NDRRMC along with continuous capacity building of LGUs on disaster fund management. Addressing the problem will not stop at implementing capacity building programs but tracking the progress of the LGUs through some predefined performance metrics and criteria. The DOF can also study other recurring sources of financing such as catastrophe bonds and determine if they are viable options to undertake. Other concerned government agencies (e.g. DA) might explore other possible risk financing and insurance options. The insufficiency in infrastructure programs can be filled by ensuring the inclusion of implementation-ready projects on disaster management to include both soft and hard infrastructure facilities in the budget. To achieve this, technical assistance may be necessary from the relevant international organizations. For instance, recently, with funding from the United States Agency for International Development's Bureau for Humanitarian Assistance (USAID-BHA), scientists from the University of the Philippines created an impact-based flood forecasting system that can predict flooding in the entire Philippines [53]. All LGUs and implementing agencies are enjoined to prioritize this in their annual budget plans. Finally, strengthening the coordination mechanism between the LGUs and the NG would also be beneficial and would address the challenges on disaster response and recovery. Clarifying existing guidelines or rules, clearer inter-agency coordination platforms, and effective monitoring and evaluation systems are key to ensuring that each agency knows its responsibilities and can act efficiently during a disaster. All the above-mentioned activities and proposed strategies are crucial to make disaster planning and management workable and effective. Pivotal to these, are the concerted efforts, initiatives, and proposals of the government including that of the legislative and executive branches, local government, CSOs, and other involved entities. For instance, the legislature has been pushing for the creation of the Department of Disaster Resilience, a body which will work to ensure disaster resilience in the country. Relative to the creation of the new agency, it is important to ensure that there will be no overlapping of mandates or duplication of functions with the existing offices or agencies. The ongoing efforts of the concerned government agencies should be recognized. Moreover, the contributions of the private sector, both from international and local organizations and private companies, should be celebrated.

Other noteworthy considerations include enforcing and improving existing government guidelines on several areas such as disaster planning, mitigation, and fund management. Urban planning is a necessary undertaking to raise awareness on the crucial steps to prevent disaster risks. Hence, the passage of a well-crafted National Land Use policy could help in improving disaster risk reduction and management.

The notable actions of our legislators enforcing their oversight duties for the executive branch to address the calamity fund issues should be acknowledged. For instance, Senate President Francis "Chiz" Escudero in 2023 called for a swift calamity fund release for LGUs [54]. Stocktaking of other worthy efforts of other legislators should be encouraged. There is a need to learn from the concerned government agencies by engaging in dialogues or briefings on the updates and actions taken to address the said problems.

The negative economic impacts of typhoons should be continuously addressed and monitored. Despite some of the efforts exerted by the government to mitigate disaster impacts, the same problems still hound our country such as the landslides and flooding resulting in billions of pesos in property damages and numerous casualties. It has to be noted that an increasing budget is justified if it translates to tangible outcomes and outputs that address the intended objectives of the programs. If the problem persists, there is a need to institute other measures aside from providing additional budgets. The sensitivity analyses that were presented should be interpreted cautiously taking note of the caveats. Nonetheless, it shows the extent of the dent that disasters could inflict particularly on the debt ratio when such economic shocks occur. The financing gap put at risk several areas of concern in the country including the environment, economy, health, education, and recovery, among others which exacerbated the existing social and economic inequalities in the country. These underscore the need to formulate long term and sustainable measures and other strategies to address the effects of climate change to make the country more resilient and adaptable.

Philippine emergency responders simulate evacuation of injured personnel during training (Photo: William Berksteiner/U.S. Navy, 2019)

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https://ndrrmc.gov.ph/attachments/article/3830/Memo_on_Sitrep_No_06_re_Preparedness_Measures_and_effects_of_TS_FALCON_as_of_6PM_22_July_2019.pdf

https://ndrrmc.gov.ph/attachments/article/3698/SitRep_No_06_Preparedness_Measures_and_Effects_of_Tropical_Depression_CHEDENG_as_of_8AM.pdf

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https://ndrrmc.gov.ph/attachments/article/4135/SitRep_no_12_re_STY_ROLLY_as_of_11NOV2020.pdf

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https://ndrrmc.gov.ph/attachments/article/4215/SitRep_No__22_for_the_Effects_of_Shear_Line_2022.pdf

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https://ndrrmc.gov.ph/attachments/article/4234/SitRep_No_36_for_Southwest_Monsoon_enhanced_by_TCs_EGAY_and_FALCON_2023.pdf

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https://ndrrmc.gov.ph/attachments/article/4277/SitRep_No_3_for_the_Tropical_Cyclone_QUERUBIN.pdf

https://ndrrmc.gov.ph/attachments/article/4274/SitRep_No_34_for_the_Combined_Effects_TCs_NIKA_OFEL_and_PEPITO_2024.pdf

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Forest above Palangkaraya, Central Kalimantan, Indonesia (Photo: Palangka Raya, Jan 2023)

3

ENHANCING CLIMATE FINANCE IN INDONESIA: STRENGTHENING BUDGET TAGGING FOR CLIMATE ACTION

BY MS MARIHOT NASUTION AND MR RIZA ADITYA SYAFRIT

ABSTRACT

Indonesia has committed to reducing greenhouse gas (GHG) emissions by 31.89% unconditionally and up to 43.02% with international support by 2030. To support these climate ambitions, the government introduced the Climate Budget Tagging (CBT) system in 2014 to track climate-related expenditures in the national budget. While CBT has expanded from six to 14 ministries and agencies, its effectiveness remains constrained by inconsistent funding, limited technical capacity, and fragmented data systems. Between 2016 and 2023, climate-tagged allocations averaged just 3.2% of total state expenditure, with adaptation programs persistently underfunded. Moreover, manual tagging, lack of automation, and poor integration between budget systems (KRISNA, SAKTI) and climate data platforms (AKSARA, SRN) impede the system's capacity to measure outcomes and promote accountability.

Despite efforts to align budget planning with national climate strategies—including the Enhanced NDC, LCDI, and LTS-LCCR 2050—significant financing gaps persist. Government allocations have covered only 12.4% of the annual mitigation funding needs identified in Indonesia's climate roadmap. Additionally, discrepancies between CBT figures and mitigation finance data from other institutions point to potential overstatements in climate reporting, raising concerns about credibility and greenwashing.

Regional Climate Budget Tagging (RCBT), piloted in 11 local governments,[20] remains nascent at the subnational level. Climate-related budget allocations in these regions ranged from 0% to 6.4%, hindered by the absence of a legal mandate, reliance on manual processes, and low institutional capacity. Coordination challenges between the Ministry of Finance and Home Affairs further limit uptake. Nonetheless, local governments have demonstrated a growing commitment, formulating over 9,000 climate action plans from 2019 to 2022. Yet without robust evaluation and funding mechanisms, these efforts risk falling short.

Climate-responsive fiscal transfers—such as Dana Alokasi Khusus (DAK/Special Allocation Funds) and Dana Bagi Hasil – Dana Reboisasi (DBH-DR/Revenue Sharing Funds - Reforestation Fund)—offer promise in channelling funds for subnational climate

20 Initially, 23 local governments were involved, but only 11 produced their climate budget tagging reports.

actions. However, these mechanisms require more targeted audits, improved reporting, and more substantial alignment with national climate objectives.

To close the climate finance gap, Indonesia could enhance the integration of financial and climate information systems, develop clear regulatory mandates for subnational tagging, and build technical capacity across all levels of government. These measures are vital for ensuring efficient, transparent allocation of climate funds and supporting a just and accountable transition toward a low-carbon, climate-resilient economy.

INTRODUCTION

Indonesia faces escalating climate challenges and is under international scrutiny to meet ambitious climate commitments. In its Enhanced Nationally Determined Contributions (Enhanced NDC), the country has pledged a 31.89% reduction in greenhouse gas (GHG) emissions under unconditional terms and a 43.02% reduction with international support by 2030, relative to a business-as-usual (BAU) scenario[1]. However, achieving these targets is complicated by regulatory barriers, data quality issues, and a heavy reliance on coal energy[2]. Policy inconsistencies across major climate strategies, including the Long-Term Strategy for Low Carbon and Climate Resilience (LTS-LCCR) 2050, the Low Carbon Development Initiative (LCDI), and the Net Zero Emissions (NZE) Roadmap, hinder coherent planning and budgeting for climate action[3].

The cost of meeting these commitments is significant, with estimates reaching USD 281 billion for the unconditional NDC targets by 2030[4]. Between 2015 and 2019, Indonesia allocated USD 55.01 billion from its budget and mobilized an additional USD 1.24 billion through loans and grants for climate-related initiatives[1]. Despite these efforts, Indonesia's progress remains insufficient, indicating a need for more effective financial management and coordination across government sectors and external partners.

It's essential to recognize that the responsibility for combating climate change doesn't rest solely on the shoulders of the central government[6]. Subnational governments, state-owned enterprises, and the private sector are also responsible for combating climate change[7–9]. Climate Budget Tagging (CBT) was introduced as a financial management tool to track and classify climate-related expenditures within the national budget[1,10]. CBT aims to enhance resource allocation, ensure transparency, and link budgetary spending to climate objectives. The increase in climate-related spending is notable, with climate mitigation funding rising from IDR 52.4 trillion (USD 3.27 billion) in 2016 to IDR 346.00 trillion (USD 21.80 billion) by 2023. However, it's important to note that progress in funding has varied from year to year over this eight-year period [11]. Also, the system has limitations, such as excluding subnational and state-owned enterprise expenditures and lacking mechanisms to assess the efficiency or impact of allocated funds[12].

This study examines the intricacies of Indonesia's climate budget tagging system, aiming to pinpoint existing gaps, overcome challenges, and uncover opportunities for enhancement. The objective is to elevate the efficacy of CBT in tracking public climate expenditures and bolstering national climate strategies, such as the Enhanced NDC, the LTS-LCCR 2050, and the LCDI. It also explores the untapped potential at the subnational level for funding climate initiatives. The study aspires to deliver well-founded recommendations that amplify the nation's ability to effectively mobilize and allocate resources for impactful climate action by addressing these issues head-on.

The key research questions guiding this study include:

1. **Tracking and Outcomes:** What measurable outcomes has Indonesia's CBT system achieved in tracking public climate expenditures?
2. **Policy Alignment:** To what extent does CBT align with Indonesia's climate strategies, including the Enhanced NDC?
3. **Funding Gaps**: What gaps exist between CBT-tagged expenditures and their impact on GHG reductions or adaptation outcomes?
4. **Involvement of Subnational Governments:** To what extent has the potential of subnational governments in reducing the impact of climate change been recognized so far, and what has the government done to untap it?

A descriptive qualitative approach, such as trend analysis, is mainly employed to address the research questions. This is applied to analyze expenditure data and evaluate the effectiveness of CBT in allocating and tracking climate-related funds. This approach is accompanied by several qualitative techniques, such as:

1. **Document Analysis:** This involves reviewing government reports, legislative documents, and budget guidelines to assess the alignment between CBT practices and Indonesia's climate goals. Key documents include the Enhanced NDC, LTS-LCCR 2050, and LCDI.
2. **Stakeholder Engagement:** Key stakeholders, including government officials, climate finance experts, and representatives from civil society organizations, were interviewed and engaged in focus group discussions (FGDs). The discussions aimed to gather insights on CBT's effectiveness and identify opportunities for system improvements. These discussions were conducted during January 2025 through separate interviews with MoDP/Bappenas, FPA MoF, MoEF, the World Bank team, and Climate Policy Initiatives as CSO representatives.

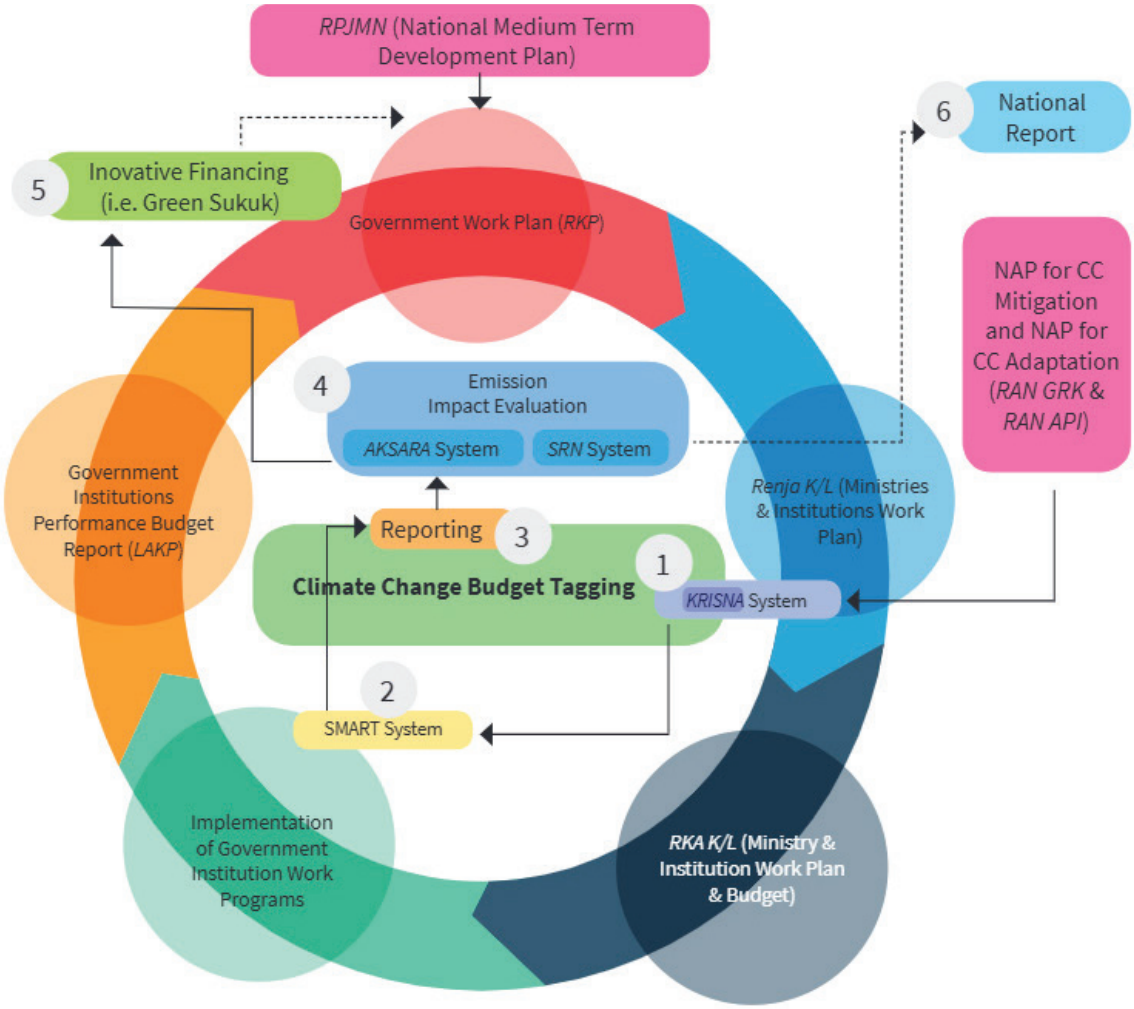
This study's sources include financial data collected from several government information systems, such as:

- Budget data tagged or CBT data from Kolaborasi Perencanaan dan Informasi Kinerja Anggaran (KRISNA/Collaboration Planning and Budget Performance Information) linked to Sistem Aplikasi Keuangan Tingkat Instansi (SAKTI/Agency Level Financial System Application);
- Potential strategies/actions and funding identified by the national and subnational governments in Aplikasi Perencanaan dan Pemantauan Aksi Pembangunan Rendah Karbon Indonesia (AKSARA/Application of Planning, Monitoring, Evaluation, and Reporting of the Implementation of Indonesia's Low Carbon Development);
- Emission inventory and reduction recorded in Sistem Registri Nasional (SRN/National Registry System).

Policy and governance reports on implementing CBT and related frameworks are reviewed to provide comprehensive insights.

CURRENT STATUS OF CLIMATE BUDGET TAGGING (CBT)

Figure 1. Flow of Climate Change Budget Tagging in National Planning and Budgeting



Source: FPA MoF. [6]

Climate Budget Tagging (CBT) in Indonesia identifies budget allocations for climate change mitigation and adaptation by tagging outputs in budget documents such as ministries/agencies' working plans (Rencana Kerja /Renja K/L) and RKA-K/L[13]. initiated in 2014 with UNDP and UNEP support, CBT ensures transparency and accountability and aligns government spending with climate objectives. Initially applied to six ministries under RAN-GRK, it expanded in 2018 to include RAN-API activities across 18 ministries/ agencies[13].

1. CBT monitors public funding for climate actions, enhances planning and budgeting quality, and provides data for performance-based budgeting, prioritization, and international reporting to bodies like UNFCCC[13,14]. The process involves (Figure 1):
2. Line Ministries tag their activities that have climate-related output into the KRISNA system during the work plan formulation.
3. The allocated climate budget is monitored through the SMART system, which is then used and reported as climate expenditure.
4. The Climate Expenditure Report is developed annually and is published by the Ministry of Finance (MoF) and

The impact of climate change-related outputs in the form of greenhouse gas emissions is evaluated through the AKSARA and SRN systems[14].

AKSARA is a platform designed to plan, monitor, and report Indonesia's low-carbon development initiatives. It integrates national and local data to support sustainable growth by balancing economic, environmental, and social goals[15]. It enables routine coordination and reporting across sectors through modules for planning, monitoring, evaluation, and transparent stakeholder communication. This platform can also show the expected reduction of GHG emissions from planned government programs.

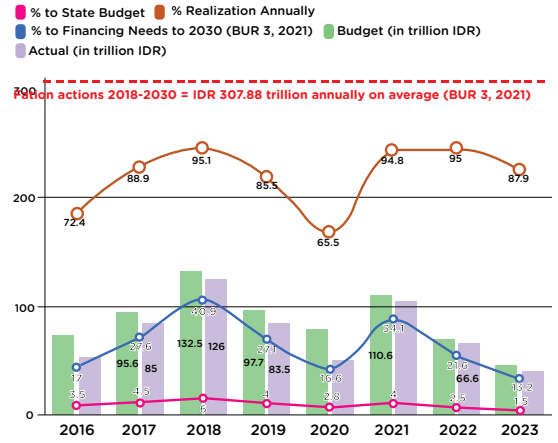
Meanwhile, SRN is Indonesia's platform for registering and managing data on climate change mitigation actions, achievements, and supporting resources. It ensures transparency, policy support, and compliance with carbon regulations under Presidential Regulation No. 98/2021[1,16]. It prevents double-counting of achievements, provides public access to data, supports policy formulation, and facilitates funding mobilization for climate actions in line with the Paris Agreement's transparency framework[1].

Many platforms support CBT and climate change actions, but they are not linked to one another. The only systems that connect are KRISNA and SMART, which have a linked process from planning to budget execution. AKSARA and SRN have no standard code that connects outputs or even programs conducted by the ministries. These two platforms have even been developed and operated by different ministries, MoDP/Bappenas and MoEF. This makes monitoring and evaluating the results of mitigation actions regarding GHG emissions challenging.

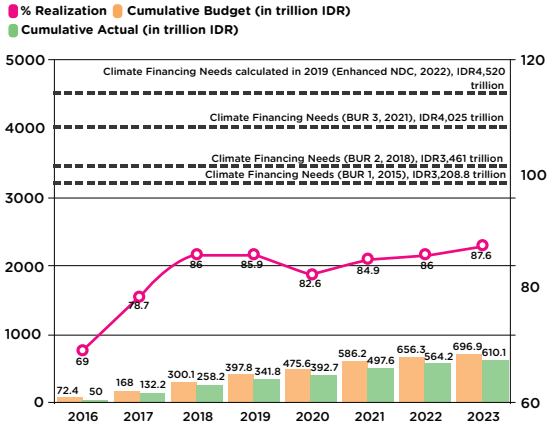
With the system designed as above, CBT has managed to record a portion of the state budget for climate finance from 6 ministries/agencies in 2016 and 14 ministries/agencies in 2023, and typically has a lower budget execution rate than the allocated amount. As shown in Figure 2A, climate-related budget allocations peaked at IDR 132.1 trillion in 2018, with a high realization rate of 95.4%[13]. However, after this peak, allocations decreased to 65.5% in 2020[17,18]. Realization rates also declined from 2018, indicating reduced spending effectiveness. The declining budget and lower realization rates may be due to budget reprioritization in the government, economic constraints, or challenges in implementing and monitoring climate programs. The World Bank assessed that the aggregate expenditure outturn was between 85 and 115% of the approved aggregate budgeted expenditures for 2018-2020[19]. This improved over 2021-2023, where realization rates were between 90% and 110% (Figure 2A). To manage consistency, the FPA-MoF advises ministries/agencies (K/L) to tag outputs that meet CBT criteria, with re-tagging opportunities available throughout the year. However, this effort faces technical challenges, including leadership commitment, tagging operator knowledge, and human errors[18].

Figure 2. Climate Budget Tagging Results Over the Years, 2016-2024

A. Portion of State Budget & Outcome Percentage



B. Cumulative Allocation & Realization Percentage

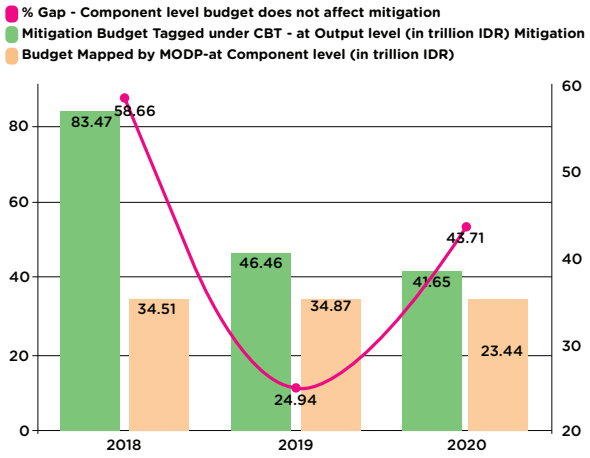


Source: FPA MoF [6,11,13] and Govt. of Indonesia, [4,9,20,21] processed data

CBT practices reflect competing fiscal priorities and limited resources for addressing climate change. Figure 2A also highlights the relatively low proportion of Indonesia's climate finance budget, resulting from CBT, compared to the total state budget. Between 2016 and 2019, this proportion ranged from 2.8% to 5.7%, peaking in 2018 but declining afterward. By 2020, the proportion had dropped to 2%, rising again to 3.8% in 2021 and declining until 2023 (1.3%). The data shows that while CBT effectively identifies climate-related spending, the allocated and realized climate budget remains consistently low, under 6% of the state budget, highlighting the urgent need for increased fiscal commitment to climate action. Moreover, the cumulative budget outcome of central government spending on climate change actions from 2016 to 2023 has reached IDR 610.1 trillion. The average annual expenditure on climate change actions during this period was IDR 76.3 trillion, accounting for 3.2% of the state budget (APBN)[18]. The ministries' voluntary CBT process is driven by their knowledge and understanding of how tackling climate change has become urgent[18]. A lack of knowledge among the officers responsible for the tagging process in CBT, due to frequent personnel changes and information gaps regarding the tagging process, hinders the retention of institutional knowledge, which may negatively impact the budget allocated for the fiscal year. This is one of the reasons for the declining rates of CBT in the state budget[18]. Despite clear guidelines, challenges remain in the ministry's adoption, with some ministries/agencies struggling to integrate the CBT process fully into their financial planning. Moreover, relying on manual data entry by line ministries increases the risk of inconsistencies and misreporting, highlighting the need for more automated and standardized tracking mechanisms to improve accuracy and reliability in climate budget reporting[18,19]. The Climate PEFA assessment highlights that while Indonesia's medium-term sectoral strategic plans (Rencana Strategis/Renstra) reflect national climate priorities, budget alignment with these strategies faces several challenges[19]. Significant deviations exist between medium-term budget estimates and sectoral costed programs, with no detailed breakdown of capital and recurrent costs. Annual budgets do not align with medium-term climate-related expenditure estimates, and financial notes lack explanations for deviations, undermining budget alignment with climate strategies[19].

Financing needed to meet Indonesia's climate goals is significantly higher than the allocated budget (Figure 2B). For instance, the required funding in 2015 (BUR 1) was IDR 3,208.8 trillion[20]. It increased to IDR 3,461 trillion in BUR 2 (2018) and IDR 4,025 trillion in BUR 3 (2021)[4,21]. By 2019, as reported on the Enhanced NDC, it was recalculated at IDR 4,520 trillion[1]. However, the cumulative spending allocated by the government to meet the climate goals through CBT was only IDR 610,1 trillion. This contrast shows that Indonesia's climate budget allocations and realizations consistently fall short of the funding required to achieve the 2030 targets. This funding gap underscores the need for innovative financing solutions and greater international support to bridge the deficit and accelerate progress toward Indonesia's climate commitments. According to BUR 3, the funding required for mitigation actions from 2018 to 2030 is estimated to be IDR 307.88 trillion annually on average[4]. Meanwhile, the total mitigation funding allocated from the state budget (including mitigation actions and co-benefits) for 2018 to 2023 amounted to IDR 218.92 trillion, averaging IDR 36.49 trillion annually[4]. Thus, the state budget has so far been able to cover only about 12.4% of the annual funding needed for mitigation actions[4].

Figure 3. Comparison Between CBT and MoDP Mapping on Government's Climate Funding for climate change efforts. A MoDPstudy on climate change mitigation financing found a significant gap between the MoF's reported CBT figures and the study's results[22–24]. As shown in Figure 3, CBT reported higher amounts in the mitigation budget for 2018-2020 compared to the MoDP's mitigation budget. This discrepancy arises because CBT tagging is done at the output level, while MoDP maps components under outputs to assess their actual contribution to climate change mitigation[22–24]. CBT recognizes budgets at the output level, potentially including indirect environmental impacts. This level is chosen for tagging as it provides sufficient information on development targets and budgets, making it easier to assess alignment with climate change mitigation and adaptation actions without requiring detailed checks. In contrast, MoDP mapping recognizes budgets at the component level, focusing on activities directly impacting GHG emission reduction, supported by emission calculations for each activity. As a result, MoDP's data is more detailed and accountable due to its robust basis in emission measurement. A 2014 FPA-MoF and CPI study found that nearly 75% of domestic climate funding supported "indirect" activities, such as policy development, research, and the establishment of measurement and reporting systems[25]. While this was relevant during the development of the national policy framework, such indirect spending has significantly decreased over the years. As shown in Figure 3, 2018, 58.66% of tagged mitigation budgets had no actual impact on mitigation, followed by 24.34% in 2019 and 43.71% in 2020.

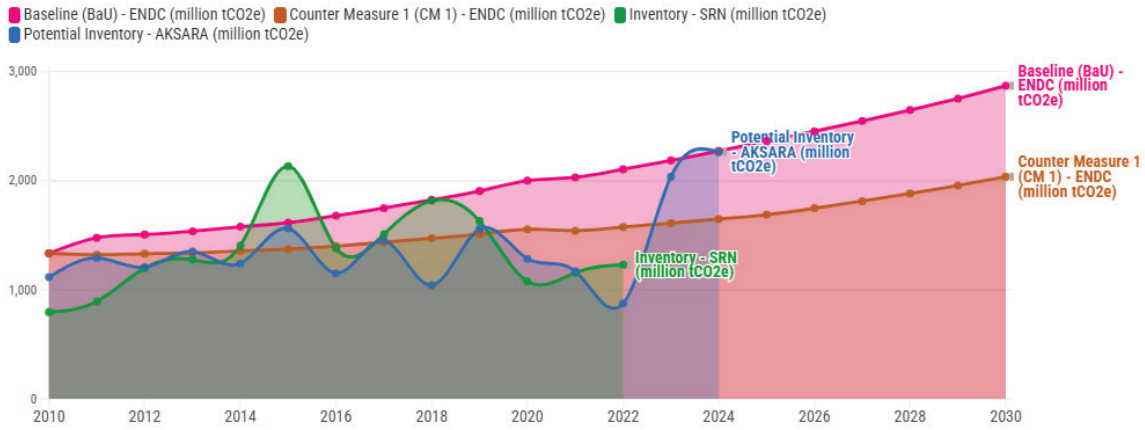


Source: FPA-MoF and MoDP, processed data

MoDP established the AKSARA system to track low-carbon development indicators, emission reduction potential, and emission intensity in 2013 for mitigation and in 2020 for adaptation, replacing manual methods. The MoEF's National Registry System (SRN), created in 2016, consolidates data from various sources, offering transparency and supporting the Paris Agreement. This system integrates with tools like the National GHG Inventory System and the Safeguard Information System for REDD+, ensuring public access to annual carbon emission reduction data. Integrating the key systems, KRISNA, SAKTI, AKSARA, and SRN, can facilitate more straightforward access, analysis, and sharing of climate finance data, accelerating collaboration and synergy in budget calculations and their impact on GHG emissions reduction and economic loss mitigation. However, **CBT in the KRISNA and SAKTI systems and mitigation results recorded in AKSARA and SRN are not directly linked.** Measuring the impact of emissions reductions from CBT funding efforts is challenging due to inconsistencies in metrics [26], overlapping initiatives [27], and difficulty linking outcomes to funding sources.[28] Additionally, monitoring limitations,[29] temporal disconnects,[30] project diversity,[31] and external factors complicate evaluations[27]. The lack of integration between CBT systems like KRISNA and SAKTI and emissions data systems like AKSARA and SRN leads to difficulty tracking and evaluating climate funding impacts. Inconsistent metrics and overlapping initiatives reduce accountability and obscure the contribution of specific projects to emission reductions. This disconnect hinders transparency, making linking financial data with climate outcomes difficult. Insufficient monitoring and delayed reporting further complicate evaluations of budget effectiveness in achieving climate goals. These issues increase the risk of greenwashing, where organizations may claim environmental progress without reliable data to substantiate it.

Despite the disconnect between climate funding tagged by the government and the emission data, AKSARA and SRN can be used as a comparison tool for potential emission reduction and GHG emission inventory. Based on the actual SRN inventory, the performance results suggest significant downturn trends have been achieved since the 2015 peak. However, the reductions may appear less significant if performance is assessed against AKSARA's potential inventory. This phenomenon is different than the metrics measured by AKSARA and SRN, and it can be noted that AKSARA is a projection of potential GHG emissions. At the same time, SRN reflects verified emission reductions from climate mitigation actions, but due to its reliance on voluntary reporting by registered agencies, the data is limited—only available up to 2021/2022—and likely underreported. In the case of emission inventory, projections tend to be reported as lower than the actual numbers. Figure 4 shows that the SRN inventory fluctuates but generally stays below the CM1 target emission inventory after 2020, while the potential inventory by AKSARA consistently exceeds the CM1 target throughout the period. AKSARA's potential inventory frequently maintains a higher state than the CM1 target, suggesting more conservative assumptions about emissions reductions in its projections. The differing inventories between SRN (MoEF) and AKSARA (Bappenas/MoDP), measured against the CM1 target of the Enhanced NDC (ENDC), reveal significant challenges in coordination and policy alignment. **The SRN inventory's alignment with or below the CM1 target suggests that MoEF considers actual reductions sufficient to meet climate goals. In contrast, AKSARA's consistently higher potential inventory indicates more cautious projections, implying that MoDP anticipates greater emissions or less effective mitigation.**

Figure 4. Indonesia's GHG Emission Inventory Compared to Countermeasure 1 (CM 1) & Business as Usual (BaU)



Source: MoEF,[32,33] and MoDP/Bappenas [15] processed data

This situation can lead to conflicting narratives regarding progress—one institution might report success in meeting NDC targets, while the other warns of underperformance. Such misalignment complicates cross-agency collaboration, accountability, and policy evaluation. To address this, harmonizing data collection methodologies, defining a unified baseline, and setting clear, mutually agreed-upon targets[21] are essential to ensure consistency in national climate reporting and effective policy implementation.

EXPANDING CBT IN PFM: INVOLVEMENT OF SUBNATIONAL GOVERNMENTS IN CLIMATE FUNDING

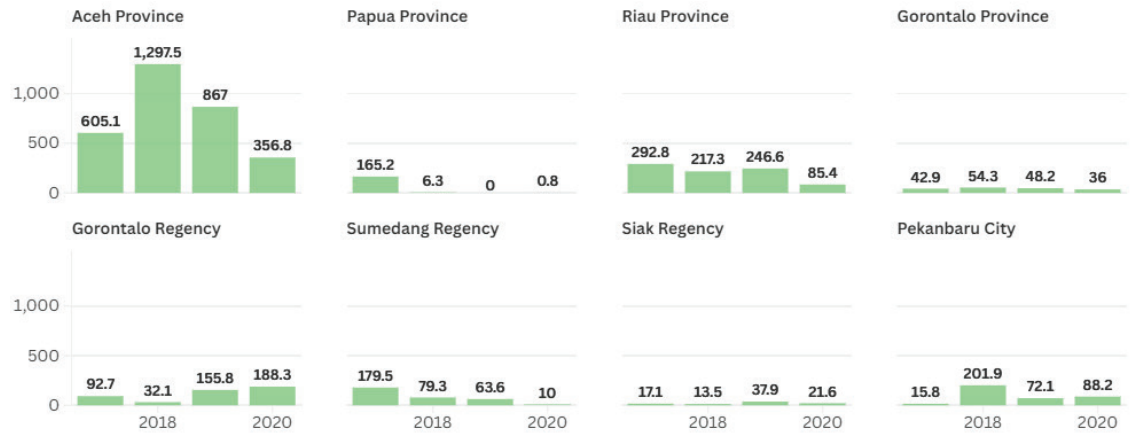
The World Bank's Climate PEFA assessment for Indonesia highlighted that the legal framework primarily assigns climate-related responsibilities to provincial governments under Law No. 23/2014, leaving district-level mandates ambiguous, particularly in the forestry, energy, and marine sectors.[19] This decentralization has created implementation challenges, with subnational governments (SNGs) facing unclear roles in addressing climate change. Considering this state of governance, no mandate or regulation explicitly requires subnational governments to track their expenditures fully in preparing their regional revenue and expenditure budgets. In other words, CBT in Indonesia has only been implemented at the central government level. To start the initiative, FPA-MOF issued guidelines on regional climate budget tagging (RCBT) in 2019 and piloted the implementation in 11 SNGs (including seven provinces and four districts/municipalities) in 2017[19]. These pilot regions include the provinces of Gorontalo, Riau, West Java, Aceh, North Kalimantan, Papua, and West Papua, as well as the regencies of Gorontalo, Sumedang, Siak, and the city of Pekanbaru[18,24]. Therefore, implementation is still far from comprehensively covering all 508 districts/cities and 33 provinces in Indonesia.[22] In addition, there is still no requirement for CBT in the annual planning and budgeting guidelines for the SNGs issued by the Ministry of Home Affairs (MoHA).

21 The state of different targets among different govt. documents and why
22 Currently, 38 provinces and 514 districts/cities.

Unlike CBT at the central government level, supported by a well-integrated system from the planning process (KRISNA application) to budgeting (SAKTI application), RCBT remains a manual process conducted entirely by the MoF. FPA-MoF manually reviews regional development planning documents, including the Regional Medium-Term Development Plan (RPJMD), the Regional Government Work Plan (RKPD), and the Annual Work Plan of Regional Government Agencies. From these planning documents, the MoF manually tags outputs related to climate change. The tagged results are then validated and disseminated to the pilot regional governments.

Data from the implementation of RCBT between 2017 and 2020 indicate that budget allocations for climate change-related activities remain relatively low, averaging between 0% and 6.4% of each region's total budget allocation. Additionally, the tagging results reveal inconsistencies in climate-related budget allocations, with specific years showing substantial allocations for climate-related programs. In contrast, in other years, the funding for such initiatives drops significantly or is even eliminated.

Figure 5. Regional Climate Budget Tagging (RCBT) at Early Stage (2017-2020)



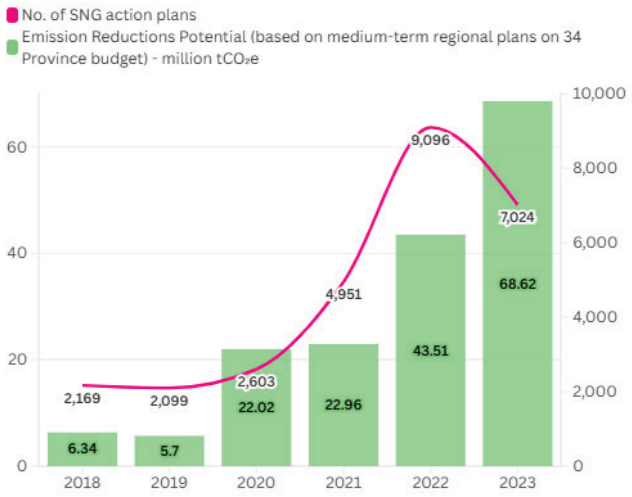
*Source: FPA-MoF (unpublished dataset), processed data *) Typed in red are the range of percentages of RCBT to the total regional budget **) West Jawa, North Kalimantan, and West Papua Provinces did not provide complete data on their RCBT report.*

Several factors hinder the full implementation of RCBT by local governments, including the lack of a legal mandate, the absence of an auto-tagging system, overlapping institutional responsibilities, and the limited capacity of local government staff. There is no regulatory framework that explicitly mandates local governments to conduct CBT. Unlike the central government, local governments lack an integrated system to facilitate automatic climate budget tagging. The MoF primarily manages budget transfers to regions. At the same time, other local budgeting policies fall under the MoHA, necessitating stronger coordination between these ministries to ensure effective RCBT implementation. Additionally, many local government officials lack adequate technical capacity to perform climate budget tagging effectively, and without sufficient capacity-building initiatives, implementing RCBT at the local level remains suboptimal.

Although RCBT is not yet widely implemented, local governments have already been mandated to support SDGs, as stipulated in Presidential Regulation No. 59 of 2017. Under this regulation, every region must develop a Regional Action Plan for Greenhouse Gas Emission Reduction (RAD-GRK), incorporated into their RPJMD and RKPD.

Figure 6. Sub-National Governments Action Plans and Emission Reductions Potential - AKSARA

According to an assessment by the MoDP/Bappenas, as of 2019, a total of 2,099 climate action plans had been formulated by regional governments. This number increased significantly by 2022, with 9,096 climate action plans recorded (Figure 6). If these action plans are fully implemented, they could collectively reduce GHG emissions by 68.62 million tCO2e. A breakdown of the highest number of climate action plans (2019-2023) by region includes: (i) East Java (5,246 action plans); (ii) Central Java (4,549 action plans); and (iii) West Java (3,837 action plans). Meanwhile, the regions with the highest potential for CO2 emission reductions from these action plans are (i) South Sumatra (13.11 million tCO2e per year), (ii) East Java (7.8 million tCO2e per year), and (iii) West Java (3.1 million tCO2e per year).



Source: FPA MoF, unpublished dataset; processed data

These findings indicate that regional governments are already allocating budgets for climate-related programs and activities. The MoDP/Bappenas and the MoF assessments highlight that RCBT could be effectively implemented at the local government level, and its impact on carbon emission reduction could be measured. Withouta clear measurement mechanism, however, local government efforts and budget allocations for climate action may not yield optimal impacts due to the absence of a transparent evaluation framework.

Aside from the RCBT, climate-responsive fiscal transfers such as Dana Alokasi Khusus (DAK/Specialized Allocated Funds), environment, forestry funds, and the DBH-DR help align local spending with national climate goals. However, implementation reports are necessary for transparency and accountability.[19] Central government transfers are key funding sources for climate-related actions at the subnational level. These funds are subject to reviews and audits to ensure they align with their intended outputs, following Minister of Finance Regulation No. 121/2018 guidelines and Director General of Fiscal Balance Regulation No. 6/2018. Monitoring and reporting systems like OM-SPAN track the use and realization of these transfers. Still, there is limited evidence of specific fraud investigations or comprehensive audits on climate-targeted fund usage[19]. The good news is that the Climate PEFA assessment also points out that SNGs have frameworks for climate investment, procurement, and non-financial asset management, despite climate budget tracking at the subnational level remaining underdeveloped.

STRENGTHENING THE ROLE OF PARLIAMENT IN ADVANCING CLIMATE BUDGET TAGGING AND CLIMATE FINANCE GOVERNANCE

Indonesia's legislative bodies—the DPR, DPD, and MPR—are crucial in ensuring that the country's climate finance systems, including CBT and RCBT, function effectively and transparently. While executive ministries implement climate budgeting, parliamentarians have the mandate and opportunity to shape outcomes through legislation, budget oversight, political signalling, and constituency representation.

The findings of this study, reinforced by the PEFA Climate Assessment, reveal significant governance gaps: inconsistent budget allocations, limited subnational uptake, fragmented data systems, and notably weak legislative scrutiny over climate budgets and audits.[19] Addressing these requires systemic reforms and active parliamentary engagement.

One of parliament's most direct contributions is through legislative reform. CBT and RCBT lack a strong legal basis and remain voluntary practices. Parliament could consider initiating revisions to core laws, such as the Law on State Finance and the Law on Environmental Protection and Management, or even draft a climate change management bill to mandate climate budget tagging across all government levels. Embedding climate finance tracking in legislation would move climate tagging from discretionary to compulsory, ensuring it supports national climate strategies like the Enhanced NDC, LCDI, and LTS-LCCR 2050.

Parliament could also promote performance-based climate budgeting. The PEFA noted a lack of linkage between climate-tagged spending and measurable outcomes.[19] Parliamentarians could propose regulations requiring ministries to connect expenditures with greenhouse gas reductions, resilience improvements, or adaptation goals, using verifiable data platforms such as AKSARA and SRN.

Budget scrutiny during the annual APBN deliberations offers another critical opportunity. The Budget Committee (Banggar) and sectoral commissions could ask for CBT disaggregation in the Financial Notes (Nota Keuangan) and require ministries to justify climate-tagged budgets based on their contribution to climate outcomes. Parliament could also consider integrating climate indicators into mid-year and year-end budget realization reports. These reforms directly address PEFA's finding that climate dimensions are insufficiently scrutinized in Indonesia's budget processes[19].

Oversight could also be strengthened by Parliament considering holding regular hearings focused on climate finance performance, assessing discrepancies in CBT reporting, and reviewing the alignment of expenditures with climate targets. Critically, it could consider requiring the Supreme Audit Board (BPK) to explicitly audit climate-tagged spending, including evaluating the effectiveness of climate programs and risk management—another key PEFA recommendation[19].

Beyond formal mechanisms, parliamentarians can use political signalling to elevate climate issues in public debates and party agendas. Commissioning policy papers via research support units like PA3KN can spotlight gaps in adaptation funding and regional disparities, helping to sustain political momentum for reforms.

Representation is another vital avenue for advancing climate budgeting. Parliamentarians, particularly those from vulnerable regions, can bridge national and local governance gaps. By facilitating dialogues between central agencies and local governments, they can promote RCBT adoption, ensure equitable climate funding allocations through instruments like DAK Lingkungan and DBH-DR, and monitor the use of these funds to support regional climate actions.

To improve coordination across government, Parliament can advocate for integrating budget (KRISNA, SAKTI) and climate outcome (AKSARA, SRN) systems, promoting standardized coding and shared reporting. This would address PEFA's finding on data fragmentation and help link financial inputs more systematically to climate results.

Capacity-building efforts are also essential. Parliament can champion the allocation of APBN funds for the technical training of ministry and regional staff responsible for tagging and climate finance reporting. Endorsing partnerships with international organizations such as UNDP and the World Bank would help accelerate institutional capacity-building at all levels.

Indonesia's legislative bodies can tailor their mandates to these priorities. The DPR, with its core budget and law-making functions, could focus on codifying climate mandates into law, scrutinizing tagged budgets and audits, and ensuring performance-based climate finance. The DPD, representing regional interests, could investigate the possibility of institutionalization of RCBT and fairer distribution of climate-responsive fiscal transfers, while the MPR could consider issuing national-level recommendations (Ketetapan MPR/TAP MPR) affirming the constitutional importance of sustainable and climate-resilient development.

In short, Indonesia's Parliament could evolve from being a fiscal reviewer to an active climate governance enabler. Parliamentarians could transform climate budget tagging into a credible, outcome-oriented governance tool by integrating climate objectives into legislative work, budget scrutiny, oversight, public engagement, and constituency representation. These reforms are critical not only to achieving Indonesia's NDC targets but also to strengthening PEFA Climate scores—especially in legislative scrutiny (CRPFM-4)—and ensuring that public resources are used efficiently, transparently, and sustainably for the country's low-carbon, climate-resilient future[19].

CONCLUSION

Indonesia's CBT system has improved transparency and accountability by tracking climate-related expenditures in national budgets since its inception in 2014. Despite expanding to include more ministries and agencies, the system faces challenges such as inconsistent budget allocations, manual processes, and difficulties linking expenditures to measurable climate outcomes. This has limited the effectiveness of CBT in achieving Indonesia's climate commitments, including the Enhanced NDC targets. Better integration between budget tagging and emission tracking systems like AKSARA and SRN is needed to measure the impact of climate-related spending accurately.

At the subnational level, the implementation of RCBT is still early. Initiatives piloted in 11 regions highlight low and inconsistent budget allocations for climate actions, averaging

between 0% and 6.4% of total regional budgets. Barriers to effective RCBT include the absence of a regulatory mandate, reliance on manual tagging by the Ministry of Finance, overlapping institutional responsibilities, and limited technical capacity among local officials. Furthermore, coordination between the Ministry of Finance and the Ministry of Home Affairs needs to be strengthened to improve RCBT implementation and integration into regional planning and budgeting processes.

Despite these challenges, frameworks for climate investment, procurement, and non-financial asset management exist at the subnational level. However, the lack of robust climate budget tracking and debt frameworks hinders the comprehensive evaluation and optimization of climate expenditures. Addressing these gaps through improved regulatory frameworks, capacity building, and system automation will be crucial for scaling up climate finance and enhancing the impact of both national and regional climate initiatives.

Strengthening the role of Indonesia's Parliament is critical to advancing climate budget tagging and improving climate finance governance. Through proactive legislative reform, rigorous budget scrutiny, targeted oversight of climate-related expenditures, and strategic constituency engagement, parliamentarians can transform climate finance from a procedural exercise into a results-driven instrument. By embedding climate considerations across the budgeting cycle, with performance-linked accountability, and promoting better data integration and transparency, the DPR, DPD, and MPR can directly address key weaknesses identified in the PEFA Climate Assessment. A more empowered and climate-responsive Parliament is vital for raising Indonesia's Climate PEFA scores and ensuring that public resources meaningfully contribute to a low-carbon, resilient, and sustainable national future.

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Electric tower and creek, Sindang Jaya, Banten, Indonesia (Photo: Tom Fisk, Dec 2018)

4

ACCELERATING INDONESIA'S ENERGY TRANSITION: THE CRITICAL ROLE OF PARLIAMENT IN CLIMATE ACTION

DR ARI MULIANTA GINTING AND MS VENTI EKA SATYA

ABSTRACT

Climate change poses severe threats to Indonesia, including rising sea levels, extreme weather events, and economic disruptions, disproportionately affecting vulnerable communities. As the world's seventh-largest greenhouse gas emitter, Indonesia's heavy reliance on coal and slow renewable energy transition exacerbate these challenges. Despite commitments like the Just Energy Transition Partnership and a net-zero emissions target by 2060, progress remains hindered by financial constraints, regulatory gaps, and infrastructural limitations. The Indonesian Parliament plays a pivotal role in accelerating climate action through legislative and policy interventions. Key priorities can include enacting the Renewable Energy Bill to provide a clear regulatory framework, establishing carbon pricing mechanisms (carbon trade and tax), and reallocating fossil fuel subsidies to renewable energy projects, and revision of the Law in Climate Change in Indonesia. Additionally, Parliament can ensure a just transition by safeguarding affected workers through reskilling programs and social protection. Strengthening oversight of carbon markets and integrating climate resilience into national policies are critical for aligning Indonesia with global climate goals. By advancing robust legislation by revising the Law on Climate Change in Indonesia and the New Bill of EBET, fostering green investments, and promoting reasonable regulation on climate change in Indonesia, Parliament can drive Indonesia's transition to a sustainable, low-carbon economy. Immediate action can be taken to mitigate climate risks, enhance energy security, and secure long-term socio-economic stability. In terms of oversight and budgeting, the Indonesian House of Representatives can continue to monitor the carbon trading mechanism and the preparation of the carbon tax roadmap, which is important to ensure that the carbon trading and taxes imposed do not have a negative impact on the related industry in addition to increasing fiscal revenue.

INTRODUCTION

Climate change has become a pressing concern globally, influencing ecosystems, human health, and economic stability. Indonesia, as an archipelagic nation with vast natural resources, faces heightened risks due to rising sea levels, extreme weather events, and

increasing natural disasters. According to projections made by the Asian Development Bank, excessive flooding could impact 1.4 million people by 2035-2044, and by the end of the century, 4.2 million people living near coastal areas could be permanently displaced. These environmental threats are compounded by economic repercussions, such as disrupted agricultural production and heightened energy insecurity, which necessitate immediate government intervention [1].

Indonesia's substantial contribution to global greenhouse gas emissions further complicates these challenges. As of 2022, Indonesia is ranked as the seventh-largest emitter worldwide, heavily reliant on fossil fuels—particularly coal—to meet its energy needs [1]. This dependence has led to a significant increase in per capita emissions. While the international community calls for urgent climate action, Indonesia grapples with the dual challenge of reducing emissions while expediting a just and sustainable energy transition.

Recent studies highlight the importance of Indonesia's energy transition within global climate policy frameworks. The United Nations' Sustainable Development Goals (SDGs) emphasize the shift to renewable energy as a critical step in mitigating climate risks [2]. In alignment with these goals, Indonesia has pledged to achieve net-zero emissions by 2060. However, progress has been slow due to financial constraints, policy inconsistencies, and infrastructure barriers, underscoring the need for stronger legislative and governmental support. One of the causes is fossil fuel consumption, which in Indonesia still dominates total national energy consumption. According to the Statistical Review of World Energy 2024, primary energy consumption in Indonesia in 2023 amounted to 10.11 exajoules and was dominated by coal – 42.7%, followed by oil – 30.7%, natural gas – 16.2%, renewable energy – 8.2%, and hydroenergy – 2.2% [3]. In 2024, the Indonesian government allocated energy subsidies of USD 11,5 billion, consisting of USD 7 billion for subsidies for Fuel Oil and Liquified Petroleum Gas, and IDR73.6 trillion for electricity subsidies. However, the realization of energy subsidies and compensation until the end of 2024 reached IDR386.9 trillion, an increase of 51.95% compared to the initial target in the 2024 State Budget (APBN) of IDR185.9 trillion.

Indonesia's participation in the Just Energy Transition Partnership (JETP) during its 2022 G20 presidency marked a significant milestone in its commitment to decarbonization. This USD20 billion agreement aims to accelerate Indonesia's shift away from coal and bolster renewable energy investments [2]. Despite these efforts, substantial obstacles remain, including technological, political negotiations, and social equity considerations in affected communities.

Within this framework, the Indonesian Parliament plays a crucial role in shaping energy policies and ensuring their implementation. Parliament has the legislative authority to drive the energy transition by enacting comprehensive laws, providing tailored incentives, and overseeing effective regulatory measures. Finalizing the Renewable Energy Bill (RUU EBET), reallocating subsidies from fossil fuels to renewable sources, and encouraging investment in clean energy technologies are critical steps that Parliament can consider prioritizing [4]. This policy brief explores the challenges posed by climate change, the urgency of transitioning to renewable energy, and the legislative pathways through which the Indonesian Parliament can lead the country toward a sustainable and resilient future.

DISCUSSION

THE IMPACT OF CLIMATE CHANGE ON INDONESIA

Indonesia is among the countries most vulnerable to the devastating effects of climate change. As an archipelagic nation, it faces threats such as rising sea levels, extreme weather events, and prolonged droughts, which disrupt agricultural production and threaten food security. According to the Asian Development Bank (ADB), between 2035 and 2044, approximately 1.4 million Indonesians will be impacted by extreme flooding. Furthermore, 4.2 million people living along the coast could face permanent inundation by 2070-2100 due to rising sea levels [5]. Such outcomes pose risks to public safety, economic stability, and the overall well-being of the population, particularly among the most vulnerable groups, such as those living in poverty.

The effects of climate change extend beyond environmental destruction; they also affect economic productivity and increase the cost of living by raising the likelihood of food insecurity and the expense of purchasing energy. These challenges highlight the importance of not only mitigating climate change impacts but also adapting to its consequences through the implementation of strategic policies and investments. The urgency to transition to a sustainable energy system and reduce carbon emissions is crucial for Indonesia's economic resilience and long-term development.

KEY CONTRIBUTORS TO GREENHOUSE GAS EMISSIONS

Indonesia is a significant emitter of greenhouse gases, primarily due to deforestation and land-use change, the reliance on fossil fuels for energy production, and the transportation sector. Large-scale deforestation for agricultural expansion and urban development contributes substantially to carbon dioxide emissions. The destruction of forested areas releases stored carbon into the atmosphere, exacerbating climate change. The rapid loss of natural carbon sinks diminishes Indonesia's ability to absorb emissions, making climate mitigation more challenging [6].

Another major contributor is Indonesia's energy sector, which depends heavily on coal-fired power plants. In 2022, Indonesia recorded the highest increase in coal-based emissions per capita among G20 nations, with a 56% increase between 2015 and 2022 [7]. The transportation sector also plays a significant role in greenhouse gas emissions, as the country remains dependent on fossil fuel-powered vehicles, leading to both air pollution and rising carbon emissions. Without significant efforts to curb emissions in these areas, Indonesia will struggle to meet its climate commitments under the Paris Agreement.

SLOW PROGRESS IN ENERGY TRANSITION

Despite Indonesia's commitments under international frameworks such as the Paris Agreement, the adoption of renewable energy has progressed slowly. The Institute for Essential Services Reform (IESR) reports that the growth of renewable energy remains insufficient, as the expansion of coal-fired power plants continues to overshadow clean energy development. In 2022, an additional 4-gigawatt capacity of coal-based power was introduced in Java, further entrenching fossil fuel reliance [8].

Financial constraints, regulatory inconsistencies, and inadequate infrastructure remain significant barriers to scaling up renewable energy projects. The reliance on coal remains deeply embedded in Indonesia's economy, with production reaching a record 775 million tons in 2023, surpassing government targets [9]. The continued focus on coal exports further delays the transition to clean energy, making it imperative for policymakers to implement stronger regulations and incentives to promote renewable energy investments.

URGENCY OF THE ENERGY TRANSITION

The energy transition is not only critical for combating climate change but also essential for achieving energy security and economic resilience. The "Asta Cita" document highlights climate change as a strategic challenge requiring immediate attention, emphasizing the dual goals of reducing dependence on fossil fuels and transforming Indonesia into a global leader in green energy [10]. Economic research indicates that transitioning to renewable energy offers substantial economic benefits. Studies by the Center of Economics and Law Studies (CELIOS) and Greenpeace Indonesia estimate that renewable energy could contribute USD 269.6 billion to national economic output and add USD 181,6 billionto GDP over the next decade. Additionally, this transition could generate 1.88 million new jobs, nearly offsetting the 1.94 million jobs lost in the fossil fuel sector [11].

In addition, Indonesia's energy subsidy budget is also quite a burden on the State Budget. In 2024, the energy subsidy and energy compensation budget allocation reach USD 20,36 billion. This figure is lower than the Education budget (USD 40,78 billion), Social protection (USD 30,39 billion), and infrastructure budget (USD 26,09 billion), and higher than the health budget (USD 11,51 billion). Given the large energy subsidy budget, it is highly relevant to develop renewable energy.

BARRIERS AND SOLUTIONS

Several obstacles hinder Indonesia's transition to renewable energy. Financial constraints remain a significant challenge, with adequate funding for renewable energy projects such as the Just Energy Transition Partnership (JETP). Adequate funding is a significant challenge because large-scale renewable energy projects, such as those under the Just Energy Transition Partnership (JETP), require substantial financial investment. Indonesia faces difficulties in securing this level of funding due to limited domestic financial capacity, making it essential to explore innovative financing mechanisms and strengthen international collaboration to bridge the existing funding gaps. Innovative financing mechanisms and international collaboration are necessary to bridge these funding gaps [7]. Additionally, regulatory bottlenecks create uncertainty for investors, discouraging large-scale investment in renewables. Streamlining policies and reducing bureaucratic obstacles are essential to unlocking Indonesia's renewable energy potential.

Infrastructure deficiencies also present a major barrier. Limited infrastructure for renewable energy generation and distribution can be addressed through targeted investments. Expanding the national grid to accommodate renewable energy sources and integrating smart grid technologies can enhance energy efficiency and reliability [12]. Addressing these barriers requires coordinated efforts between government agencies, private sector stakeholders, and international partners to accelerate progress toward a sustainable energy future.

THE ECONOMIC POTENTIAL OF A GREEN ECONOMY

The shift to renewable energy offers significant economic advantages for Indonesia. Investments in solar panels, wind turbines, and bioenergy can stimulate local industries, create employment opportunities, and reduce dependence on imported fossil fuels. Moreover, global market trends indicate increasing demand for clean energy solutions, positioning Indonesia as a potential leader in the green economy. A transition to renewables will not only mitigate environmental risks but also enhance Indonesia's economic competitiveness on a global scale [13]

THE NEED FOR A JUST TRANSITION

As Indonesia undergoes its energy transition, it is crucial to ensure a just transition that protects workers and communities reliant on the fossil fuel industry. Providing reskilling programs, social safety nets, and alternative employment opportunities will help mitigate social impacts. A well-planned transition that considers the needs of affected workers and communities will be essential for maintaining social stability and economic inclusion [14].

THE ROLE OF THE INDONESIAN HOUSE OF REPRESENTATIVES

The Indonesian House of Representatives has three main roles, namely legislation, budgeting, and supervision. In terms of legislation, the Indonesian House of Representatives plays an important role in accelerating the energy transition through the ratification of the Renewable Energy Bill (RUU EBET), which aims to build a regulatory framework to encourage the development of renewable energy, and meet climate and net zero emission targets, attract investment, and create long-term energy security. Without clear regulations, Indonesia risks being left behind in the green energy revolution that is developing globally. Key policy initiatives include the establishment of a special agency to manage renewable energy projects, including ammonia as a new energy source, and increasing local content requirements [15].

In Law Number 7 of 2021, concerning the Harmonization of Tax Regulations, it has been stipulated that the government will impose a Carbon Tax in 2025. However, until now the derivative regulations have not been formed, and the roadmap has not been prepared. Parliament has a role to encourage the government to prepare its derivative regulations and ensure that the tariffs set do not have a negative impact on related industries, such as power generation, automobiles, and so on. In addition, the legal framework can be strengthened to prevent carbon leakage and ensure that carbon trading revenues are distributed to climate adaptation and mitigation programs. Parliament can carefully draft legislation that includes gradual implementation, tax exemptions for vulnerable sectors, and support for small and medium enterprises (SMEs) that switch to low-carbon technologies [16]. This legislative approach ensures that the carbon tax does not disproportionately impact certain industries while achieving the expected environmental benefits. Strengthening the legal mandate for government institutions in implementing carbon market policies will be important in supporting investor credibility and confidence [17]. This includes aligning carbon pricing strategies with the ASEAN carbon market initiative to encourage cross-border trading of emission allocations. Through legislative action, Indonesia can position itself as a regional leader in carbon trading, which drives economic benefits while ensuring environmental sustainability [1].

Carbon trading, as a market-based instrument, allows entities to buy and sell emission allocations, thus encouraging a cost-effective mechanism to reduce greenhouse gas (GHG) emissions [17]. In terms of supervision, the Indonesian Parliament plays an important role in overseeing and ensuring transparency and efficiency in the carbon market. Effective carbon trading regulations are essential to align Indonesia's emission reduction commitments under the Paris Agreement with sustainable economic growth [1]. Likewise, with carbon prices and carbon taxes, the Indonesian Parliament through the Ministry of Finance, Forestry, and Energy and Mineral Resources, can help ensure that the prices set do not disrupt the sustainability of the industry and can be an incentive for entrepreneurs. One of the main challenges in implementing a carbon tax is preventing economic disruption, especially in industries that require a lot of energy. The introduction of a national emissions trading system (ETS) provides incentives for companies to invest in cleaner technologies [19]. Parliament has a role to ensure that the framework includes clear compliance mechanisms, a strong monitoring system, and mechanisms to prevent market manipulation.

On a fiscal and budgetary perspective, Indonesia's parliament plays a critical role in enacting a carbon tax policy that balances economic growth with environmental sustainability. An effective carbon tax regime should be progressive, sector-sensitive, and in line with international best practices [18]. From a fiscal perspective, a well-designed carbon tax can generate substantial revenues that can be channeled to green infrastructure, renewable energy development, and social programs that support communities impacted by climate policies [20]. Parliamentary oversight is critical in ensuring that carbon tax revenues are managed transparently and directed toward climate mitigation and adaptation measures. This requires the establishment of a legally binding framework that mandates revenue recycling and equitable redistribution [19].

In addition, integrating the carbon tax with Indonesia's existing fiscal policies would enhance its effectiveness. For example, the parliament could ensure that carbon tax revenues offset reductions in other taxes, such as corporate income tax or tax on added value to support economic competitiveness [17]. Aligning carbon tax policy with Indonesia's broader fiscal reforms will make the transition to a low-carbon economy smoother and more sustainable. The introduction and enhancement of carbon trading and carbon tax mechanisms are critical in moving the country towards a low-carbon economy while supporting economic stability.

The urgency of revising Indonesia's Climate Change Law is further underscored by the need to demonstrate a comprehensive carbon pricing mechanism that includes carbon trading and carbon taxation. The Parliament can therefore take an active role in ensuring that the revised law incorporates best practices in carbon pricing, is in line with international climate commitments, and offers clear guidance on revenue allocation [20]. This can include immediate revision of climate law, establishing a clear carbon pricing mechanism, and ensuring that policy implementation is effective. Through strong legislative and oversight functions, the Parliament can drive Indonesia's transition to a resilient and sustainable future. Actions to consider include not only revising the Climate Change Law but also integrating a comprehensive carbon pricing framework that ensures transparency, efficiency, and sustainability.

CONCLUSION

Indonesia faces significant climate change challenges, including rising sea levels, extreme weather events, and economic disruptions that threaten national stability. As the seventh-largest greenhouse gas emitter, Indonesia is still heavily dependent on fossil fuels, particularly coal, despite its commitment to achieving net-zero emissions by 2060. While international agreements, such as the Just Energy Transition Partnership (JETP), provide financial support for transitioning to renewable energy, progress is still slow due to financial constraints, regulatory inconsistencies, and inadequate infrastructure.

The energy transition presents a dual opportunity: mitigating the adverse effects of climate change while fostering economic growth through job creation, GDP expansion, and enhanced energy security. However, the transition to clean energy requires comprehensive policy interventions and legislative support to ensure effective implementation. The Indonesian Parliament plays a crucial role in shaping and enforcing policies that accelerate renewable energy adoption, address regulatory bottlenecks, and promote investments in sustainable energy sources.

Key legislative actions, such as enacting the Renewable Energy Bill (RUU EBET) and revising the Law on Climate Change in Indonesia, reallocating fossil fuel subsidies, and strengthening carbon pricing mechanisms through carbon trade and carbon tax policies, are essential to achieving Indonesia's climate commitments. The Parliament can also ensure transparency and accountability in carbon market regulations, integrating international best practices to position Indonesia as a regional leader in climate governance. Enhancing oversight mechanisms and showing clear fiscal incentives for green investments will further drive the energy transition forward.

Ultimately, the Indonesian Parliament should consider taking the initiative in revising climate-related legislation, reinforcing carbon pricing frameworks, and ensuring a just transition for workers and communities affected by the shift to renewable energy. By implementing strong regulatory measures, supporting sustainable economic policies, and fostering global cooperation, Parliament can play a pivotal role in ensuring Indonesia's resilience against climate change while driving long-term economic sustainability and environmental protection.

RECOMMENDATIONS

The Indonesian Parliament should consider strengthening legislative frameworks by speeding up the enactment of the Renewable Energy Bill (RUU EBET) to provide a clear legal foundation for renewable energy investments. This includes setting ambitious renewable energy targets, streamlining permitting processes, and creating incentives for private sector participation in clean energy projects. Additionally, Parliament can introduce and oversee a comprehensive carbon pricing mechanism, including an emissions trading system (ETS) and a carbon tax. These should align with international best practices and ensure that revenues generated are reinvested into climate adaptation projects, green infrastructure, and workforce transition programs. Furthermore, reallocation of fossil fuel subsidies can help to support the clean energy transition. Parliament can push for the gradual shift of financial support from fossil fuels to solar, wind, and bioenergy

initiatives, helping to create a more competitive renewable energy market while reducing Indonesia's carbon footprint.

Ensuring a just transition for workers and vulnerable communities can be a key focus of parliamentary policies. Parliament should consider prioritizing job retraining programs, social safety nets, and economic diversification initiatives to mitigate social and economic disruptions. Additionally, Parliament can take immediate steps to revise Indonesia's climate change law to install a more robust legal framework for carbon pricing, emissions reductions, and climate resilience. Strengthening legal mandates for government institutions in implementing carbon trade and tax policies will enhance investor confidence and policy predictability. By fostering inclusivity in Indonesia's shift toward a sustainable energy future, Parliament can help protect those most affected by the transition, ensuring economic resilience and long-term sustainability. Strong legislative action will be essential in shaping a fair energy transition, driving Indonesia towards a greener and more sustainable future.

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Forest waterfall in Svay Leu, Siem Reap Province, Cambodia (Photo: Kelly M. Lacy, Sep 2023)

5

THE INTEGRATION OF CLIMATE FINANCE INTO CAMBODIA'S BUDGET FRAMEWORK

BY MS CHENDA MOM, MS SOPHEARA SIN AND MR THEA CHAMROEUN

ABSTRACT

this study explores Cambodia's efforts to integrate climate finance into its national budgetary framework. As a climate-vulnerable country, Cambodia has advanced key policy instruments and institutions to manage climate finance, including the Cambodia Climate Change Strategic Plan (CCCSP), updated Nationally Determined Contributions (NDCs) with NDC3.0 currently under development, and the Climate Public Expenditure Review (CPER). Climate-related public expenditure reached 2.1% of GDP in 2023, with increasing domestic contributions, yet challenges remain in funding allocation, institutional coordination, and performance tracking. The research finds that while adaptation dominates budget priorities (97% in 2023), mitigation remains underfunded, and social sectors receive minimal support. A case study of sub-national budget allocation reveals uneven implementation and insufficient support for local climate resilience, especially among vulnerable rural communities. The findings highlight the need for balanced investment, improved monitoring, and greater inclusion of local governments in climate planning and finance management. Given these challenges, the study underscores the important role of the Cambodian Parliament—particularly the Senate—in addressing policy-to-practice gaps. Through its legislative, oversight, and representative functions, the Senate can help ensure climate finance is more accountable, inclusive, and responsive to national and local needs.

INTRODUCTION

Cambodia is highly vulnerable to the impacts of climate change due to its high dependency on climate-sensitive sectors such as agriculture, water resources, forestry, fisheries, tourism, etc., which form the critical foundation of its economic growth and support the livelihoods of a significant majority of its population. In response, the Royal Government of Cambodia (RGC) has prioritized climate change adaptation, including increased investments in favor of economic and societal resilience, in its climate action commitment to Nationally Determined Contributions (NDCs) and key national plans and strategies. Preliminary cost estimates from Cambodia's National Adaptation Plan (NAP) indicate that implementing adaptation measures between 2017 and 2023 would require

around USD 804 million, equivalent to approximately 0.79% of GDP when calculated on an annual basis. Between 2018 and 2021, the government devoted an average of 6% of its annual budget to adaptation-related infrastructure investments [1].

Climate change is projected to reduce government revenues, increase government expenditures, and elevate government contingent liabilities, including additional government budget for disaster recovery and infrastructure damage from climate shocks. It could also affect sovereign credit ratings and, thus, fiscal space. As of April 28, 2025, Cambodia's long-term sovereign credit rating was at B2 but revised from stable to negative [2]. Climate change is estimated to reduce 2.5% of Cambodia's GDP by 2030 and 9.8% by 2050 [3]. Since 2017, climate change has been integrated into the government's budget circulars and is recognized as a key challenge in debt policy and the government's budget. The government has dedicated around 1% of its GDP in public expenditure to respond to climate change [3]. So far, Cambodia has made notable progress in integrating climate finance into its national policy and budget frameworks. The share of public spending on climate change actions increased to 2.1% of GDP in 2023 from 1.2% in 2015. Despite this, it is still below the level required to address the urgent climate change issues that Cambodia is facing. The financing gap is estimated at 15%, though many actions are receiving financing [4]. Cambodia's NDC2.0 requires around USD 7.8 billion (2020–2030), or USD 781 million annually, with USD 5 billion for mitigation, USD 2.8 billion for adaptation, and USD 21 million for enabling measures. However, since 2020, actual financing has averaged just USD 200+ million per year, mostly from development partners and largely focused on adaptation. Mitigation and enabling actions remain significantly underfunded, underscoring a major financing gap. This persistent gap highlights the urgent need for diversified funding sources, greater domestic resource mobilization, and enhanced private sector engagement. Given these challenges, analyzing the integration of climate finance within Cambodia's budget framework is critical for ensuring sustainability, enhancing accountability, and closing financial gaps in climate action.

This study aims to examine the progress in integration of climate finance into Cambodia's budget framework. Specifically, it:

- Provides an overview of the integration of climate finance in Cambodia, including policies and key institutions
- Analyzes climate-related budget allocation and spending, identifying gaps and challenges in implementation
- Presents a case study on climate-related budget allocation at the Sub-National Administration in Cambodia

This study is based on existing government and international reports, data, and desk-based reviews of relevant documents.

OVERVIEW OF INTEGRATION OF CLIMATE FINANCE IN CAMBODIA

Cambodia has recognized the importance of climate finance as a critical component of its sustainable development strategy. The RGC has taken significant steps to integrate climate finance into national policies, budget frameworks, and development plans. This integration is crucial for enhancing the country's resilience to climate change and ensuring the effective implementation of climate adaptation and mitigation strategies.

POLICY AND INSTITUTIONAL FRAMEWORK RELATED TO CLIMATE CHANGE AND CLIMATE FINANCE

In response to climate change, the RGC has demonstrated the capacity to address these impacts by establishing an ambitious climate agenda, key policies and frameworks. This includes [5, 6]:

- ***Circular Strategy on Environment (2023-2028):*** a key Ministry of Environment strategy for environmental protection, natural resource conservation, and sustainable development, aligning with Cambodia's 2050 carbon neutrality goal. It serves as a roadmap for targeted development actions, focusing on three priorities: policy enhancement through preparation, implementation, and assessment; strengthening digital infrastructure and technology; and expanding environmental knowledge and information.
- ***Cambodia Climate Change Strategic Plan (CCCSP) 2014-2023:*** the first comprehensive national policy addressing climate change, aiming for a green, low-carbon, and climate-resilient society. Key achievements include an updated Nationally Determined Contribution (NDC), a Long-Term Strategy for Carbon Neutrality (LTS4CN), and a national climate monitoring framework, alongside increased climate expenditure. However, challenges remain in capacity building, technology assessment, data systems, and securing funding. Building on these lessons, the RGC is developing CCCSP 2024-2033 to achieve carbon neutrality and climate resilience through sustainable development. The final draft of the CCCSP 2024-2033 is expected to be presented for additional comments before its official launch. This strategic plan will serve as a cornerstone for Cambodia's climate action over the next decade, guiding policies, investments, and collaborative efforts toward a sustainable and resilient future. CCCSP 2024-2033 is estimated to require approximately USD 8 billion by 2030. This funding aims to support mitigation and adaptation initiatives, capacity building, technology transfer, and the development of climate-resilient infrastructure.
- ***National Adaptation Plan (NAP) Financing Framework:*** focuses on mobilizing resources for climate adaptation projects at national and sub-national levels, aiming to enhance external financing and address funding gaps through domestic and international sources. Based on CCCSP 2014–2023 and sectoral Climate Change Action Plans (CCAPs), it outlines 40 short-term priority actions and medium to long-term recommendations, including sector-wide approaches, improved budgeting and project capacities, a national climate science repository, stronger sectoral coordination, mainstreamed climate proofing in budgets, and gender integration in climate responses. As Cambodia is developing CCCSP 2024-2033, the framework is expected to evolve to support future adaptation financing.
- ***National Strategic Development Plan (NSDP) 2019-2023:*** highlighted climate change and deforestation as economic threats but primarily reviewed past policies rather than outlining future steps. The plan assessed achievements and challenges from NSDP 2014-2018, presented a macroeconomic framework, and set policies and priority actions for ministries, including estimated expenditures. It also includes a Monitoring and Evaluation (M&E) framework with climate change indicators based on ministry reports to track development progress and milestones.

- ***Cambodia's Updated Nationally Determined Contribution (NDC):*** represents Cambodia's efforts to reduce national emissions and adapt to climate change. The country submitted its first NDC in 2015, aiming for a 27% reduction in greenhouse gas (GHG) emissions, and an updated version (NDC2.0) in 2020, which set a more ambitious 42% reduction target. NDC3.0 is being developed in harmony with Cambodia's LTS4CN and the CCCSP 2024-2033 and is expected for submission to UNFCCC by July 2025. This alignment helps ensure coherence in the country's approach to achieving carbon neutrality and enhancing climate resilience.
- ***Climate Public Expenditure Review (CPER):*** RGC currently does not have a systematic approach to track climate change expenditures. Instead, they conduct an annual CPER, where auditors assess the proportion of each expenditure that is relevant to climate change and calculate the total climate change expenditure accordingly. It evaluates public spending on climate adaptation and mitigation initiatives to ensure effective allocation of resources. The most recent was published in November 2024, analyzing 2023 climate expenditures.
- ***National Environment Strategy and Action Plan (NESAP) 2016-2023:*** aimed to integrate environmental sustainability into national development plans. Key goals included raising public awareness of climate risks through outreach and environmental reports. NESAP contributed to Cambodia's SDGs by enhancing resilience to climate hazards and strengthening climate mitigation and adaptation capacity. It has also fostered collaboration among government agencies, NGOs, and the private sector in environmental initiatives.
- ***Paris Agreement (2015):*** Cambodia ratified the Paris Climate Agreement, presenting ambitious roadmaps to reduce greenhouse gas emissions by 2030 and achieve carbon neutrality by 2050.
- ***United Nations Framework Convention on Climate Change (UNFCCC):*** guides Cambodia's participation in international climate negotiations and finance mechanisms.
- ***Sustainable Development Goals (SDGs):*** Cambodia has demonstrated progress in advancing its SDGs, particularly SDG 13 (Climate Action) and SDG 7 (Affordable and Clean Energy). Cambodia has advanced climate action SDG 13 by reducing mine impacts and promoting sustainability. For SDG 7, electricity access has improved, particularly in urban areas, yet significant financial resources are still needed to invest in infrastructure and technology to effectively ensure access to energy, especially for rural communities.

While these policies and frameworks are foundational, there is a critical need for better coordination, tracking mechanisms, and capacity-building initiatives to maximize their effectiveness and alignment with national goals.

CLIMATE BUDGET ALLOCATION AND EXPENDITURE: GAPS AND IMPLEMENTATION CHALLENGES

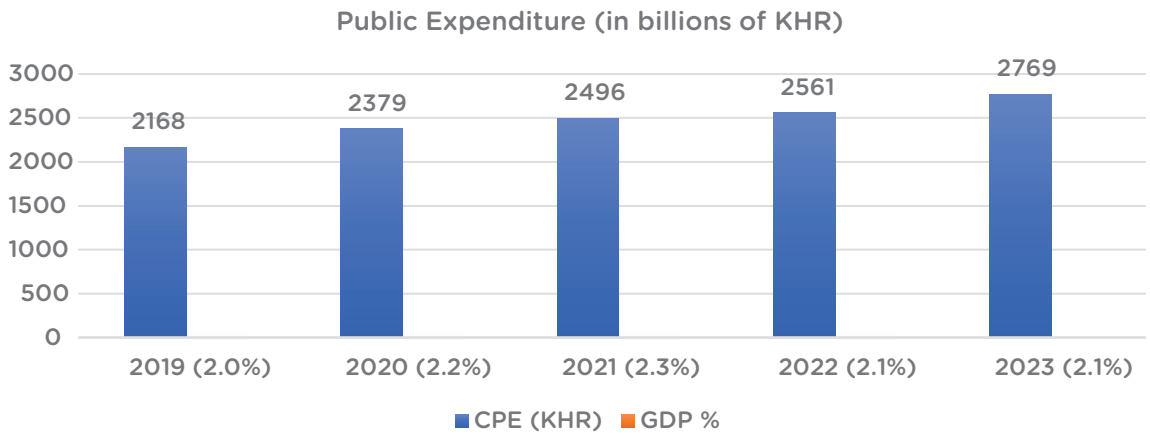
Cambodia has made significant strides in tackling climate change, focusing on reducing GHG emissions, implementing adaptation measures, and strengthening institutional capacity. While progress has been evident, challenges such as limited financing, sectoral imbalances, and sustainability issues remain.

This section explores the current state of Cambodia's climate-related public expenditure and contributions in 2023, identifies gaps in implementation, and offers options to strengthen the country's climate action framework.

CLIMATE-RELATED ALLOCATION AND EXPENDITURE

Climate-related public expenditure accounted for 2.1% of Cambodia's GDP in 2023, maintaining the same level as in 2022. Total spending reached KHR 2,769 billion (USD 692.3 million), representing an 8% increase. Most investments focused on addressing floods, droughts, and other climate risks, with priority given to infrastructure, agriculture, energy, and national roads [4].

Figure 1: Proportion of Climate Change Expenditure to Total Public Expenditure and GDP



Source: Ministry of Economy and Finance, Cambodia Climate Public Expenditure Review

Domestic financing covered 48% of total climate expenditure in 2023, up from 37% in 2022, which demonstrates Cambodia's increased reliance on domestic resources and shift toward financial self-sufficiency, but it also raises concerns about the ability to sustain climate investments without sufficient external support. External concessional loans grew by 4%, while grant contributions declined, indicating shifting dynamics in Cambodia's climate financing.

Among the top contributors, different donors emphasize adaptation (resilience-building) and mitigation (emissions reduction) to varying degrees. 1) China (22%) and the Asian Development Bank (18%) tended to focus on infrastructure and energy, which can contribute to both mitigation and adaptation. 2) International Fund for Agriculture Development-IFAD (10%) focused largely on adaptation, which emphasized climate-smart agriculture and rural resilience. 3) The World Bank (9%) addressed both adaptation and mitigation for disaster risk management and emission reduction efforts. 4) Japan (8%) supported disaster preparedness, energy efficiency, and water resource management, aligning with adaptation and mitigation strategies.

ADAPTATION AND MITIGATION

▸ ADAPTATION

Adaptation remains the primary focus of Cambodia's climate spending. In 2023, 97% of climate-related expenditure was allocated to adaptation measures, emphasizing resilience-building efforts such as flood control, irrigation, and climate-resilient agriculture. Infrastructure ministries like MoWRAM, MPWT, and MRD received nearly half (49.4%) of

total funding. In contrast, social sectors—health, education, and gender—received just 1.9% of the total budget, a marked decrease from 2022. This limited investment in social sectors highlights the importance of better integration of climate resilience into broader social development policies. Notably, within Cambodia's updated NDC (NDC2.0), 61 out of 190 actions are dedicated to adaptation, underscoring its continued strategic importance alongside mitigation (99 actions) and enabling measures (30 actions).

▸ MITIGATION

Mitigation actions remain underfunded compared to adaptation. Efforts to address emissions depend heavily on private sector involvement, with limited public funding for renewable energy, waste management, and energy efficiency. In 2023, only USD 586.5 million of the USD 780 million required for mitigation-related NDC actions was secured, illustrating insufficient funding for long-term investment goals, which stalled renewable energy projects, delayed waste management improvement, and slowed progress on Energy efficiency. This disparity reflects the need for better alignment of resources on long-term climate-friendly commitments such as strengthening public-private investment partnerships, expanding green financing mechanisms, climate grants, and concessional loans.

NATIONAL DETERMINED CONTRIBUTION (NDCS)

Cambodia's updated NDC commits to reducing GHG emissions by 41.7% by 2030 relative to the Business-as-Usual (BAU) scenario. This ambitious target focuses on key sectors such as energy, agriculture, forestry, and waste management. The agriculture sector is projected to account for 34.4% of total emissions reductions by 2050, making it a critical area for mitigation efforts [7].

Cambodia has taken steps to improve NDC tracking through enhanced Monitoring, Reporting, and Verification (MRV) systems. A well-functioning MRV system is crucial for securing climate finance as it enhances donor confidence through transparent and reliable reporting, and accurate data to assess the effectiveness of climate policies, especially on the engagement of Cambodia in carbon markets. However, the progress in MRV systems for NDC implementation also face several challenges in terms of the lack of a standardized data collection system, limited capacity for technical expertise and the incomplete integration with financial tracking, making it difficult to assess whether expenditures match NDC priorities.

The lack of comprehensive tracking mechanisms limits transparency and hinders accurate progress assessment, posing a major challenge to Cambodia's implementation of its NDCs. Key obstacles include financial constraints, institutional weaknesses, and technology deficits. Cambodia's Second NDC (2020) estimates a need for USD 7.8 billion for mitigation and adaptation by 2030, yet approximately 92% of this funding remains unmet, restricting climate action. Institutional fragmentation among government agencies, a shortage of skilled personnel, and limited regulatory enforcement further complicate policy execution. Additionally, limited access to clean energy technologies and low adoption of climate-resilient practices slow progress, underscoring the importance of enhanced knowledge transfer and technological support.

While much of Cambodia's climate financing discourse has focused on public resources and international support, the role of the private sector remains under-reported. In many countries, private investment plays a critical role in achieving NDC targets through innovation, financing, and implementation. Recognizing this, UNDP is currently supporting the Ministry of Economy and Finance in finalizing Cambodia's National Financing Policy Framework (under the Integrated National Financing Framework - INFF). This framework places strong emphasis on mobilizing private capital through public-private partnerships and blended finance approaches—particularly in areas such as disaster risk management and climate change adaptation and mitigation. Its completion is expected to open new pathways for more inclusive and diversified climate financing.

INTEGRATING FINDINGS ON PUBLIC EXPENDITURE AND NDC PERFORMANCE

The synthesis of Cambodia's climate-related public expenditure and its NDC performance reveals significant gaps between policy objectives and actual outcomes. While Cambodia has strong climate policies targeting both emissions reductions (mitigation) and resilience-building (adaptation), the majority of spending remains skewed toward adaptation. This prioritization is consistent with Cambodia's positioning as a climate-vulnerable country that contributes minimally to global emissions but faces disproportionate impacts. The government's recent sub-decree on public investment management reinforces this stance by giving priority to adaptation-linked investments. Looking ahead, the ongoing development of Cambodia's NDC3.0 introduces a stronger emphasis on shock-responsive social protection—an area largely absents in NDC2.0—which aims to strengthen resilience for vulnerable populations in the face of climate-induced shocks.

There are also inequalities in how the funding is spread across sectors. Even though policies emphasize the need to strengthen social sectors like health, education, and gender equality to make them more climate-resilient, these areas only received 1.9% of the climate budget in 2023. Agriculture, which is the country's largest emissions source, receives minimal support for emissions-reducing practices like soil carbon sequestration and methane reduction in rice production. For instance, the Climate Smart Farming Project, with a budget of USD 136,515, aims to combat soil degradation through climate-resilient farming techniques. It supports farmer field schools, demonstration farms, and training programs, benefiting 140 households, including indigenous communities. Despite such investments, Cambodia's NDC documentation does not specify the total funding allocated to climate-smart agriculture and sustainable land-use practices. Meanwhile, the energy sector remains heavily reliant on fossil fuels, with limited investment in clean energy and efficiency measures. This lack of funding slows progress in helping vulnerable communities adapt to climate impacts. Other major challenges include deficiencies in funding and coordination between government agencies. Additionally, gaps in cooperation and capacity make it harder to carry out climate initiatives effectively. Without better monitoring, it's difficult to measure how well Cambodia is meeting its NDC targets.

To address these challenges, Cambodia can continue prioritizing adaptation while progressively increasing investments in underfunded mitigation areas such as renewable energy and low-carbon infrastructure. A more strategic allocation of resources, without undermining the country's urgent adaptation needs, can support both long-term emissions reduction and resilience-building. Strengthening inter-agency coordination

and institutional capacity is equally beneficial. This could include expanding training programs for government officials on climate finance management and emissions accounting, as well as providing targeted support to farmers and small businesses in sustainable practices.

Improved coordination, such as through a more empowered National Council for Sustainable Development (NCSD) or a dedicated climate finance coordination mechanism, can enhance cross-sectoral implementation. Knowledge-sharing with international partners on emissions tracking and MRV systems will further support evidence-based decision-making. Expanding public-private partnerships can unlock investment in renewable energy, low-carbon transport, and sustainable infrastructure. Finally, ensuring that climate policies prioritize vulnerable groups, such as rural farmers and low-income communities, will promote a more inclusive and equitable climate response.

CASE STUDY

CLIMATE RELEVANT BUDGET ALLOCATION FOR SUB-NATIONAL LEVEL IN CAMBODIA

Cambodia is one of the more disaster-prone countries in Southeast Asia, affected by floods and droughts on a seasonal basis. Nearly 80% of the population live in rural areas where floods are common, and depend on agriculture for their livelihoods [8]. The RGC has mainstreamed climate change into sub-national planning, budget, and execution since 2003 through donor support after the Decentralization and De-concentration (D&D) reform. The RGC has implemented the first phase of D&D reform (2010 -2020) to shift some service delivery to the Sub-National Administration (SNA) for development planning financing through a commune investment program (CIP). The second phase of D&D reform aims to scale up efforts to build resilience to climate change and disasters into public service delivery and local development and enable the SNA to effectively address climate change vulnerabilities and disasters [9, 10]. In 2012, the RGC established the Cambodia Climate Change Strategic Plan (CCCSP), which is aligned with D&D legislation and policy. Integration of climate change into sub-national planning and budgets to reduce loss and damage due to climate change strengthens financial and institutional processes for local adaptation, and mainstreams climate change into national and sub-national development plans and the National Social Protection Strategy (NSPS) [9].

According to a report of CPER data available, the climate change response at SNA on average over the last five years (2019-2023) is around 3.6% of total climate change expenditure, which amounts to KHR 88.5 billion (USD 21.12 million) In 2023, the SNA level spent KHR 108 billion (USD 27 million), an increase of 13.3% compared to 2022 and 3.9% in total climate change expenditures. The rest go to line ministries, with 3 infrastructure ministries (MPWT, MoWRAM, and MRD) sharing the highest outlays. Both of the ministries (MPWT, MoWRAM, and MRD) spend on river dams and water reservoirs for flood and drought prevention and irrigation rehabilitation, and other investments in climate change-related rural infrastructure (small-scale irrigation, rural water and sanitation, and national and rural roads). Moreover, MAFF had a significant investment in climate change-resilient agriculture, primarily from external funding sources. The social sectors (education, health, and gender) have small shares of climate change expenditure [11].

Below shows examples of project investment related to climate change in Cambodia [12, 13].

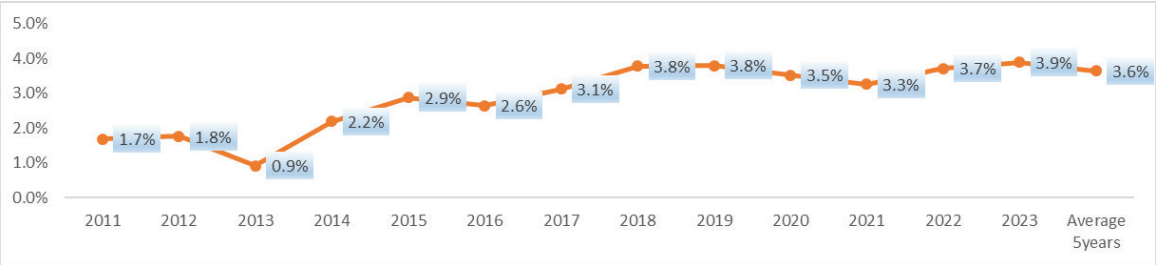
Example 1: The Irrigated Agriculture Improvement Project (IAIP) assists the RGC, funded by ADB to modernized and improve the climate and disaster resilience of four irrigated systems in Battambang, Kompong Cham, Kampong Thom, and Takeo provinces to ensure their sustainability to improve water resources for about 43, 500 hectares for 291,847 people (148,288 women - around 51%). It can help farmers to grow crops year-round, diversify their produce, increase yields, improve food security, reduce reliance on seasonal rains, and ultimately contribute to economic growth and poverty reduction in rural areas, especially during drought periods.

Example 2: The Agricultural Service Programme for Innovation, Resilience and Extension (ASPIRE) from December 2014 to December 2022, funded by IFAD, covered all 24 provinces of Cambodia with 283,261 households benefiting. The main target of ASPIRE was productive poor farmers and smallholders vulnerable to falling into poverty due to climate change, or other social or economic shocks. The main purpose of this project is to provide service to assist smallholder farmers to achieve stable livelihoods and adapt to the impact of climate change through techniques such as improved crop management, use of high-yielding, climate resilient and pest-resistant seeds, land preparation and soil fertilization; use of biomass and cover crops; and application of Integrated Pest Management.

However, there are challenges: in rural areas low education, limited financial access, few employment opportunities and small or no landholdings. In addition, poor smallholders have insufficient access to agricultural technology, market information and integration in value chains.

However, the CPER data do not over the source of funding. The data are not disaggregated by district and commune levels either, therefore it is not clear how much of the climate response budget is spent in communes where vulnerable citizens are.

Figure 1. Share of SNA Climate Change Expenditure of Total Climate Change Expenditure



Source: Ministry of Economy and Finance, Cambodia Climate Public Expenditure Review [11]

A report by the Advocacy and Policy Institute (API) gives some snapshots about the climate relevant spending of the commune development budget in 2021-2022. It revealed that climate change relevant spending, including on environment and natural resources, was only 1% in 2021 and 0.5% in 2022 compared to the total in line investment budget of Communes/Sangkats, where administration and security were at 2% in 2021 and 1.5% in 2022, with social services at 3% and 4% respectively. However, budget allocation in the Economic category was around 94% of the total in line budget investment in Communes/Sangkats (Table 1). The Economic component may include spending on infrastructure such as roads and canal rehabilitation, so people in communes can access health services, schools and markets, and irrigate their crops. Commune/Sangkat funds

have been largely prioritized towards infrastructure development goals. SNAs sometimes make compromises in their investment due to low budgets, for instance building roads without equipping them with climate-proofing infrastructure (e.g., water culverts), risking flood damage and increased spending on maintenance over the years.

Table 1. Comparison of Development Budget Allocation in Communes/Sangkats from 2021-2022

Descriptions	Economic	Social Service	Natural Resource, Enviroment and Climate chan	Administration and security
2021	73,346	2,500	1,172	1,226
2022	119,616	4,652	630	1,897
% Total budget line development 2021	94%	3%	1%	2%
% Total budget line development 2022	94%	4%	0.5%	1.5%

Source: Commune and district budget Analysis Report 2021-2022 [14]

Note: Data tracking from the Citizen Budget App shows that the number of reporting districts increased from 32 in 2021 to 55 in 2022, while reporting Communes/Sangkats rose from 257 to 381 over the same period.

There were some positive impacts identified at SNA from climate relevant spending to-date. For instance, it helped strengthen the capacity of local governments to plan, budget, implement, monitor and evaluate climate change adaptation measures through learning by doing. Moreover, it contributed to a behavioral change, raising awareness and promoting a bottom-up approach [9].

However, there remain challenges that require attention. For instance, the implementation of climate response spending at SNA focused on medium-sized infrastructure rather than systemic adaptation investments. For example, there were a lot of focus on building flood management schemes (flood control), the raising of rural roads, dams, and reservoir dykes above flood levels [15]. On the other hand, there was less focus on supporting smallholder farmers to adapt to climate change and minimize its impacts on their livelihood, such as improving crop management; using high-yielding, climate resilient and pest-resistant seeds; land preparation and soil fertilization [13]. Second, M&E of each climate project at SNA is not integrated into the national climate change M&E framework, therefore monitoring the progress at the national scale remained limited. Due to limited capacity within government agencies to coordinate data collection and analysis across different project, there is a lack of standardized reporting systems, insufficient communication between national and sub-national levels, and lack of clear guidelines for integrating projects into the national framework. Last, a limited budget leads to a tendency to focus more on quantity with lower cost than quality (i.e. focusing on km of roads rather than on climate proof roads) [9].

ROLE OF CAMBODIA'S SENATE AS THE PARLIAMENT'S UPPER HOUSE

The findings of this study hold important implications for the Cambodian Parliament, particularly the Senate as the Upper House. As Cambodia integrates climate finance into its budget systems, the Parliament can support the link between policy and implementation at both national and sub-national levels. The Senate, through its mandate to examine legislation, provide recommendations, and suggest changes, can help ensure that climate finance frameworks are effective, equitable, and accountable

▸ LEGISLATION

The Senate can advise on and support laws that institutionalize climate finance integration across national and sub-national levels. This includes mandating standardized tracking of climate expenditures, aligning funding with Cambodia's NDCs, and ensuring equitable investment in sectors like renewable energy, education, and health. Furthermore, through inter-parliamentary diplomacy, the Senate can support legislative reforms by engaging with international peers, promoting knowledge exchange, and strengthening Cambodia's global partnerships for technical and financial cooperation.

▸ OVERSIGHT

The Senate plays a key role in monitoring the effectiveness of climate finance policies. It can initiate hearings, review implementation gaps, and scrutinize national systems like MRV frameworks and Climate Public Expenditure Reviews (CPERs) to enhance transparency and accountability. To be effective, this oversight function should operate in synergy with the Council of Ministers, whose mandate includes monitoring and evaluation (M&E) of national development strategies such as the Pentagonal Strategy. Such coordination can help ensure consistent performance tracking and policy alignment across ministries and governance levels. Oversight can also extend to improving inter-ministerial coordination and sub-national engagement, addressing imbalances, such as the current 97% focus on adaptation, and promoting resilient, data-driven policy execution at all levels.

▸ REPRESENTATION

As a representative body, the Senate can elevate the concerns of climate-vulnerable populations by engaging with local officials and constituents to ensure national policies reflect ground realities. It can advocate for increased local funding, support capacity-building for sub-national actors, and promote inclusive, bottom-up planning processes. This role also includes fostering climate diplomacy by building trust with development partners and ensuring that Cambodia's climate finance agenda remains both inclusive and globally aligned.

CONCLUSION

Cambodia has made notable progress integrating climate finance into national policies, and budget frameworks, incorporating it into areas such as CCCSP, NSDP, NAP Financing Framework, NESAP, budget circulars, updated NDCs, and SDGs. Key ministries have begun prioritizing climate change, and spending is now assessed for alignment with NDC actions. The share of climate change expenditure was 2.1% of GDP in 2023, about the same share as 2022, an 8% growth compared to 2022, with domestic financing covering 48%, up from 37% in 2022, signaling a shift toward financial self-sufficiency. While progress has been evident, there are significant gaps between policy objectives and actual outcomes. Despite strong policies focusing on both mitigation and adaptation, 97% of climate spending goes to adaptation, leaving mitigation underfunded. Other major challenges include insufficient overall climate funding, continued reliance on external funding, limited sub-national climate finance (3.6% of total expenditure from 2019–2023), weak institutional coordination, lack of standardized data, and limited technical expertise. Most sub-national funds are allocated to infrastructure, with minimal support for social sectors and local adaptation. Budget constraints sometimes lead to a focus on quantity over resilience, while limited monitoring and fragmented reporting hinder effectiveness.

To address these systemic issues, Cambodia can continue prioritizing adaptation in response to its high climate vulnerability, while also beginning to explore a more forward-looking balance between adaptation and mitigation. Although adaptation remains justifiably dominant in current spending and the NDC3.0 development process, a more deliberate policy dialogue can help ensure that mitigation is not overlooked, particularly in sectors like renewable energy and sustainable transport. Striking an effective balance can enhance long-term resilience, unlock carbon market opportunities, and align Cambodia with global climate finance trends.

At the same time, expanding sub-national allocations and strengthening institutional mechanisms for coordination, transparency, and performance monitoring will be essential. Beyond technical reforms and capacity-building, sustained legislative and parliamentary engagement will play a vital role. The Cambodian Senate, in particular, has a critical mandate in shaping legal frameworks, scrutinizing climate-related budget allocations, and amplifying the voices of vulnerable communities. By leveraging its legislative, oversight, and representative functions, the Senate can play a pivotal role in ensuring that climate finance is not only effectively allocated and transparently managed, but also responsive to the needs of vulnerable communities. Strengthening the integration of climate finance with parliamentary processes and local priorities will enhance Cambodia's ability to deliver on its sustainable development objectives, build economic resilience, and uphold its long-term climate commitments.

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Above Krong Stueng Saen, Kampong Thom Province, Cambodia (Photo: Kelly M. Lacy, Sep 2023)

6

STRENGTHENING PARLIAMENTARY ENGAGEMENT WITH CAMBODIA'S LTS4CN

BY MR SUONVISAL SETH, MR BUNHAV LONG AND MS SEAVMEY SONG

EXECUTIVE SUMMARY

Cambodia's Long-Term Strategy for Carbon Neutrality (LTS4CN) provides a comprehensive roadmap to achieve net-zero greenhouse gas emissions by 2050. It aligns with Cambodia's Updated Nationally Determined Contribution (NDC) under the Paris Agreement and outlines economy-wide mitigation measures while promoting sustainable development. LTS4CN prioritizes sectoral actions across forestry, energy, agriculture, industry, and waste management. It integrates emissions reduction, adaptation, and resilience goals, establishing emission baselines and targets under both Business-As-Usual (BAU) and low-carbon scenarios. Notably, the strategy aims to transform Cambodia into a carbon sink, with the Food and Land Use (FOLU) sector offsetting remaining emissions.

Beyond its environmental ambition, LTS4CN offers substantial co-benefits. The strategy is projected to deliver over USD 4 billion in net economic gains and avoid up to USD 8.3 billion in climate-induced GDP losses by 2050. It can catalyze USD 18.6 billion in investment, generate 157,000 green jobs, and yield nearly USD 7 billion in wider social and environmental benefits, including improved health, biodiversity conservation, gender-responsive adaptation, and climate resilience. These outcomes demonstrate LTS4CN's potential to drive inclusive, low-emissions development.

Parliamentary engagement is crucial to realizing the LTS4CN vision. The National Assembly of Cambodia would play a transformative role through its legislative, budgetary, and oversight functions. By embedding climate targets into laws, aligning budgets with green investments, monitoring implementation, and convening inclusive dialogues, parliamentarians can ensure national climate ambition translates into accountable action.

Notably, the SDG budget tagging approach, as developed in 2022 but not yet fully implemented, offers a vital tool for integrating climate and green financing priorities into the national budgeting process. By institutionalizing this approach, the National Assembly can enhance the transparency and coherence of public investments aligned with LTS4CN targets. Strengthening parliament's leadership role, particularly in mainstreaming climate-responsive budgeting, will be key to institutionalizing Cambodia's carbon neutrality agenda and ensuring a just and resilient transition.

CAMBODIA'S VISION FOR CARBON NEUTRALITY

Climate change is a global issue driven largely by human activities, especially the burning of fossil fuels, which has caused unprecedented warming. The IPCC warns that immediate and significant reductions in greenhouse gas emissions are necessary to limit global warming to 1.5°C or 2°C. The Intergovernmental Panel on Climate Change (IPCC) has projected that global temperatures are likely to rise by 1.5°C to 2°C above pre-industrial levels within the coming decades, particularly between 2021 and 2040, depending on current emission patterns and modeled scenarios. In some high-emission scenarios, this threshold could be reached even earlier, potentially between 2018 and 2037.[23]

Cambodia is committed to addressing climate change through its participation in international agreements like the United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol, and Paris Agreement. The country's Updated Nationally Determined Contribution (NDC) aims to reduce emissions by 42% by 2030, targeting key sectors like Forestry, Land Use, and Energy.

On December 30, 2021, Cambodia submitted the Long-Term Strategy for Carbon Neutrality (LTS4CN) to UNFCCC to pledge to achieve carbon neutrality by 2050. LTS4CN serves as a roadmap that guides Cambodia for transitioning to a low-carbon economy.

This policy brief summarizes Cambodia's Long-Term Strategy (LTS) goals, highlights its socioeconomic benefits, and suggests key parliamentary action points on how legislators can support the successful implementation of the LTS objectives.

LTS4CN Objectives

Cambodia's Long-Term Strategy for Carbon Neutrality (LTS4CN) is designed to guide the country's future policies and investments, ensuring a clear path towards achieving carbon neutrality by 2050. The strategy outlines actionable steps for reducing emissions, exploring decarbonization pathways, and enhancing resilience across key sectors like energy, agriculture, and forestry. LTS4CN will be reviewed every five years, in line with updates to the Nationally Determined Contributions (NDCs).

This iterative process allows Cambodia to adjust its approach based on new data, technological advancements, and changing circumstances, ensuring that it stays on track to meet its climate goals and align with global climate commitments.

Sectoral priorities for emission reduction under BAU and LTS4CN scenarios

Under the Business-As-Usual (BAU) scenario, Cambodia's emissions are expected to increase at an annual rate of 1.9%, reaching 156 Metric Tons of Carbon Dioxide Equivalent ($MtCO_2e$) by 2050. Table 1 shows Cambodia's projected emissions under the Business-As-Usual (BAU) scenario. Emissions from the FOLU sector, which were 51 $MtCO_2e$ in 2016, are expected to decrease to 21 $MtCO_2e$ by 2050 due to reduced deforestation and improved carbon sinks.

23 Top Findings from the IPCC Climate Change Report 2023 | World Resources Institute

Energy emissions will rise dramatically, from 8 MtCO2e to 83 MtCO2e, driven by increased demand linked to population and economic growth. Agricultural emissions are projected to grow from 18 MtCO2e to 35 MtCO2e, driven by higher rice and meat production.

Waste emissions will increase from 2.8 MtCO2e to 6.5 MtCO2e due to growing waste management needs. Finally, emissions from Industrial Processes and Product Use (IPPU), mainly from cement and refrigeration, are expected to rise from 1.8 MtCO2e to 11 MtCO2e.

Overall, while FOLU emissions decrease, emissions from energy, agriculture, waste, and industry will rise due to economic and population growth. (see Table 1).

Table 1. Emissions Projections under the Business-As-Usual (BAU) Scenario for Cambodia

Sector	2016 Emissions (MtCO2e)	2050 Emissions (MtCO2e) (BAU Scenario)	Key Drivers
FOLU (Forestry, Land Use & Other)	51	21	Deforestation reduction, improved carbon sinks
Energy	8	83	Population & economic growth, higher energy demand
Agriculture	18	35	Increased rice & meat production, population & economic growth
Waste	2.8	6.5	Solid waste disposal, biological treatment, wastewater
IPPU (Industrial Processes and Product Use)	1.8	11	Cement (55%), refrigeration/air conditioning (39%)

Table 2 below compares emissions under the Business-As-Usual (BAU) scenario and the Long-Term Strategy for Carbon Neutrality (LTS4CN) scenario, along with the emissions balance in the LTS4CN scenario. Under the BAU scenario, total emissions are projected to be 156.0 MtCO2e. In the LTS4CN scenario, significant reductions are expected across various sectors. Agriculture emissions decrease by 15.6 MtCO2e, leaving a balance of 19.3 MtCO2e. Energy emissions drop by 54.3 MtCO2e, with a balance of 28.2 MtCO2e.

The FOLU sector sees a major reduction of 71.4 MtCO2e, resulting in a negative balance of -50.2 MtCO2e, indicating a carbon sink. IPPU emissions reduce by 9.1 MtCO2e, leaving 1.6 MtCO2e, while waste sector emissions are reduced by 5.3 MtCO2e, resulting in a balance of 1.2 MtCO2e. Overall, the LTS4CN scenario achieves a nearly complete emissions reduction, with a minimal balance of 0.3 MtCO2e, demonstrating a strong commitment to carbon neutrality. (see Table 2)

Table 2. Emissions projection by sector in 2050, BAU and LTS4CN scenarios

Sector	BAU Scenario Emissions (MtCO2e)	Emissions Reduction in LTS4CN Scenario (MtCO2e)	Emissions Balance in LTS4CN Scenario (MtCO2e)
Agriculture	34.9	-15.6	19.3
Energy	82.7	-54.3	28.2
FOLU	21.2	-71.4	-50.2
IPPU	10.7	-9.1	1.6
Waste	6.5	-5.3	1.2
Total	156.0	155.6	0.3

The government has detailed specific actions to accomplish its planned objectives. For emission reduction in agriculture, the focus can be on growing less methane-intensive rice, direct seeding, and alternate wetting and drying. The government could also promote the use of organic fertilizer, feed additives for cattle, and improved fodder management. For forestry and land use, efforts include reducing deforestation by 50% by 2030 and halting it by 2045, along with afforestation and forest restoration.

In the energy sector, the focus is on halting new coal plants, utilizing natural gas as a transitional fuel, and expanding renewable energy to 35% by 2050. For Industrial Processes and Product Use (IPPU), the transportation goals include expanding public transport to 30% by 2050, promoting electric vehicles, and improving fuel efficiency. For industry, clinker substitution and carbon capture for cement are prioritized. Waste management focuses on expanding collection, reducing burning, recycling, and promoting composting and anaerobic digestion. These actions aim to reduce emissions and environmental impact.

SOCIOECONOMIC BENEFITS

Costs and benefits of LTS4CN actions

Figure 1 below shows the changes in net costs and benefits for each of the LTS4CN's thirty-one actions. More than 90% of all costs and benefits, including both public and private expenses, may be attributed to ten behaviors. The figure's bottom represents acts with the largest net benefits, while the top represents actions with the highest net costs.

During the first ten years, the main expenses are lost timber and farming income from less deforestation, as well as costs for carbon capture and storage and, to a lesser extent, public transportation. In the same time frame, net costs are also needed for forest restoration.

There would be significant net gains from four interventions. The advantages of public transportation include cheaper operating costs for vehicles and commuter time savings on all forms of transportation as a result of reduced traffic. For the most part, renewable energy is profitable. It is also profitable to move to low-GWP refrigerants and convey goods by road and rail.

Energy efficiency would have significant positive effects on the private sector. The benefits of reforestation increase steadily. By 2050, the benefits of vehicle electrification during the final ten years of the era will total close to USD 500 million.

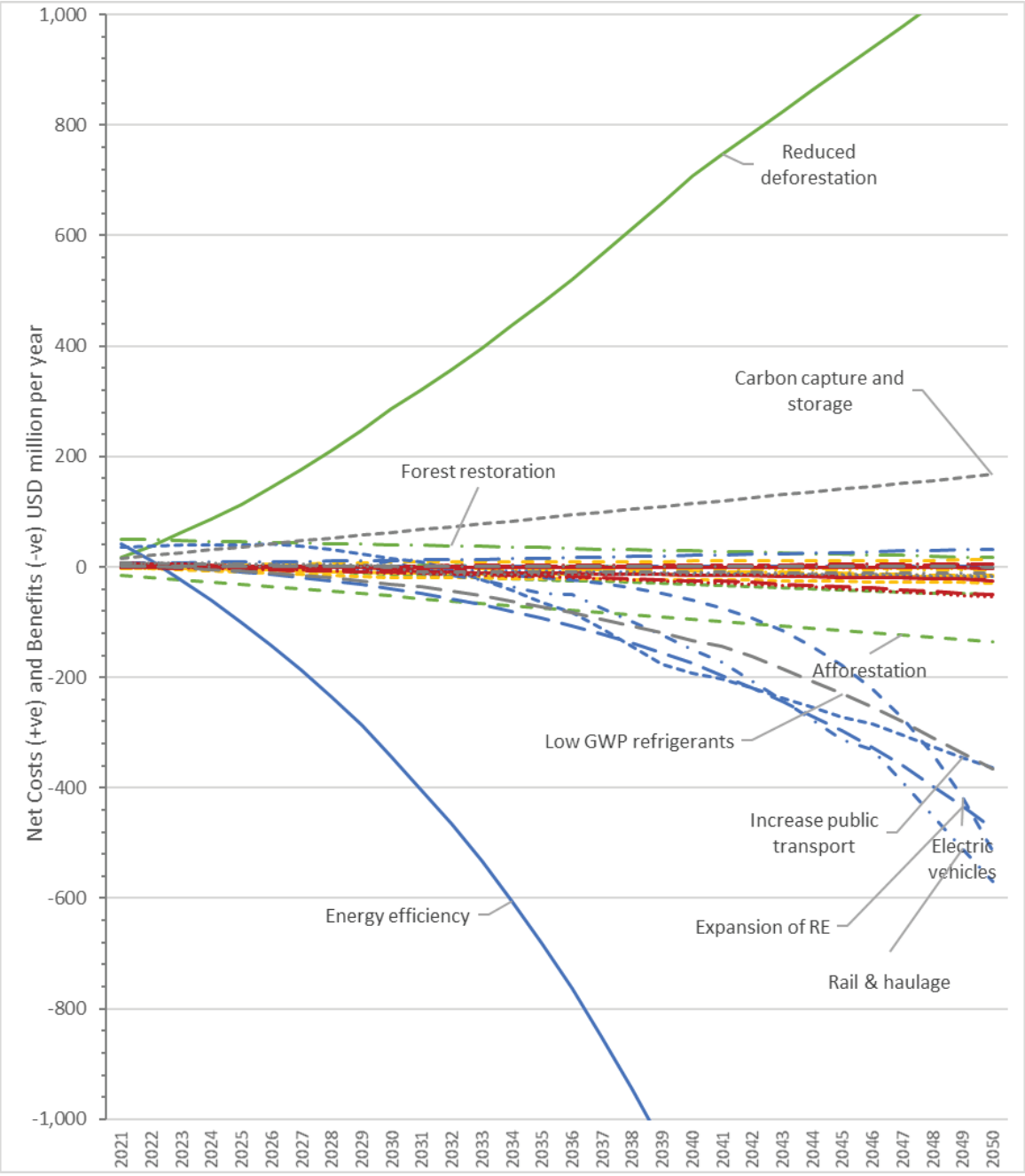


Figure 1. Costs and benefits of key LTS4CN actions, including public and private capital and operating expenditures

Total economic costs and benefits

The economic analysis indicates that the Long-Term Strategy for Carbon Neutrality (LTS4CN) generates net economic benefits for both the public and private sectors, even before considering adaptation and broader social and environmental gains. These benefits begin in the first year and grow to over USD 4 billion by 2050, accounting for more than 2.8% of projected GDP.

Public sector costs start modestly and rise steadily, reaching nearly USD 1 billion (0.7% of GDP) by 2050. The private sector sees strong net benefits from the second year, surpassing USD 1 billion in 2036 and continuing to grow.

However, achieving these benefits requires significant private sector investment, increasing to nearly USD 1.5 billion by 2050. While profitable, this investment depends on clear policy commitments to ensure confidence in carbon-neutral initiatives.

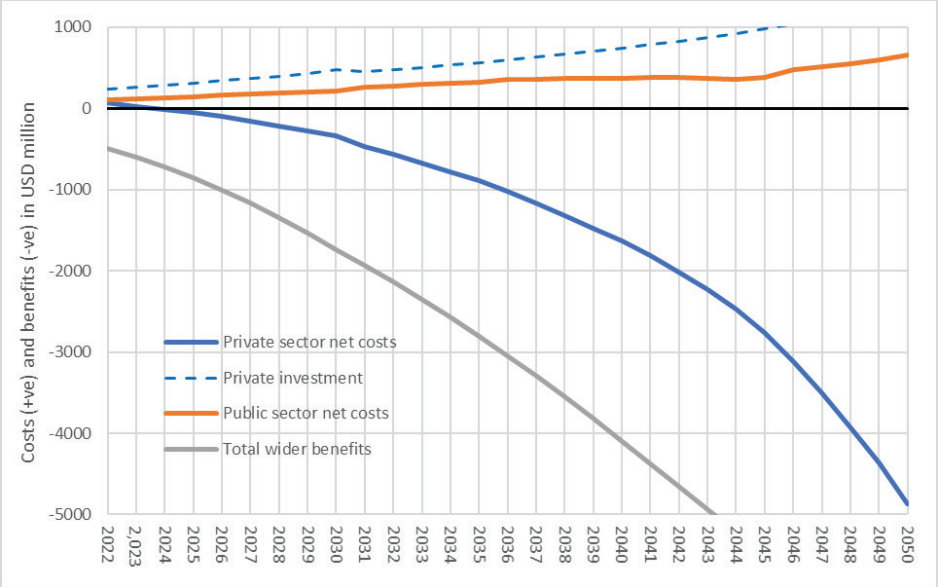


Figure 2. Total costs and benefits by sector

Public sector costs

Figure 3 shows public sector costs by sector, with substantial funding required in energy and transportation, FOLU, and IPPU. Mid-period funding in the energy sector relates largely to public transportation.

The strong increase in the last decade is associated with investment in rail and haulage to support strong economic growth, and the loss of a fuel duty as electrification of transportation expands.

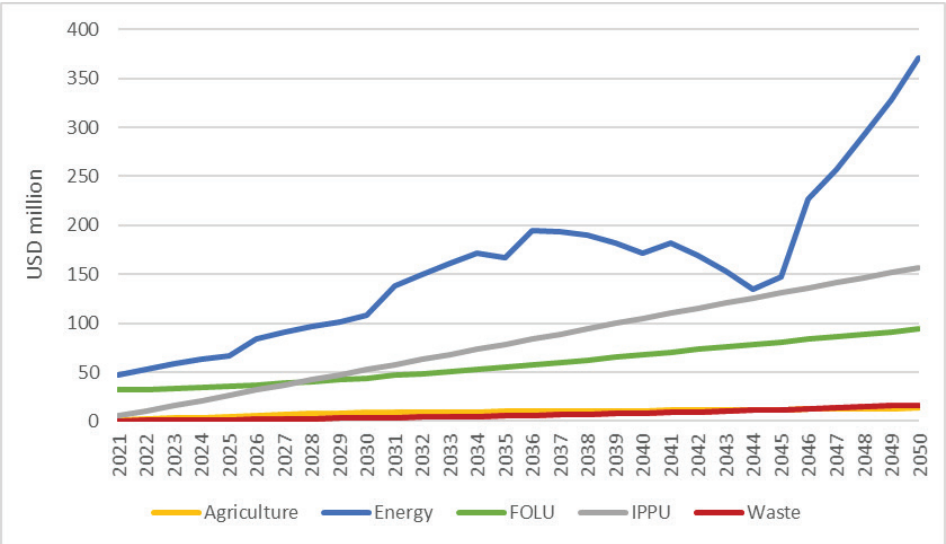


Figure 3: Public sector costs by sector

Implications for Investment, Economic Growth, Gender, and Jobs

Figure 4 illustrates that without global carbon neutrality, Cambodia's GDP in 2050 could decline by over USD 15 billion (equivalent to 10% of GDP), according to estimates from CEGIM (Climate Economic Growth Impact Model, as quoted in the LTS4CN). While achieving carbon neutrality would significantly reduce future emissions, some economic losses are unavoidable due to historic emissions.

If past emissions account for one-third of the projected GDP losses and carbon neutrality reduces the remaining impact by half, Cambodia could potentially avoid around USD 5 billion in climate-related economic losses. However, the full extent of loss avoidance remains uncertain.

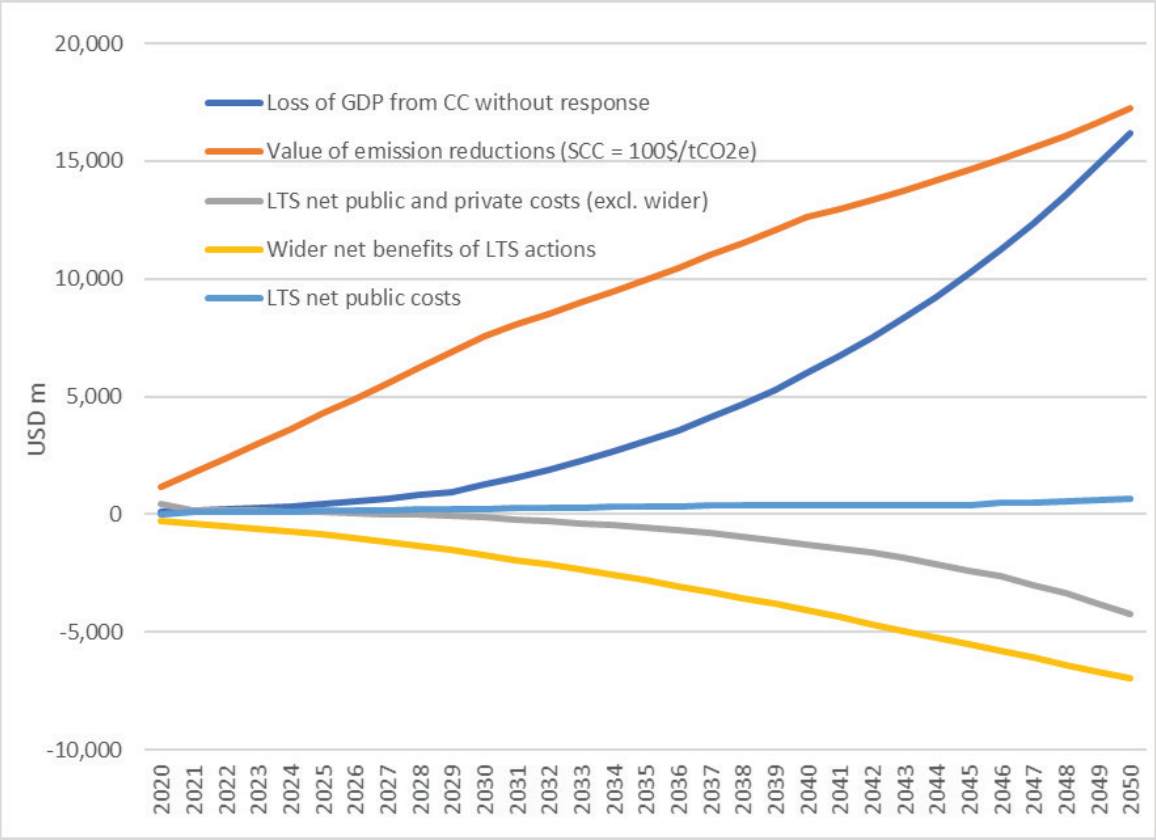


Figure 4. Implications of LTS4CN for economic growth

LTS4CN-aligned investments are expected to generate considerable returns, with public and private capital inflows reaching USD 18.6 billion by 2050 and yielding an average return of 20–25%. Although traditional development projects may offer slightly higher returns (around 28%), reallocating capital toward LTS4CN actions is unlikely to compromise economic growth. In fact, 26% of LTS4CN financing is projected to come from international climate finance, which would help ease fiscal pressure.

Importantly, Cambodia's transition toward carbon neutrality must also address the evolving green trade and export standards set by key international markets. Major export destinations such as the European Union, United Kingdom, Canada, and the United States are introducing environmental and carbon-related regulations, including the EU's Carbon Border Adjustment Mechanism (CBAM) and sustainability requirements

under the European Green Deal. These frameworks are expected to influence product standards, supply chains, and traceability requirements for Cambodian exports.

Cambodia's ability to align with these green standards will determine the competitiveness of its export sectors, especially garments, agriculture, and light manufacturing. Proactive adaptation to such standards (through green certification, low-emission production processes, and compliance monitoring) will be critical for maintaining trade privileges, securing market access, and attracting climate-sensitive foreign investment.

In addition to economic and trade benefits, LTS4CN implementation is projected to create 157,000 green jobs by 2050, particularly in clean energy and low-carbon transport sectors. While routine development pathways could create marginally more jobs (183,000), a larger share of those benefits would accrue to capital owners rather than workers. LTS4CN offers more equitable wage distribution alongside environmental and gender co-benefits.

Gender impacts are also central. Women, who are disproportionately affected by climate risks, stand to benefit from LTS4CN's adaptation measures. These include improved natural resource management and enhanced climate resilience in sectors where women are more engaged, such as forestry and agriculture. Moreover, avoiding economic losses from climate impacts will indirectly protect women's livelihoods and well-being, reinforcing LTS4CN's inclusive development framework.

Adaptation and wider social and environmental benefits

LTS4CN adaptation benefits are estimated based on a classification system, with high-relevance actions increasing benefits by 50%, mid-level by 30%, and low-relevance by 10%. These benefits primarily stem from resilience to extreme rainfall, which is expected to double in frequency by 2050.

Wider social and environmental benefits are valued at nearly USD 7 billion in 2050, surpassing direct economic benefits. Over 90% of these benefits come from forestry, with the rest mainly from energy efficiency. Key benefits include improved watershed management, reduced flooding, biodiversity conservation, and non-timber forest incomes. Energy and transportation improvements also bring health benefits, with pollution reduction valued at USD 4.6 per tCO_2e and even higher for transportation emissions. Additional benefits include fewer accidents from public transport and improved health from cleaner cooking and waste management.

Benefits of adaptation for economic growth

The analysis of adaptation co-benefits examined the relevance of mitigation actions in the LTS4CN for both current and future climate scenarios (2050). It considered that the frequency of extreme climatic events, such as floods, droughts, and unseasonal rainfall, will likely double by 2050, based on the IPCC's 2012 Special Report on Extreme Events. The exposure to climate change will primarily be through these extreme events and rainfall variability. The results are categorized by sector, with each mitigation measure's impact rated on a scale from low to top. The final column of the report links specific Nationally Determined Contribution (NDC) actions to the expected adaptation benefits.

ROLE OF THE NATIONAL ASSEMBLY IN ADVANCING LTS4CN IMPLEMENTATION & ACTION POINTS FOR PARLIAMENTARIANS

Inherent Roles of the National Assembly in Climate Governance

Cambodia's National Assembly (NA) holds constitutionally defined legislative, budgetary, and oversight mandates that position it as a key actor in advancing the Long-Term Strategy for Carbon Neutrality (LTS4CN). To meaningfully contribute, the NA will operate through its existing institutional frameworks and exercise its functions in a targeted and sector-responsive manner.

- **Legislative Role:** The NA has the authority to draft, amend, and pass laws. This includes legislation that aligns with LTS4CN objectives across sectors such as energy, agriculture, forestry and other land use (FOLU), waste, and industry (IPPU). Sectoral legislation can integrate emissions targets, technology adoption incentives, or regulations supporting carbon neutrality.
- **Budgetary Role:** Through its budget approval authority, the NA can ensure sufficient allocation of public finances toward LTS4CN-aligned programs, including green infrastructure, renewable energy, and sustainable agricultural practices. Parliamentarians can advocate for budget tagging of climate-related expenditures by sector, using frameworks such as the Sustainable Development Goals (SDG) budget tagging system. Developed in 2022, this tool remains underutilized but holds potential to improve the transparency, efficiency, and alignment of public investments with climate and development priorities.
- **Oversight Role:** The NA exercises oversight through mechanisms such as interpellations, questioning of ministers, and review of national plans and reports. The relevant specialized commissions, such as the Commission on Planning, Investment, Agriculture, Rural Development and Environment (Commission 3), and Commission on Economy, Finance, Banking and Audit (Commission 2), can monitor sectoral progress toward LTS4CN targets and demand accountability.
- **Representation and Convening Role:** Parliamentarians serve as intermediaries between the government and the public. Through their representative role, Cambodia's MPs can convene inclusive dialogues and ensure that LTS4CN reflects the needs and aspirations of communities most affected by climate change, especially in agriculture and forestry sectors.

Concrete Parliamentary Actions to Support LTS4CN

To translate its formal roles into actionable support for LTS4CN, the National Assembly can pursue the following sector-linked and procedurally grounded interventions. Each action is classified by the type of parliamentary intervention such as legislative, budgetary, oversight, or convening, and then linked to LTS4CN targets.

Legislative Actions:

- Draft and adopt a Renewable Energy Promotion Law that mandates a minimum share of solar and biomass in the national energy mix by 2030, aligning with LTS4CN energy sector goals.

- Amend the Environmental Protection and Natural Resource Management Law to include sector-specific carbon reduction benchmarks, supporting FOLU and waste sector transitions.

Budgetary Actions:

- Institutionalize climate-responsive and SDG budget tagging by requiring the Ministry of Economy and Finance to submit annual reports detailing climate- and SDG-aligned expenditures by sector. These can be reviewed by Commission 2 (on Finance) to evaluate their alignment with LTS4CN objectives.
- Advocate for the full operationalization of the SDG budget tagging framework, that was developed in 2022, as a foundational tool for integrating green and climate priorities into public investment decisions.
- Approve increased investment in low-carbon transport and irrigation infrastructure, especially those supporting LTS4CN agriculture and energy targets.

Oversight Actions:

- Institute annual parliamentary hearings on LTS4CN progress, with testimony from relevant line ministries (e.g., Ministry of Environment, Ministry of Mines and Energy, Ministry of Agriculture).
- Request sector-specific implementation reports from ministries, focusing on measurable indicators such as MtCO2e reductions or hectares of forest restored.
- Establish a Joint Climate Monitoring Taskforce under the NA, drawing membership from Commissions 2, 3, and 4, to track LTS4CN implementation.

Convening and Awareness Actions:

- Host at least two annual roundtables convened by Commission 3, bringing together subnational officials, CSOs, and youth representatives to discuss LTS4CN implementation challenges in forestry and agriculture sectors.
- Launch a Climate Dialogue Series in Parliament, including public sessions on sector-specific decarbonization pathways.

CONCLUSION AND STRATEGIC RECOMMENDATIONS

Cambodia's Long-Term Strategy for Carbon Neutrality (LTS4CN) sets an ambitious yet achievable pathway to reach net-zero emissions by 2050. Realizing this vision requires coordinated, sustained action across all sectors of society, and the National Assembly (NA) is uniquely positioned to serve as a key player in this national effort.

As the highest legislative body, the NA holds the constitutional mandate to shape national laws, approve public budgets, scrutinize government performance, and represent the voices of the people. These functions are not merely procedural; they are strategic levers for driving systemic change. To unlock their full potential in support of LTS4CN, parliamentarians must go beyond passive endorsement and take proactive ownership of climate governance.

To this end, the National Assembly can pursue the following strategic actions :

- **Embed LTS4CN targets into national legislation**

  Climate objectives must be translated into enforceable legal frameworks across sectors such as energy, agriculture, forestry, waste, and industry. This includes adopting new laws (e.g., on renewable energy and carbon pricing) and updating existing legislation to reflect carbon neutrality commitments.

- **Align budgetary decisions with climate and SDG priorities**

  Parliament must ensure that annual and medium-term public investment plans are "climate-tagged" and reflect green development goals. The SDG budget tagging framework, developed in 2022, could be fully implemented to systematically track and integrate climate and sustainability expenditures across sectors. This will improve budget transparency, enhance funding efficiency, and strengthen alignment with LTS4CN implementation.

- **Institutionalize parliamentary oversight of LTS4CN progress**

  Oversight commissions can be empowered to systematically track progress toward LTS4CN indicators, such as sectoral emissions reductions, reforestation targets, and clean energy share. This includes requesting implementation reports, conducting hearings with line ministries, and mandating public disclosure of results.

- **Leverage the NA's convening power for inclusive climate dialogue**

  Parliament can build public legitimacy and local ownership of LTS4CN by regularly engaging with subnational authorities, civil society, academia, and the private sector. Roundtables, hearings, and parliamentary forums can be institutionalized to connect national policies with community-level realities.

- **Promote inter-parliamentary collaboration and learning**

  Cambodia's NA can benefit from exchanging knowledge and practices with other legislatures working on carbon neutrality. Participation in ASEAN forums, South-South parliamentary networks, and climate-focused assemblies such as the ASEAN Inter-parliamentary Assembly (AIPA), Asia Pacific Parliamentary Forum (APPF), Assemblée Parlementaire de la Francophonie (APF), and Asian Parliamentary Assembly (APA) can enrich institutional learning and innovation.

By strategically aligning its legislative, budgetary, oversight, and representative functions with LTS4CN and adopting tools like SDG budget tagging, the National Assembly can help institutionalize carbon neutrality as a long-term national objective. In doing so, it can serve not just as ombudsman, but as a catalyst — to drive transparent, inclusive, and accountable climate action for current and future generations.

Beach at Pattaya City, Thailand (Photo: Kirandeep Singh Walia, Jun 2024)

7

ADVANCING THAILAND'S CLIMATE COMMITMENTS THROUGH BUDGET TAGGING: A POLICY PROPOSAL

MR PHUBET SENBUT, MR PANUPONG PHECTSUWAN AND MS BOONWISA CHAIYARATANA

ABSTRACT

Climate Budget Tagging (CBT) presents a vital governance mechanism for Thailand, which faces severe climate vulnerability as the 30th most at-risk country globally. This paper analyzes Thailand's significant climate threats: rising temperatures projected to increase by up to 3.8°C by 2099, extreme weather events like the 2024 floods affecting 47 provinces, coastal inundation threatening 12 million Bangkok residents, and agricultural decline including projected a 5.3% reduction in rice yields. These challenges could reduce Thailand's economic growth by 6.7% by 2050, resulting in $220 billion in losses. Despite Thailand's ambitious climate commitments, including 30-40% emissions reduction by 2030, the document identifies 3 critical finance governance failures: **severe underfunding** (environmental protection receives just 0.36% of the national budget), **high volatility** (22.36% coefficient of variation), and **systemic opacity** (climate expenditures fragmented across 17 ministries with no unified tracking). These deficiencies create a causal chain that impedes NDC implementation and limits access to international climate finance. The paper advocates for implementing CBT as a targeted institutional fix, drawing on successful models from Indonesia, the Philippines, Nepal, and Bangladesh. Recommendations include developing a Thailand-specific CBT methodology, implementing through a phased approach starting with key ministries, building institutional capacity, integrating with existing financial systems, publishing annual climate budget statements, and strengthening cross-ministerial coordination. By systematically identifying and tracking climate expenditures, Thailand can enhance transparency, improve resource allocation, strengthen international climate finance access, and ultimately build greater climate resilience.

INTRODUCTION

Thailand stands at a critical climate crossroads, facing one of the highest vulnerability levels to climate change in Southeast Asia. The country ranks 30th globally on the Climate Risk Index for 1993-2022 annual averages [1]. During this period, Thailand has experienced significant climate-related losses, while globally such disasters have

claimed over 765,000 lives and caused nearly $4.2 trillion in direct damages. Thailand's vulnerability is manifested through a complex interplay of multiple climate stressors, as elucidated in the following analysis:

(1) Thermal stress projection: Climatological models indicate that Thailand will experience significant thermal amplification, with mean temperature elevations of 1.0–1.9°C projected for the 2040-2059 period across multiple Representative Concentration Pathways (RCPs). Under high-emission scenario RCP8.5, this thermal anomaly could potentially reach 3.8°C by the 2080–2099 period, substantially exceeding global mean temperature increases [2].

(2) Hydrometeorological extremes: Empirical evidence demonstrates an intensification of precipitation anomalies and extreme weather phenomena in recent decades. The 2024 hydrological disaster affected 47 provinces with 57 documented fatalities. Contemporary climate modeling further suggests an elevated probability of intensified tropical cyclonic activity, with particular concern regarding decreased translational velocity of storms traversing mainland regions, thereby prolonging precipitation duration and increasing flood potential [3].

(3) Coastal inundation risk: Bangkok, Thailand's primary urban metropolis and economic nexus, is subject to considerable existential risk from eustatic sea level rise. Revised digital elevation models indicate that approximately 12 million inhabitants reside within potential inundation zones projected for 2050, representing a substantial proportion of the nation's urban population and economic activity [4].

(4) Agricultural productivity decline: Thailand's agronomic systems demonstrate significant vulnerability to climate perturbation, particularly rice cultivation, which constitutes a fundamental component of both food security and economic activity. Quantitative projections indicate a 5.3% reduction in rice yield potential during the 2041-2050 period under moderate emissions scenario RCP4.5. This productivity decline is attributable to the synergistic effects of thermal stress and precipitation pattern alterations. Additionally, coastal agricultural regions face compound challenges from saline intrusion, which progressively diminishes arable land suitable for rice cultivation [2].

The economic impacts of these climate challenges are staggering. Beyond the previously cited flood-related damages projected at 2.6% of annual GDP, comprehensive analysis suggests climate change could reduce Thailand's economic growth by 6.7% by 2050 under a business-as-usual scenario [5]. This would translate to cumulative losses exceeding 7.5 trillion baht (USD220 billion) over the next three decades, fundamentally undermining the nation's development trajectory. The agricultural sector, employing 30.7% of Thailand's workforce and contributing 8.1% to the nation's GDP, demonstrates acute vulnerability [6]. The 2019-2020 drought caused 26-billion-baht (USD 802 million) damages affecting 1.3 million rai24 of farmland [7] and reduced GDP by 0.27% [8]. By 2050, without significant adaptation measures, climate change is projected to substantially impact agricultural productivity and rural livelihoods [9].

In response to these escalating threats, Thailand has made significant international climate policy commitments. There are **the Paris Agreement,** for which Thailand pledged to reduce greenhouse gas emissions by 20-25% from projected BAU levels by 2030 [10].

24 In Thailand, "rai" is a unit of land measurement. One rai is equivalent to 1,600 square meters or approximately 0.4 acres.

Thailand's updated NDC (2022) increased this ambition to 30-40% emissions reduction by 2030 [11], with specific sectoral targets for energy, transport, waste, and industrial processes [12]. **The National Adaptation Plan (2023-2027)** identifies 6 priority sectors for adaptation: water management, agriculture and food security, tourism, public health, natural resource management, and human settlements [13].

However, a critical implementation gap exists between these ambitious policy frameworks and the financial mechanisms needed to achieve them. The Office of Natural Resources and Environmental Policy and Planning (ONEP) estimates that fully implementing Thailand's climate commitments would require approximately 1.5 trillion baht (USD 44 billion) by 2030. Yet, current budgetary allocations explicitly tagged for climate action represent less than 3% of the annual national budget, creating a substantial financing shortfall [14].

Furthermore, climate expenditures remain fragmented across numerous ministries and agencies, with no standardized system to identify, track, or evaluate their effectiveness. This lack of transparency obscures the true level of climate investment, prevents efficient resource allocation, and hampers Thailand's ability to assess progress toward its climate goals or to access international climate finance effectively.

Climate Budget Tagging (CBT) is a systematic approach to identifying, classifying, weighing, and tracking climate-relevant expenditures within a government's budget system. It creates a framework for monitoring and reporting how climate-related finance is allocated across different government entities, programs, and activities.

This thematic brief makes an urgent and evidence-based case for the systematic integration of Climate Budget Tagging (CBT) within Thailand's public financial management architecture. Through the implementation of CBT, Thailand can transform its climate ambitions from policy documents into operational realities, ensure strategic alignment between financial resources and climate commitments, enhance accountability for climate expenditures, and ultimately build the climate resilience necessary for sustainable development in an era of unprecedented environmental change.

THE CASE FOR CLIMATE BUDGET TAGGING IN THAILAND

Current Budget Structure and Critical Need for Climate Finance Tracking

Thailand's ambitious climate policy goals, articulated in the 20-Year Strategic Plan (2018-2037) and National Adaptation Plan (NAP), stand in stark contrast to its budgetary allocations. Analysis of Thailand's fiscal architecture reveals three fundamental structural barriers to effective climate finance: severe underfunding, high volatility, and systemic opacity.

First, quantitative analysis demonstrates a substantial asymmetry in resource allocation within Thailand's fiscal framework. The Environmental Protection category, the nominal repository for climate-related initiatives consistently occupies the most marginalized position among all ten functional categories, receiving a mere 0.36% of aggregate national appropriations (13.49 billion baht / USD 416 million) for fiscal year (FY) 2025. This allocation is insignificant when juxtaposed against competing priorities: General

Public Services and Economic Affairs receive 65.9-fold and 65.5-fold greater appropriations, respectively. To contextualize this disproportionality, the entirety of annual Environmental Protection resources equates to merely 5.6 days of expenditure within the Economic Affairs domain. Furthermore, this already constrained allocation must concurrently address pollution mitigation, biodiversity conservation, and natural resource stewardship, thereby relegating direct climate financing to an even more diminutive fraction—manifestly inadequate when contrasted with the estimated 1.5 trillion-baht (USD 44 billion) required by 2030 to fulfill Thailand's climate commitments.

Secondly, budgetary volatility presents a significant compounding factor for climate finance planning. Statistical analysis reveals that the Environmental Protection budget exhibits a coefficient variation of 22.36% (second highest among all functional categories), exemplified by an unprecedented 48.21% reduction between fiscal years 2021 and 2022, constituting the most substantial percentage decrease observed across any budgetary category during the examined period. This volatility presents a stark contrast to other critical sectors such as Education (3.80%) and Public Order and Safety (4.21%), which benefit from considerably more stable financing. Such pronounced fiscal instability renders sustained, longitudinal climate program planning and implementation virtually impossible, particularly for adaptation initiatives necessitating consistent investment horizons and programmatic continuity.

Thirdly, these financial constraints are further exacerbated by structural opacity in climate expenditure tracking methodologies. Climate change mitigation and adaptation interventions lack explicit allocative designations within the budgetary framework, while Environmental Research and Development—instrumental for climate innovation—received zero fiscal appropriation in 2021 and 2022, followed by a nominal 194.07 million baht (0.005% of the national budget) in 2025. More fundamentally, climate-related expenditures are characterized by pronounced institutional fragmentation, being dispersed across a minimum of 17 ministries with no unified taxonomic or tracking system. The Ministry of Natural Resources and Environment, despite being the principal climate policy custodian, exercises fiscal jurisdiction over only 23% of identified climate-relevant budgetary items [14].

These structural deficiencies generate cascading implications for climate finance governance. In the absence of systematic expenditure classification mechanisms, climate-related appropriations remain obfuscated within broader budgetary categorizations, thereby impeding effective accountability and performance assessment. Illustratively, renewable energy initiatives under the Ministry of Energy's purview (approximately 4.2 billion baht in FY 2023) are classified under Economic Affairs rather than being identified as climate mitigation investments [15]. This institutional opacity directly impedes Thailand's implementation of its Nationally Determined Contributions due to the inability to establish demonstrable financial alignment with these quantified targets. Moreover, it constitutes a significant impediment to accessing international climate finance mechanisms, as evidenced by the Green Climate Fund's explicit citation of this deficiency as a determinative factor in rejecting two recent project proposals from Thailand, specifically noting that "demonstration of national climate finance tracking would substantially strengthen future proposals" [14].

Table 1. Thailand's Budget Structure between FY 2020 – 2025

Unit: MN Baht	2020	2021	2022	2023	2024	2024
General Public Services	750,643	736,591	731,228	722,228	914,852	888,853
Economic Affairs	683,204	669,602	685,561	764,225	785,758	883,054
Education	493,823	482,765	453,891	451,834	455,251	477,392
Social Protection	413,728	456,675	366,201	383,756	408,572	430,732
Health	292,391	343,906	322,976	310,796	332,582	354,456
Public Order and Safety	200,663	202,023	186,901	189,194	195,351	208,831
Defense	228,545	210,203	196,571	192,120	194,092	197,535
Housing and Community Amenities	103,316	147,616	129,886	144,284	164,849	278,078
Recreation, Culture, and Religion	20,998	20,439	18,424	16,496	16,708	20,277
Environmental Protection	12,689	16,143	8,361	10,068	11,987	13,491

Sources: Ministry of Finance

Rice harvesting, Mae Wang, Chiang Mai Province, Thailand (Photo: Wikipedia, Nov, 2014)

Table 2. The Proportion of Thailand's Budget Structure between FY 2020 – 2025

	2020	2021	2022	2023	2024	2024
General Public Services	23.46%	22.42%	23.59%	22.68%	26.29%	23.69%
Economic Affairs	21.35%	20.38%	22.11%	23.99%	22.58%	23.53%
Education	15.43%	14.69%	14.64%	14.19%	13.08%	12.72%
Social Pr otection	12.93%	13.90%	11.81%	12.05%	11.74%	11.48%
Health	9.14%	10.47%	10.42%	9.76%	9.56%	9.45%
Public Order and Safety	6.27%	6.15%	6.03%	5.94%	5.61%	5.56%
Defense	7.14%	6.40%	6.34%	6.03%	5.58%	5.26%
Housing and Community Amenities	3.23%	4.49%	4.19%	4.53%	4.74%	w.41%
Recreation, Culture, and Religion	0.66%	0.62%	0.59%	0.52%	0.48%	0.54%
Environmental Protection	0.40%	0.49%	0.27%	0.32%	0.34%	0.36%

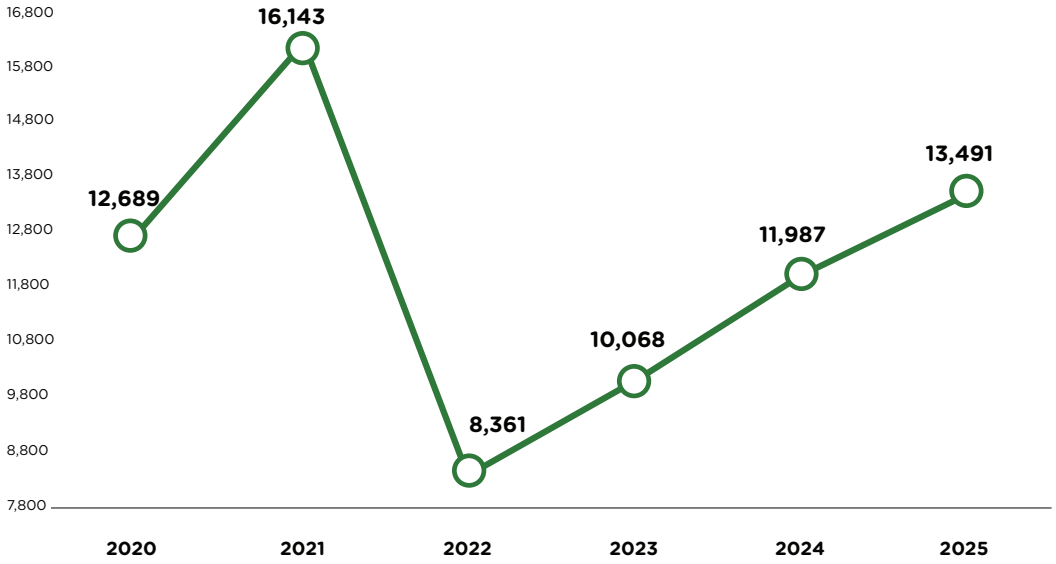
Sources: Ministry of Finance

Table 3. Thailand's Environmental Protection Subcategory Budget between FY 2020 - 2025

Unit: MN Baht	2020	2021	2022	2023	2024	2024
Ecosystem and Landscape Protection	2,001	3,045	2,577	3,217	4,469	4,047
Other Environmental Activities	5,844	8,436	1,726	2,814	2,262	3,386
Pollution Control and Elimination	2,952	2,480	2,340	2,579	2,462	2,601
Wastewater Management	631	918	981	889	1,690	2,392
Waste Disposal	1,253	1,264	736	567	823	871
Environmental Research and Development	8	-	-	2	282	194
Total	**12,689**	**16,143**	**8,361**	**10,068**	**11,987**	**13,491**

Sources: Ministry of Finance

Figure 1. Thailand Environmental Protection Budget Allocation



Sources: Ministry of Finance

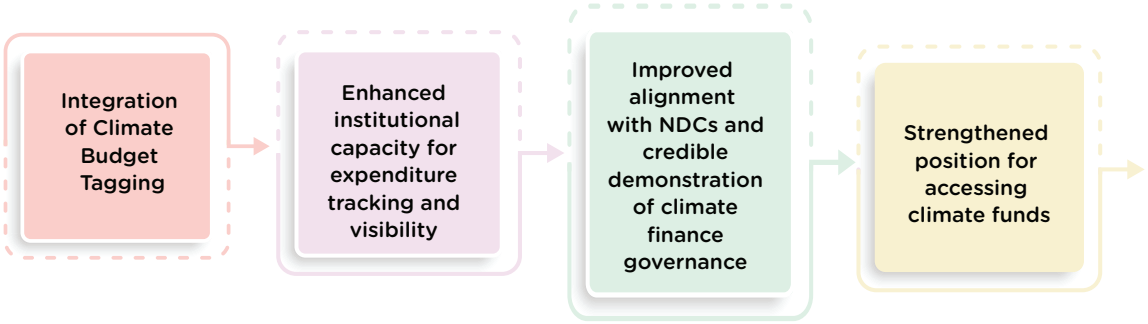
Potential Benefits of Climate Budget Tagging Implementation

Climate Budget Tagging represents a targeted institutional intervention designed to address a specific causal chain of governance deficits in Thailand's climate finance architecture. This section examines how CBT could potentially disrupt this problematic sequence and create a more favorable institutional pathway.

Current Institutional Sequence shown

The current institutional architecture exhibits a clear causal relationship between these elements. Thailand's inability to systematically identify and track climate-relevant expenditures across multiple ministries and budget categories (as documented in Section 2.1) directly impedes its capacity to demonstrate progress toward NDC commitments. This implementation deficit, in turn, has tangibly limited Thailand's access to international climate finance" [14] .

Proposed Institutional Intervention Pathway as shown below



Climate Budget Tagging appears particularly well-suited as an institutional fix for Thailand's specific governance challenges for several interconnected reasons, including:

1. **Directly Address Fiscal Opacity as** CBT would establish standardized methodological criteria for identifying climate-relevant allocations across Thailand's fragmented institutional landscape. The systematic classification framework would likely bring previously obscured climate-relevant spending into institutional visibility, potentially enabling Thailand to demonstrate a more comprehensive financial commitment to climate action than is currently possible under existing budgetary structures.
2. **Institutional Mechanism for NDC Implementation** because by explicitly connecting budgetary allocations to specific components of Thailand's Nationally Determined Contributions, CBT would likely provide the institutional linkage currently absent between fiscal management and climate policy implementation. Research suggests that when policy commitments are explicitly tied to trackable expenditures, implementation outcomes tend to improve as institutional accountability mechanisms become operational [10].
3. **Procedural Gateway to International Climate Finance** as the establishment of a robust CBT framework would directly address the specific institutional deficiency cited by international climate funds in their assessment of Thailand's finance proposals. By implementing transparent expenditure tracking mechanisms, Thailand would meet an explicit procedural requirement that has demonstrably prevented access to climate finance resources. The Green Climate Fund has specifically indicated that "demonstration of national climate finance tracking would strengthen future proposals" [14], suggesting a direct causal relationship between the implementation of CBT and improved access to international funding.
4. **Enhanced Institutional Coordination** as the fragmentation of climate expenditures across at least 17 ministries with no unified tracking system represents a significant governance challenge. CBT would establish a common methodological framework that could potentially enhance cross-sectoral coordination through improved institutional visibility of climate initiatives across governmental entities. This institutional harmonization appears particularly important given that the Ministry of Natural Resources and Environment controls only 23% of identified climate-relevant budget items [14].

   The literature on institutional reforms in climate governance suggests that targeted procedural interventions like CBT can be particularly effective when they address specific administrative bottlenecks rather than attempting comprehensive governance

restructuring [5]. In this context, CBT represents not merely a technical improvement in budget classification, but a strategic institutional fix that directly targets the causal chain of governance deficits currently impeding Thailand's climate finance effectiveness.

LEARNING FROM INTERNATIONAL EXPERIENCE

The selection of Southeast Asian and South Asian countries for comparative analysis is methodologically deliberate, as these nations share critical contextual similarities with Thailand that suggest the transferability of their experiences. These cases were specifically chosen based on three relevant criteria: (1) comparable governance structures and public financial management systems that operate within similar institutional constraints; (2) analogous climate vulnerability profiles with particular emphasis on agricultural sector impacts and disaster risk exposure; and (3) parallel development contexts including resource limitations and competing socioeconomic priorities. Furthermore, these cases represent different implementation pathways and institutional approaches to CBT, offering Thailand a spectrum of design options that can be evaluated against its specific governance context.

Southeast Asian and South Asian countries have implemented Climate Budget Tagging systems that offer valuable lessons for Thailand, particularly given their similar governance structures, climate vulnerabilities, and development contexts. These cases demonstrate both the feasibility and benefits of CBT implementation in comparable environments.

1. **Nepal's implementation of CBT,** where Nepal introduced climate budget tagging in its national budget in FY 2012/13, initially allocating 6.7% of the total budget to climate-related expenditures. By FY 2023/24, this allocation had increased to 35%, demonstrating a significant commitment to integrating climate considerations into fiscal planning. This systematic approach has improved budgetary decision-making and policy implementation, aligning financial resources with climate policy objectives [16].
2. **Indonesia's climate budget tagging system** was implemented in 2016, integrating it into the national planning and budgeting system. This initiative has enhanced transparency in climate finance and supported strategic resource allocation across ministries. The tagging system facilitates the identification of climate-related expenditures, ensuring consistency with national climate action plans [17].
3. **The Philippines amended its Climate Change Act (2009)** to institutionalize CBT, mandating the tagging of climate-related expenditures in national and local budgets. This legal integration has strengthened the country's climate finance management and facilitated better reporting on climate-related spending [18].
4. **Bangladesh adopted a Climate Fiscal Framework (CFF) in 2014,** updated in 2020, to integrate climate change into economic management. The CFF includes budget tagging as a key component, enhancing the country's capacity to track climate finance flows and improving coordination between government agencies involved in climate action [19].

These examples demonstrate several approaches Thailand could adopt including Indonesia's integration of CBT into existing planning systems which offers a model for minimal disruption; the Philippines' legislative approach that provides durability

and enforceability; Nepal's experience showcasing how CBT can lead to substantial increases in climate-related allocations; and Bangladesh's comprehensive fiscal framework demonstrating how tagging can be part of a broader climate finance strategy.

LEGAL AND INSTITUTIONAL FRAMEWORK FOR CBT IN THAILAND

Thailand's existing legal and institutional frameworks provide a foundation for integrating Climate Budget Tagging into its public financial management system. This section examines the current institutional structure and proposes strategic improvements.

EXISTING FRAMEWORK

Thailand has a well-established climate policy and institutional framework that can support CBT implementation. The country has shown commitment to international climate action through multiple agreements and domestic policy initiatives, including:

1. **International Commitments:** Thailand ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1994 and the Kyoto Protocol in 2002. As part of the Paris Agreement, Thailand pledged to reduce greenhouse gas emissions by 20-25% from projected Business-as-Usual (BAU) levels by 2030, later increasing this commitment to 30-40% in its updated NDC. At COP 26, Thailand set carbon neutrality targets by 2050 and net-zero greenhouse gas emissions by 2065.
2. **National Climate Master Plan (2015-2050):** This long-term framework establishes Thailand's climate policy vision of building climate resilience while moving toward low-carbon growth. The Master Plan identifies three main objectives: (a) building climate resilience through integrated adaptation measures across all sectors; (b) reducing greenhouse gas emissions and creating mechanisms for low-carbon sustainable growth; and (c) strengthening stakeholder capacity, awareness, knowledge, and technologies to support adaptation and low-carbon development.
3. **Institutional Structure:** Thailand has established the National Climate Change Policy Committee under the Prime Minister's Office Regulations on Climate Change Operations (2007). This high-level committee, chaired by the Prime Minister, includes permanent secretaries from 15 ministries, the Bangkok Metropolitan Administration, the National Economic and Social Development Council, the Budget Bureau, and various experts. This committee can provide strong high-level coordination for implementing CBT.
4. **Climate Fiscal Framework Initiatives:** A technical working group made up of the Office of Natural Resources and Environmental Policy and Planning, the National Economic and Social Development Council, the Budget Bureau, and the Public Debt Management Office has already begun work on climate fiscal frameworks, supported by UNDP. This group has conducted Climate Public Expenditure and Institutional Reviews (CPEIR), which provide an important foundation for CBT implementation.
5. **Draft Climate Change Act:** Thailand is currently considering a Climate Change Act that would strengthen the legal basis for climate action. The draft legislation includes provisions for climate data collection, emissions reduction, adaptation measures, and—importantly—budget allocations, requiring that annual budgets be allocated to government agencies with climate-related missions according to their implementation needs.

6. **Financial Sector Sustainability Initiatives:** A Working Group on Sustainable Finance composed of five financial regulatory bodies has published guidelines for developing Thailand's sustainable finance sector. This provides potential methods for tracking and verifying climate finance flows from both public and private sectors.

Despite these strengths, the current framework has notable gaps that hinder effective climate finance governance:

a. **Lack of Climate Expenditure Tracking Methods:** The existing budget system lacks standard procedures for identifying, classifying, and tracking climate-related expenditures across ministries and budget categories.

b. **No Climate Finance Reporting Requirements:** While the National Climate Master Plan emphasizes the importance of financial resources, it does not establish specific requirements for reporting or monitoring climate finance flows.

c. **Limited Cross-Ministerial Coordination on Climate Budgeting:** Despite high-level policy coordination through the National Climate Change Policy Committee, operational coordination on climate finance remains limited, with expenditures scattered across at least 17 ministries.

PROPOSED ENHANCEMENTS

Drawing lessons from regional experiences and building on Thailand's existing institutional structure, Thailand could improve its climate finance governance through several targeted approaches:

1. **Developing CBT-Specific Regulations:** The Ministry of Finance, working with the Bureau of the Budget, can issue budget circulars and technical guidelines defining criteria for tagging expenditures related to mitigation, adaptation, and dual-benefit projects. This approach uses existing executive authority without necessarily requiring legislative changes, similar to Indonesia's implementation model. These guidelines could be established:

    - Clear categories for classifying climate expenditures
    - Standard methods to account for the climate relevance proportion of expenditures
    - Verification and quality assurance procedures
    - Reporting templates and schedules

2. **Strengthening Coordination Mechanisms:** Establish a Climate Finance Coordination Unit within the Ministry of Finance, potentially as a subcommittee of the existing National Climate Change Policy Committee. This unit would:

    - Coordinate CBT implementation across ministries
    - Review and validate climate budget tags
    - Produce combined climate budget reports
    - Align budget allocations with climate policy priorities

3. **Enhancing Sub-national Governance:** Promote CBT at provincial levels by incorporating climate criteria into local budgetary processes, supported by appropriate frameworks for local climate finance. This approach is particularly important given Thailand's vulnerability to local climate impacts and the need for adaptation measures at sub-national levels.

4. **Administrative Integration:** Integrate CBT processes into existing budget preparation, execution, and reporting systems to minimize disruption and ensure sustainability. Specifically, Thailand could integrate CBT with:
    - The Government Fiscal Management Information System (GFMIS)
    - The e-Budgeting system of the Budget Bureau
    - The performance-based budgeting framework

5. **Using Existing Climate Fiscal Framework Initiatives:** Build upon the work of the technical working group on climate fiscal frameworks to expand from analytical reviews to operational budget tagging systems. The existing Climate Public Expenditure and Institutional Reviews provide valuable baseline data that can inform CBT methodology development.

6. **Connecting CBT to Thailand's Sustainable Finance Roadmap:** Create links between public sector CBT and the private sector sustainable finance initiatives being developed by Thailand's financial regulators. This integration would provide a comprehensive view of Thailand's climate finance landscape and improve reporting to international climate funds.

CONCLUSION AND RECOMMENDATIONS

Climate Budget Tagging offers Thailand a strategic opportunity to transform its climate finance governance. Implementing CBT would address the three fundamental challenges identified in this brief: resource insufficiency, fiscal volatility, and systemic opacity. Through the creation of transparent mechanisms to track climate expenditures across government institutions, Thailand can strengthen accountability, improve resource allocation, enhance access to international climate finance, and ultimately build greater climate resilience.

The implementation of CBT requires coordinated action across multiple government entities and with development partners. The following recommendations provide a practical roadmap for establishing an effective climate finance tracking system in Thailand.

RECOMMENDATIONS FOR PARLIAMENT

1. **Support legislative enhancements for climate finance:** While not essential for initial CBT implementation, parliamentary support through targeted amendments to the Public Finance Act B.E. 2561 would strengthen the institutional foundations of climate budgeting. Such amendments could include requirements for climate impact assessments for major budget allocations and regular climate finance reporting.

2. **Establish dedicated parliamentary oversight**: Create a specialized parliamentary committee focused on climate finance effectiveness. This committee should regularly review climate expenditure reports and evaluate outcomes against Thailand's international commitments and national climate objectives. This oversight function is particularly important given the current volatility in climate-related budget allocations.

RECOMMENDATIONS FOR EXECUTIVE BRANCH

Develop a comprehensive CBT methodology: The Budget Bureau and Ministry of Finance can lead the creation of Thailand-specific tagging procedures that build on international best practices while addressing the country's unique institutional landscape. The methodology could work across all ten functional budget categories, with particular attention to identifying climate components in non-environmental categories where they are currently hidden.

Implement through a phased approach: Begin with pilot implementations in key ministries with substantial climate-relevant portfolios, such as the Ministry of Natural Resources and Environment, Ministry of Energy, and Ministry of Agriculture and Cooperatives. Use these pilots to refine methodologies before expanding to all relevant sectors.

1. **Build institutional capacity:** Develop and deliver comprehensive training programs for officials responsible for budget preparation, execution, and reporting at all levels of government. This training could address both technical aspects of CBT and build an understanding of climate finance principles.
2. **Integrate with existing financial management systems:** Ensure CBT is fully integrated with Thailand's Government Fiscal Management Information System (GFMIS) and the e-Budgeting system used by the Bureau of the Budget. This integration will minimize disruption to existing workflows and increase sustainability.
3. **Publish annual climate budget statements:** Introduce climate budget statements as a standard component of annual budget documentation. These statements will provide a comprehensive view of climate-related expenditures across all functional categories, with clear tracking of trends over time.
4. **Strengthen cross-ministerial coordination:** Formalize coordination mechanisms that bring together the 17 ministries with climate-relevant budgets. The Climate Finance Coordination Unit recommended in Section 4.2 should have clear authority to ensure policy coherence and avoid duplication or gaps in climate finance.

RECOMMENDATIONS FOR DEVELOPMENT PARTNERS

1. **Provide targeted technical assistance:** Support the development of Thailand's CBT methodology and implementation strategy through specialized expertise in climate finance tracking. This assistance should focus on building long-term institutional capacity rather than one-time interventions.
2. **Facilitate regional knowledge exchange:** Create platforms for Thai officials to engage with counterparts from Indonesia, the Philippines, Nepal, and Bangladesh who have successfully implemented CBT. These peer-learning opportunities could include both high-level policy dialogue and technical working sessions.
3. **Support capacity development:** Offer financial and technical support for training programs, system development, and institutional strengthening. This support should emphasize the development of domestic expertise that can sustain CBT implementation over time.

4. **Promote standardized reporting frameworks:** Collaborate with Thai authorities to establish reporting systems that align with international standards while meeting domestic needs. These frameworks can serve to enhance the international comparability of Thailand's climate finance data, supporting improved access to global climate funds.

The implementation of CBT represents a strategic institutional intervention that directly addresses the governance deficits currently impeding Thailand's climate finance effectiveness. By creating greater transparency and accountability in climate spending, CBT would strengthen Thailand's capacity to implement its NDC commitments and enhance its access to international climate finance. This approach offers a practical pathway for Thailand to align its fiscal resources with its climate policy objectives, making a meaningful contribution to both climate resilience and sustainable development.

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Parliamentary Oversight of Climate Finance in ASEAN

Across the globe, communities are grappling with increasingly severe climate impacts—floods, droughts, and rising sea levels that threaten lives and livelihoods. Climate finance plays a pivotal role in equipping countries with the tools to adapt, build resilience, and take anticipatory action to protect their people and economies.

In Southeast Asia, where climate risks are intensifying, the gap between the region's climate finance needs and actual funding remains wide. As ASEAN countries push forward with ambitious climate goals, the role of domestic institutions in ensuring the effective use of funds becomes ever more critical. Parliamentary Oversight of Climate Finance in ASEAN explores how parliaments across the region can contribute to closing this gap.

Based on parliamentary briefing notes from the Philippines, Indonesia, Cambodia, and Thailand, the volume examines national approaches to climate budgeting, identifies institutional and technical barriers, and highlights opportunities for stronger legislative engagement. It provides practical entry points for enhancing parliamentary oversight to promote transparency, policy coherence, and impact.

A timely resource for policymakers, researchers, and practitioners, this book offers grounded insights into how parliaments can help drive more accountable, responsive, and results-oriented climate finance across the ASEAN region.

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