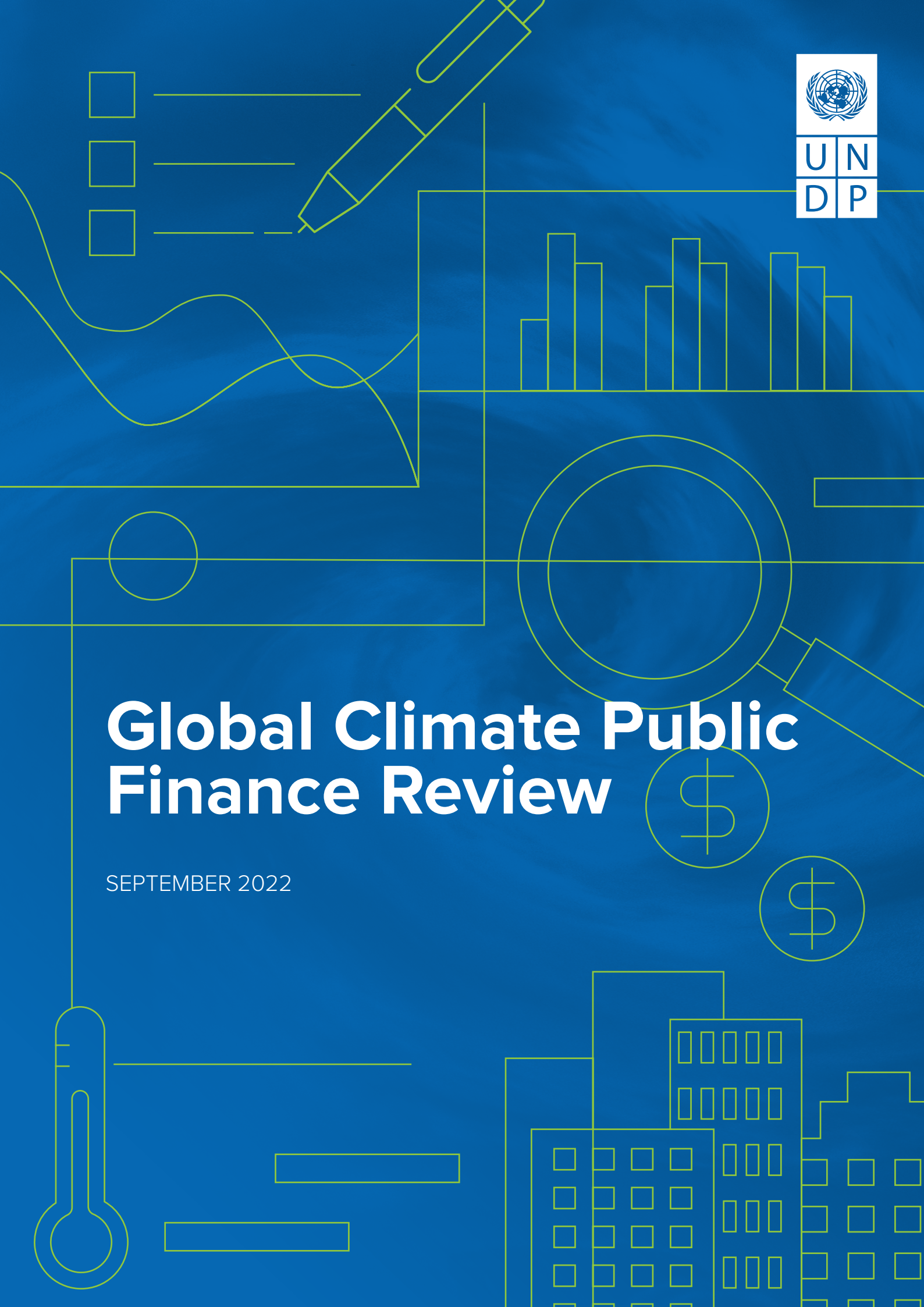




Global Climate Public Finance Review

SEPTEMBER 2022





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Foreword

In 2022, the impact of climate change has been felt like never before. Heat waves, drought, raging wildfires, typhoons, torrential rains, and flooding have not spared any continent, leaving millions of people distraught and causing millions of dollars in damage. It is increasingly apparent that climate change is affecting both developed and developing countries. However, the poorest and most vulnerable countries are being hit the hardest.

As scientists predicted, each decade is warmer than the previous one. The frequency and severity of climate-induced disasters is increasing sharply and rapidly, and the world is approaching dangerous tipping points. These dramatic trends make international cooperation and climate actions more necessary and urgent than ever before.

The Conference of the Parties (COP 26), in Glasgow, in November 2021, was a landmark event. It reaffirmed commitment to the Paris Agreement to keep global warming under 1.5°C. The outcome document - the Glasgow Climate Pact - urged parties to scale up action to meet mitigation and adaptation goals, while respecting and promoting human rights and gender equality. The Pact also called for doubling climate finance from 2019 levels, by 2025.

Despite renewed commitments, the world is way off-track to reach the objectives of the COPs. To achieve the Paris Agreement's 1.5°C objective requires a 55 percent reduction in emissions¹. However, the new and updated Nationally Determined Contributions (NDCs) fall far short only reducing 7.5 percent of emissions, which in turn may lead to a global temperature rise of at least 2.7 °C, by the end of this century.

Adequate financing for both climate adaptation and mitigation is critical for achieving the global climate goals. The UN Intergovernmental Panel on Climate Change (IPCC) estimates² that to adequately finance climate change measures, between \$1.6 trillion to \$3.8 trillion is required annually, until 2030. This figure is far higher than the estimated \$634 billion available in 2019/20.³

Climate financing is a pressing priority for developing countries most exposed to climate changes, which do not have sufficient domestic resources. To compound the situation, severe financial impacts caused by COVID-19, and spending on pandemic recovery programs, have limited the ability of many developing countries to invest in climate action.

So, leveraging and effectively managing climate finance with public and private resources is vital. Finance Ministries around the world have started to integrate climate change into national budget and fiscal policies. In Asia and the Pacific, governments with the support of UNDP projects funded by the United Kingdom and Sweden, have factored climate change into national planning and budgeting systems at national and sub-national levels. Several countries have also successfully leveraged new sources of financing, like green bonds and are attracting new investments for vital climate projects

To share experiences and accelerate international cooperation for climate actions, UNDP has documented climate finance reforms undertaken by governments across different regions and detailed their impact. The present review, analyses and synthesizes these reforms across different stages of a budget cycle namely the: Strategic Planning and Fiscal Framework; Budget Preparation and Approval; Budget Execution, Accounting & Reporting; and Control and Audit. The review offers key insights including achievements and challenges, which countries must overcome for climate responsive development plans and budgets.

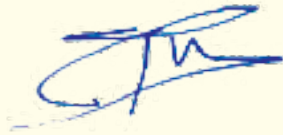
1 2021 Emissions Gap Report, United Nations Environment Programme (UNEP)

2 IPCC, 2018: Global Warming of 1.5°C (2019)

3 Global Landscape of Climate Finance 2021, CPI

It also examines other thematic areas that interact with Climate Public Finance reforms such as carbon pricing, debt instruments, state owned enterprises, and sub-national governance.

UNDP hopes this report and its recommendations will be useful to policy makers and practitioners to integrate climate change in the planning and budgeting processes, to help countries in climate change adaptation and mitigation.



Christophe Bahuet

Deputy Regional Director for Asia and the Pacific
Director Bangkok Regional Hub
United Nations Development Programme

Acknowledgements

UNDP's Governance of Climate Change Finance Team would like to express gratitude to the government officials, consultants and staff in UNDP country offices who gave their time generously to share their experiences and insights on this subject matter. In particular, we would like to thank Excellent Hachileka, Gianluca Merlo, Daisy Mukarakate, Suren Poghosyan, Shaikh Moniruzzaman, and Sujala Pant from UNDP for facilitating the regional consultations. We would also like to thank all the development partners - EU, FCDO, IMF, OECD, SIDA, World Bank – who shared their insights and experiences during the consultative sessions.

This report was compiled by the International Institute of Environment and Development (IIED), led by Paul Steele and Shanaz Broermann. The team also comprised of Diana Cardenas, Baiba Gaile, Kit Nicholson, and Sejal Patel.

The report was prepared under the overall guidance of Vivek Misra and Asad Maken from the UNDP's Governance of Climate Change Finance Team. It was reviewed by Fabien Gonguet and Claude Wendling (IMF); and Cristina Gregorio, Julie Teng, Szilvia Lehel, Tianyu Meng from UNDP.

About the Governance of Climate Change Finance Team (UNDP)

The Governance of Climate Change Finance Team of the UNDP Bangkok Regional Hub comprises of experts specializing in Governance, Public Financial Management, Development Finance and Political Economy, Climate Change, Gender & Social Inclusion, and Development Effectiveness.

About this Report

This report is intended for government agencies responsible for climate finance within Ministries of Finance, Ministries of Planning, or Climate Change Policy-making bodies who wish to strengthen the integration of climate change into their public financial management systems. It is also a repository for development practitioners and researchers working on climate finance and related issues.

About UNDP

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Title: Global Climate Public Finance Review (September 2022)

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Abbreviations

ARC	African Risk Capacity
CBA	Cost Benefit Analysis
CBT	Climate Budget Tagging
CC	Climate Change
CCBII	Climate Change Budget Integration Index
CCFF	Climate Change Financing Framework
CCRIF	Caribbean Catastrophe Risk Insurance Facility
CEGIM	Climate Economic Growth Impact Model
CFA	Central Finance Agency
CFF	Climate Fiscal Framework
CGE	Computable General Equilibrium
CO₂/CO₂	Carbon Dioxide
COP	Conference of the Parties (to UNFCCC; signatories of the agreement)
COP15	15 th Plenary COP; held in Copenhagen, Denmark, 2009
COP21	21 st Plenary COP; held in Paris, France, 2015
COP26	26 th Plenary COP; held in Glasgow, UK, 2021
COVID-19	(Novel) Coronavirus Disease 2019
CPEIR	Climate Public Expenditure and Institutional Review
CSOs	Civil Society Organisation
DAC	Development Assistance Committee (of OECD)
DFA	Development Finance Assessment
DRR	Disaster Risk Reduction
EFT	Ecological Fiscal Transfers
ETS	Emission Trading System
EU	European Union
GFLAC	Climate Finance Group of Latin America and the Caribbean (“Grupo de Financiamiento Climático para América Latina y el Caribe”)
GHG	Greenhouse Gas
HIPC	Heavily Indebted Poor Country
IIED	International Institute for Environment and Development
IMF	International Monetary Fund
FCDO	Foreign, Commonwealth & Development Office (of UK government)
GPP	Green Public Procurement

INDC	Intended Nationally Determined Contribution
INFF	Integrated National Financing Framework
KPI	Key Performance Indicator
LDC	Less Developed Country
LTS	Long Term Strategy
M&E	Monitoring and Evaluation
MDAs	Ministries, Departments and Agencies
MoE	Ministry of Environment
MoF	Ministry of Finance
MRV	Monitoring, Reporting and Verification
NBSAP	National Biodiversity Strategy and Action Plan
OECD	Organisation for Economic Co-operation and Development
PIMA	Public Investment Management Assessment (e.g., Climate-PIMA)
NAP	National Adaptation Plan
NCF	National Climate Fund
NDC	Nationally Determined Contribution
PCCFAF	Pacific Climate Change Finance Assessment Framework
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PEFA	Public Expenditure and Financial Accountability
PFM	Public Financial Management
PIM	Public Investment Management
SAI	Supreme Audit Institution
SDG	Sustainable Development Goal
SEADRIF	Southeast Asia Disaster Risk Insurance Facility
SIDA/Sida	Swedish International Development Cooperation Agency
SOEs	State Owned Enterprises
tCO₂	Total Carbon Dioxide Content
tCO₂e	Tonnes of CO ₂ equivalent
UN	United Nations Organisation
UNCDF	UN Capital Development Fund
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change

Exchange rate:

Oanda as at 15 March 2022 (using the currency converter tool):

<https://www.oanda.com/currency-converter/en/?from=EUR&to=USD&amount=NaN>

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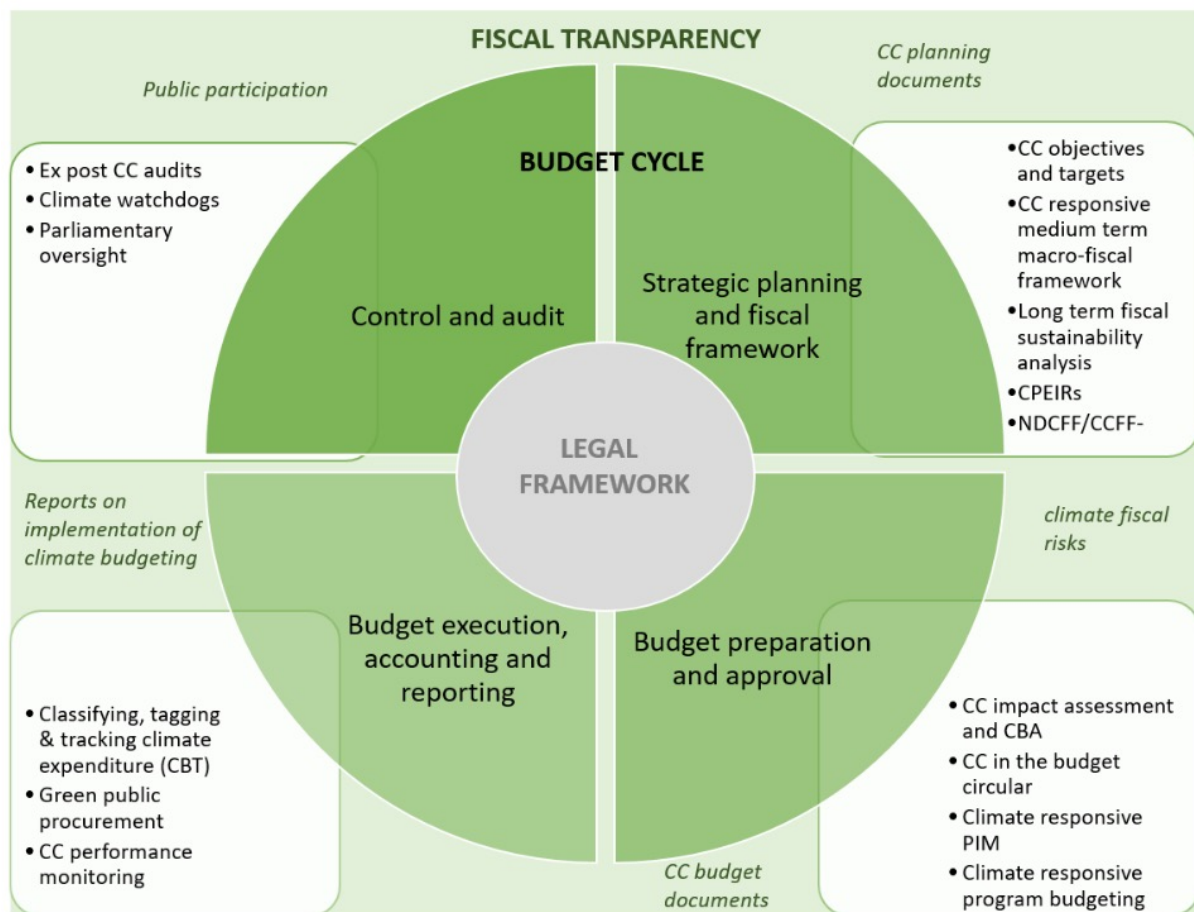
Executive Summary

The climate crisis is already negatively affecting human, animal and plant life on the planet, which requires urgent action globally from governments, the private sector and the international community. The most vulnerable children, women and men are likely to bear the brunt of the burden.

Achieving international climate goals and successfully transitioning to a net zero-carbon economy requires a comprehensive response that includes the reorientation of fiscal, financial, monetary, and expenditure decisions (UNDP, 2021a). Governments can play an important role in mobilizing and deploying climate finance effectively towards climate change adaptation and mitigation through deploying national policies, plans and budgets.

The global climate public finance review provides a stock-take and analysis of the reforms introduced globally to integrate climate change into public financial management (PFM) systems. The review makes use of an adapted version of the ‘green PFM’ framework (IMF, 2021a) for structure and analysis. It supports the gradual adaptation of existing PFM practices to make them climate sensitive. It covers the whole budget cycle as shown in Figure 1, including strategic planning and fiscal framework; budget preparation and approval; budget execution, accounting, and reporting; and control and audit.

Figure 1: Green PFM analytical framework



Source: (IMF, 2021a).

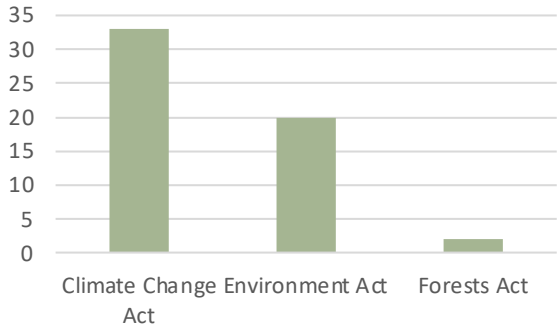
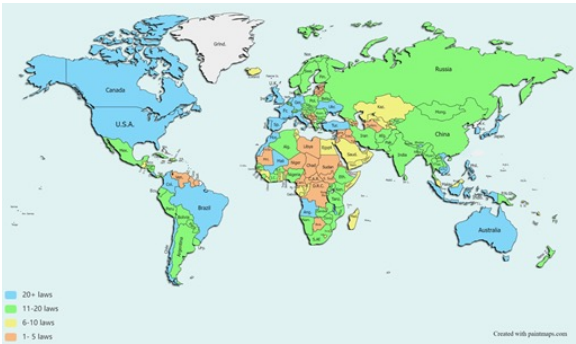
Notes: CC is Climate Change; CPEIRs are Climate Public Expenditure and Institutional Reviews; NDCFF are NDC Financing Frameworks; CCFF are Climate Change Financing Frameworks; CBA is Cost Benefit Analysis; PIM is Public Investment Management; CBT is Climate Budget Tagging.

Furthermore:

- This review also covers other important climate policy and PFM interfaces such as subnational governments and state-owned enterprises (SOEs).
- We extend our analysis to include extra-budgetary expenditure and the coordination of climate budgeting with the Sustainable Development Goals (SDGs).
- The review makes use of primary and secondary data sources.
- The results from the stock-take were validated through regional consultations⁴.

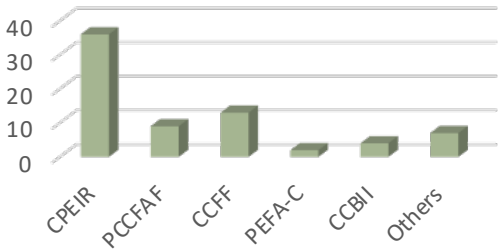
The main findings, key lessons learnt, and recommendations to strengthen climate responsive budgeting are outlined below (please note that the images and charts displayed below are for summary purposes only, and full, larger images are featured in greater detail throughout the main body of this text, which you can find in subsequent chapters).

Key Findings:

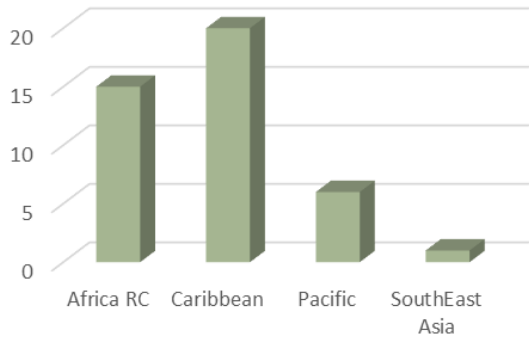


Most countries now have at least one climate change law or policy in place. Cumulatively, there are more than 2,500 climate related laws and policies.

33 countries have a Climate Change Act, 20 countries have an Environment Act, and 2 have a Forests Act which make reference to climate change.

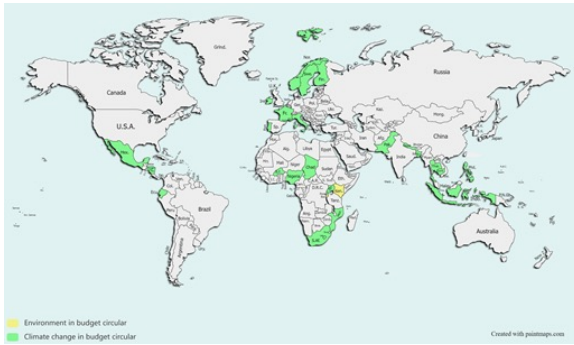


Countries have applied different review tools to assess the effectiveness of climate change policies and its integration into PFM systems.

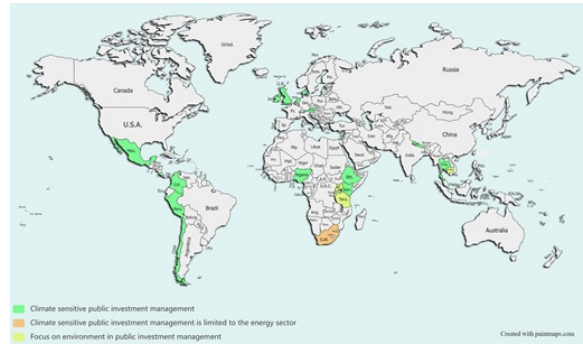


Countries have also availed themselves of a range of climate and disaster risk management instruments through regional insurance facilities.

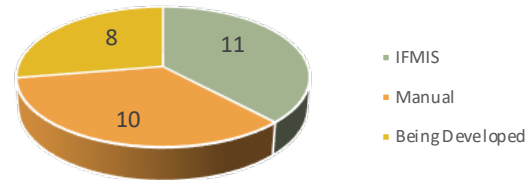
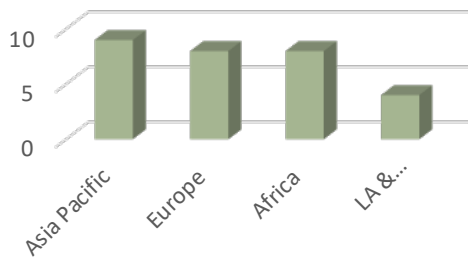
⁴ Regional consultations were held for Africa, Asia-Pacific, Europe and CIS, Latin America and Caribbean. Full reports from these consultations are available on request.



Climate change and/or environment has been integrated in budget circulars in many countries in Asia-Pacific, Africa, Europe and CIS, and LA.

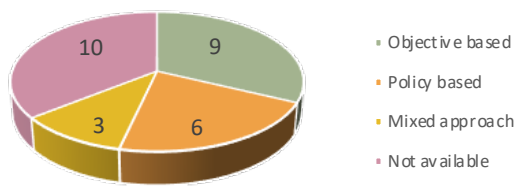


However, fewer countries have attempted to integrate climate change into their public investment management processes.



Climate Budget Tagging (CBT) is a growing area of interest among countries across all regions.

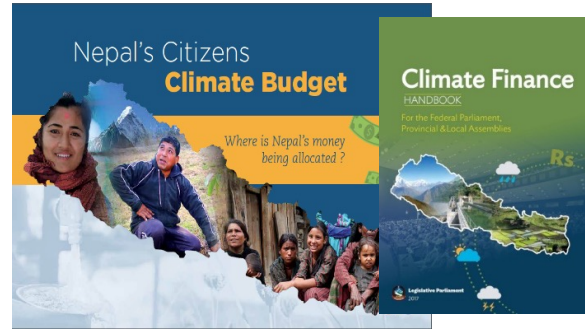
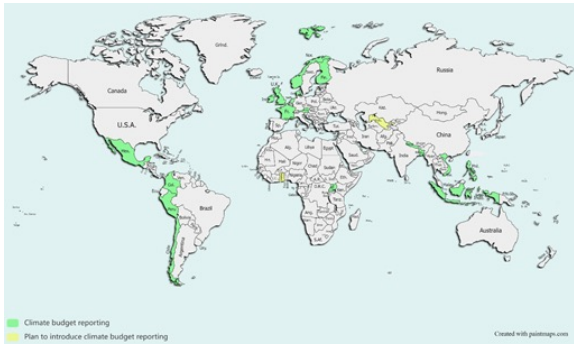
Some countries have integrated CBT in the financial management system; it still is manual in others.



Countries with CBT systems either adopt an objective-based or policy-based approach; a few have used a mixed approach.

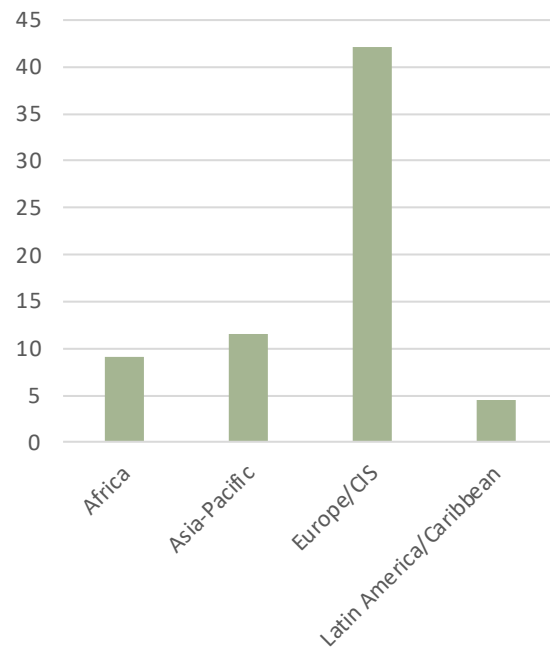
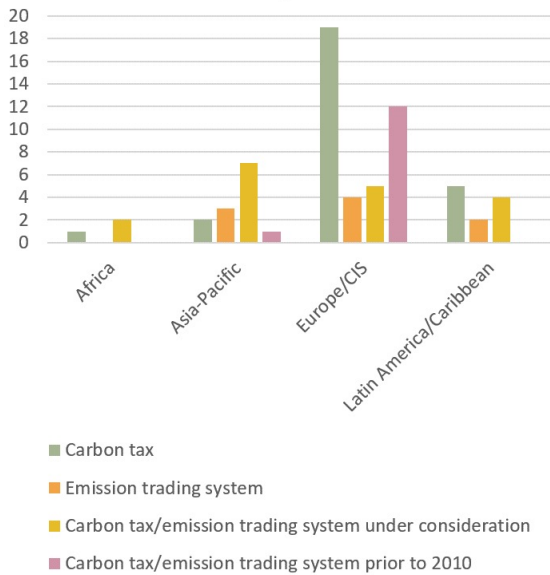


Green Public Procurement (GPP) is increasing across countries, particularly in the EU and Central Asia, and to some extent in Latin America and Caribbean.



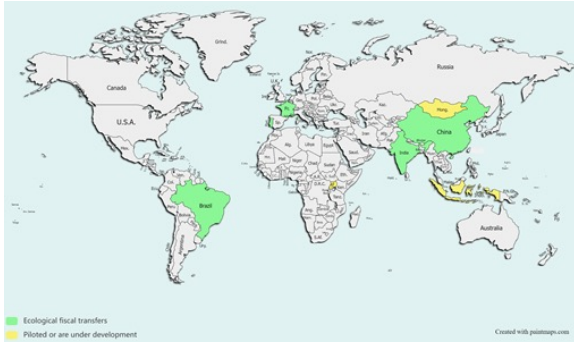
A limited number of countries publish climate budget reports; however, most only report on climate budget allocations. Very few countries publish data on actual climate expenditure, even among those countries with CBT systems.

However, some countries are developing tools for better transparency & accountability – examples include: *Citizen Climate Budgets*, *Handbook for Parliament*, *Climate Audits*.

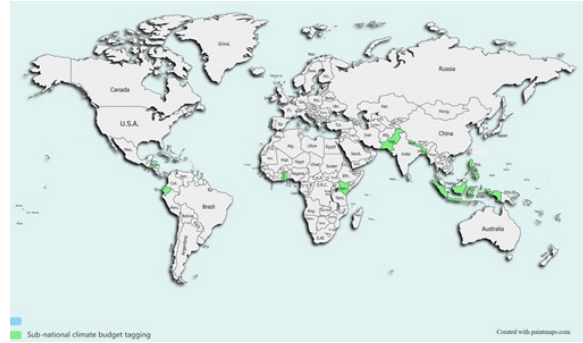


Globally, more countries are adopting carbon pricing instruments which now cover 21.5% of global greenhouse gas (GHG) emissions, an increase from 5% in 2010.

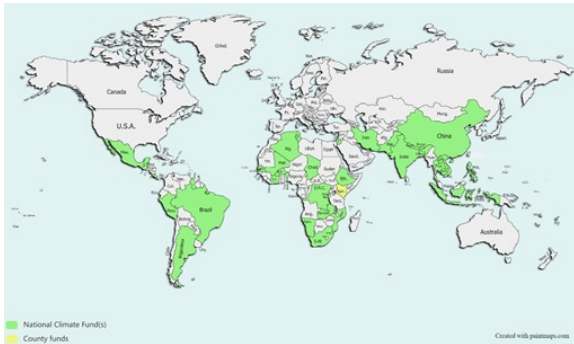
However, in most countries, the carbon price is lower than the price recommended to limit global warming to 2°C.



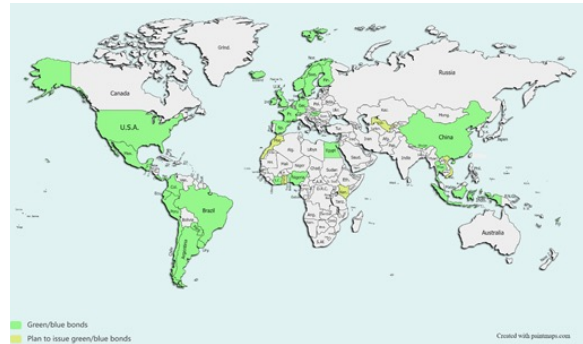
Conditional grants such as Ecological Fiscal Transfers (EFTs) have been used to incentivise sub-national governments to increase their efforts to reach environmental and climate change goals.



Most of the entry points for climate responsive budgeting identified along the budget cycle are also applicable to sub-national budgets. A few countries have introduced CBT at the sub-national level.



Developing countries have increasingly adopted national climate change funds. There is wide variability in the scope, mandate, legal basis, institutional arrangements, and financing modalities of related funds.



There has been rapid growth in the use of sovereign green/blue bonds.



Following the onset of the COVID-19 pandemic, countries worldwide adopted stimulus spending measures. However, most stimulus packages will have a net negative environmental impact (Vivid Economics, 2021)



More countries are adopting an integrated approach to climate change and other cross sectoral priorities such as disaster risk reduction, gender equality, and more generally, the SDGs.

Main Lessons Learnt:

There is great diversity in country experiences with climate responsive budgeting. Entry points cover the entire budget cycle and include other climate policy and PFM interfaces that help to mobilise and manage climate public finance, and incentivise climate action.

The pace of climate responsive budgeting reforms across countries varies, with some countries more advanced than others. Successful reforms have responded to country needs and built on existing PFM systems.

There is limited evidence on the impact of climate budgeting reforms. This is still a new and emerging field globally and it may, therefore, be too early to measure related impacts. However, there is need for countries to invest in monitoring and evaluation for assessing the socio-economic impact of climate public finance.

The successful implementation of climate responsive budgeting reforms requires leadership from the central finance ministry, or where appropriate planning agency, alongside support and sectoral expertise from the ministry of environment or climate change. Increasingly, the ministries responsible for finance and planning are leading the implementation of reforms. Dedicated climate change units within the ministry of finance/planning have been created, and/or cross-ministerial climate change committees headed in some countries by the President, Prime Minister, or central finance or planning agency.

Central to the success of reforms has been continuous capacity building for all officials involved with climate budgeting, including the ministry of finance and spending ministries and agencies.

Most experience across countries has been with upstream PFM processes such as strategic planning and budget formulation. This reflects the nascent field of climate responsive budgeting as most countries have started by integrating climate change into their national planning frameworks.

Most countries now have some climate change strategies or policies in place, usually in the form of a Nationally Determined Contribution (NDC) and, sometimes, a Long-Term Strategy (LTS) for Carbon Neutrality. However, the coverage and effectiveness is uneven across countries. In particular, there is no consensus over the best methods for developing financing frameworks for climate strategies. Most countries also have some climate change legislation in place.

A key enabling condition for climate responsive budgeting reforms is a sound policy and legal framework, as shown by the success experienced with the implementation of reforms in the Philippines, Indonesia, Kenya and France.

There are still gaps in climate macro-economic planning as modelling climate risks is complex due to the challenges in framing impact pathways, the number of variables involved, and uncertainty associated with climate change, as well as the country and context-specific nature of climate risks and impacts. As a result, only around a dozen countries globally have integrated climate change into their macroeconomic modelling frameworks or consider climate change in the fiscal risk assessment or statement.

Reviews of climate policy, expenditure and institutional roles (e.g. CPEIRs, PCCFAF, CCBII, Climate-PIMA)⁵ have proven to be effective at raising awareness about expenditure patterns and influencing budgeting processes, usually indirectly through policy. The reviews also identify key climate responsive budgeting reforms. However, the uptake of recommendations for climate reforms requires ownership and leadership from the government, particularly the ministry of finance.

Increasingly, countries are integrating climate change into their budget formulation processes by requiring spending ministries and agencies to develop, tag and submit climate sensitive budgets. Although the extent of integration varies across countries, at least 25 countries have included climate change in the budget circular or guidelines.

Climate sensitive CBA and appraisal options are important tools which could help governments select the best option to meet policy objectives. However, there has been limited experience globally, with only a handful of countries applying related tools when assessing public investments and programs.

There has been less progress with downstream processes such as budget execution, accounting, reporting, control, and audit. Due to the cross-cutting nature of climate change, climate budget tagging (CBT) has become a popular tool adopted by governments to help them classify, tag, and track their climate related expenditure. There is diversity in the country approaches to CBT, which respond to country contexts, including climate change policies and plans, international commitments, existing PFM systems and institutional capacity.

5 **CPEIRs:** Climate Public Expenditure and Institutional Reviews; **PCCFAF:** Pacific Climate Change Finance Assessment Framework; **CCBII:** Climate Change Budget Integration Index; **Climate-PIMA:** Climate Public Investment Management Assessments

The lack of publicly available data on climate change revenue and expenditure weakens climate transparency. Few countries report on their climate expenditure, including countries with CBT. Information produced from CBT should inform policy making and budgeting decisions. However, this feedback loop is often still weak and indirect, which necessitates additional mechanisms to ensure that data is used for decision making.

In most countries, climate change during legislative scrutiny is still considered as a Ministry of Environment issue, and therefore analysed within this narrow lens. Several countries have introduced laws which mandate the Executive to periodically report to the Legislature on progress made in reaching climate goals. This is intended to help raise the level of priority the government gives to climate change.

Other climate policy and PFM interfaces can play a significant role. Sub-national governments are important in addressing climate change action and funds are more likely to reach them by implementing the *Principles for Local Climate Action*. Many of the entry points for climate responsive budgeting identified at the national level are also applicable at the sub-national level.

When combined with other climate policies, carbon pricing can be an effective tool to help incentivise investment in low carbon development and generate revenue which can further support an equitable and inclusive low carbon transition. However, carbon

pricing policies will need to be more ambitious if they are going to make a significant contribution to meeting climate goals.

Climate change finance should be channelled through the budget process as this ensures the efficient allocation of resources to meet national priorities and intended accountability to the Legislature and ultimately to citizens. Currently, significant amounts of international climate finance is channelled outside of the budget process. This is usually delivered through a projects-based approach or through National Climate Change Funds (NCFs).

Some domestic climate finance is at times also channelled off budget. NCFs can be useful in funding time-bound programs that build awareness, information, and capacity that do not fit easily within the national budget. However, there are challenges in ensuring that NCFs do not compete with the national budget.

In the post COVID-19 environment with high debt levels and limited fiscal space, large scale debt for nature swaps and climate-related bonds offer potential for additional climate change finance. Governments have already raised significant amounts of climate finance through the issuance of Green or SDG bonds and several more countries have plans underway to introduce sovereign green bonds in the near future. There is growing interest in the potential for green KPI bonds to improve integration with the budget

Finally...

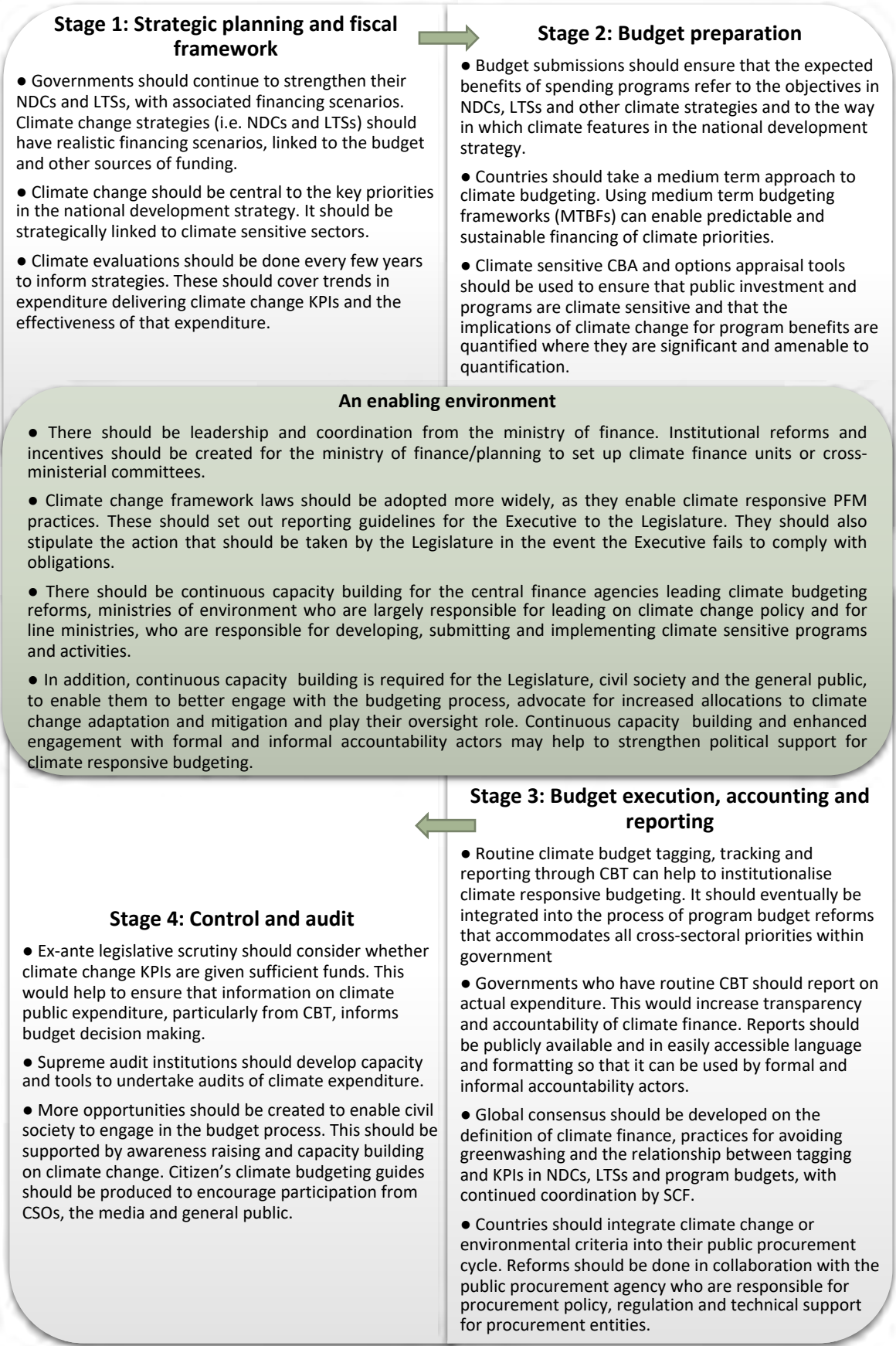
The effectiveness of climate finance can be enhanced by strategically linking climate change with other relevant policy areas such as gender, disaster risk management, poverty reduction, and the SDGs as a whole. Experiences across countries and regions vary and the coordination of climate budgeting with other cross-sectoral priorities will depend on country context and priorities.

Recommendations to Strengthen Climate Responsive Budgeting

Given the urgency of the climate emergency, many countries will seek to make budgets fully climate responsive, and this will require a marked and sustained increase in the pace of reform and an endpoint when separate climate tools are no longer applied, and climate is fully integrated into routine PFM across all stages of the budget cycle.

Country experiences will vary, as reforms should respond to country needs and build on existing PFM systems. Within this context, we provide a set of practical recommendations for strengthening climate responsive budgeting, as summarised in the graphic below (appears next page):

Figure 2: Four Stages of Strengthening Climate Responsive Budgeting





2.

Introduction

The adverse impacts of climate change on human, animal and plant life on the planet is real and evident. The emission of greenhouse gases (GHGs) resulting from human influence has warmed the atmosphere, oceans and land at an unprecedented rate (IPCC, 2021), resulting in rising sea levels, ocean acidification, changing weather patterns, and the increased frequency and intensity of extreme climate events⁶.

The OECD estimates that with global temperature rising between 1.5°C and 4°C, global real GDP may be lower by 2% to 10% by 2100 (OECD, 2015b). More recent evidence shows that the impact may be larger, with global GDP estimated to be 30% lower by 2100 (Kikstra et al., 2021)⁷.

Given the urgent need for climate change adaptation and mitigation, this has been declared the ‘decade of action’, with governments across the world taking action to address the climate emergency. Through the Paris Agreement, the international community and Governments⁸ have committed to (i) limiting the average global temperature rise to below 2°C above pre-industrial levels, revised to 1.5°C; (ii) increase adaptation to the adverse impacts of climate change; and, (iii) ensure finance flows are consistent with the transition towards low GHG emissions and climate resilient development (United Nations, 2015).

Climate change action is also an integral part of the Sustainable Development Goals (SDGs)⁹.

Climate finance is vital to support climate mitigation and adaptation actions. Mitigation actions aim to significantly reduce greenhouse gas emissions, often requiring large scale investments. Adaption action helps countries to adapt to and reduce the adverse effects of climate change.

There are multiple sources of climate finance, including local, national and transnational; from public, private, and alternative sources (UNFCCC, 2022a). Recognising that the contribution of countries to climate change and their capacity to mitigate and adapt ‘vary enormously’. Developed countries committed to jointly mobilizing USD 100 billion annually by 2020 in order to address the climate needs of developing countries¹⁰. Unfortunately this pledge has never been reached (UNFCCC, 2021a).

At COP 26 in Glasgow, 2021, parties agreed to start deliberations for setting a new collective quantifiable goal from a floor of USD 100 billion per year, as stipulated in the Paris Agreement. This is to be concluded by 2024 (UNFCCC, 2021c).

Global climate finance flows are substantially below the level required to reach internationally agreed objectives by 2030. In 2020, public and private spending on climate change was USD 632 billion, growing by 10% from the previous year. However, an increase of at least 590% is the figure that is required (Climate Policy Initiative, 2021) for spending to meet the requirement.

Due to their reliance on climate-sensitive natural resource sectors (e.g. agriculture) and lower adaptive capacity, developing countries consider adaptation as a greater priority, whereby the annual cost of adaptation is estimated to range between a minimum of USD 280 to 500 billion by 2050¹¹ (UNEP, 2016).

Only a small fraction of international climate finance – 7.4% – goes towards adaptation, while 90.1% is channelled towards climate change mitigation and 2.5% is allocated to projects with dual adaption and mitigation benefits (Climate Policy Initiative, 2021). At present, most of the climate adaptation financing comes from domestic budgets.

6 There is evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones (IPCC, 2021).

7 This estimate takes into consideration climate-economy feedbacks, temperature variability and extreme climate events and is therefore significantly higher than previous estimates which have focused on short-run loss and damage.

8 196 countries adopted the Paris Agreement at COP21 in Paris 2015.

9 In 2015, United Nations member states adopted Agenda 2030 for sustainable development. It contains 17 goals, with 169 targets, aimed at ending poverty and other deprivations and ensuring equitable, sustainable and environmentally friendly development (United Nations, 2020). Climate action is part of the SDGs and is explicitly addressed under SDG 13, although it is also vital for achieving all other SDGs.

10 The USD 100 billion goal was set at COP 15 in Copenhagen.

11 Costs are expected to be higher if 2°C global warming is exceeded.

Achieving international climate goals and successfully transitioning to a net zero-carbon economy requires a comprehensive response, including the reorientation of fiscal, financial, monetary and expenditure decisions (UNDP, 2021a). Many public policies have a direct or indirect climate impact and should therefore be considered in the context of climate responsive budgeting (IMF, 2021a).

Governments play a leading role in many of the sectors where climate action is required, delivering public investment and services related to climate and leveraging private funding. Some governments have developed climate change financing frameworks (CCFFs) to help them navigate the complex landscape of climate finance which includes domestic and international private and public finance.

Climate responsive budgeting is still a relatively new and emerging field, with just over a decade of experience with related reforms. Nepal was the first country to conduct a climate public expenditure and institutional review in 2011 (Government of Nepal, UNDP, & UNEP, 2014). Since then, diverse innovative approaches spanning the whole budget process have emerged.

Most countries globally have, to some extent, engaged with climate responsive planning, with a growing number of countries integrating climate change into their budget preparation stage. However, a limited number of countries have started to integrate climate change into their downstream PFM processes involving budget execution, accounting, reporting, and budget control and audit.

At times, climate responsive budgeting has been combined with other cross sectoral priorities such as gender equality and social inclusion, poverty reduction, disaster risk reduction, and more broadly the SDGs. There is growing recognition that the effectiveness of climate expenditure could be improved by taking a more integrated approach, for the coordination of climate change finance with other cross sectoral priorities.

The approach taken by countries will depend on national contexts, for instance, an integrated approach to climate change and disaster risk reduction has largely been adopted by Pacific Island nations, which are particularly vulnerable to climate induced disasters.

Climate change, gender equality, and social inclusion have become key criteria when applying for climate finance from the main international climate funds. Therefore, coordinating their response to climate change, gender equality and social inclusion could be another factor that helps countries access additional climate finance.

Climate change mainstreaming into PFM systems requires leadership from the central finance agency and political support for reforms. Ministries of finance have increasingly been leading the process, while ministries of environment continue to provide leadership on climate policy. The political momentum for climate budgeting was recognised by the formation in 2019 of the Coalition of Finance Ministers for Climate Action, guided by the Helsinki Principles, and in particular Principle 4¹², which focuses on mainstreaming climate change in economic policies.

The global climate public finance review provides a stock-take of reforms undertaken by different countries across the world to mainstream climate in the public finance system. It provides lessons learned from this experience and recommendations for the way ahead for the next decade.

- **Chapter 3** outlines the methodology applied.
- **Chapter 4** provides the stock-take analysis, framed around the four stages of the budget cycle, as well as other important climate policy and PFM interfaces.
- **Chapter 5** provides the summary conclusions, lessons learnt and practical recommendations to strengthen climate responsive planning and budgeting.
- The stock-take tables summarising the experience with climate responsive budgeting for Africa, Asia-Pacific, Europe and CIS and Latin America and Caribbean are provided in **Appendices A to D**.

¹² Helsinki Principle 4: Take climate change into account in macroeconomic policy, fiscal planning, budgeting, public investment management, and procurement practices

A blue-tinted photograph of a rocky coastline. The foreground shows the surface of the water with gentle ripples. In the middle ground, there are several large, dark, rounded rock formations. The sky is filled with soft, wispy clouds. The overall mood is calm and serene.

3.

Methodology and Approach

The global climate public finance review provides a stock-take and analysis of the reforms introduced globally to integrate climate change into PFM systems. Different frameworks have been proposed to analyse climate responsive budgeting. These often combine environmental concerns and are termed ‘green PFM’ (IMF, 2021a; OECD, 2021b).

There are also various guides and stock-takes which cover different stages of the budget cycle, such as the UNDP guidance note on integrating climate change into budgeting – with a focus on medium term budgets (UNDP, 2021a), and guidance note and stocktake on climate change financing frameworks (UNDP, 2017, 2018b).

There are several guidance notes and reviews on climate budget tagging (OECD, 2021a; UNDP, 2019a; World Bank, 2021a). Most reviews are limited to specific regions or country groups such as Africa (CABRI, IBP, IIED, & UNDP, 2021a), Asia-Pacific (UNDP, 2012, 2015b), Pacific island countries (Fouad, Novta, Preston, Schneider, & Weerathunga, 2021; Pacific Community, 2019; Pacific Islands Forum Secretariat, 2021), Latin America and Caribbean (IADB, 2021; UNDP, 2018a), and OECD (OECD, 2021b).

This review is the first to provide a global overview of the approaches, tools and methods used to integrate climate change into all four stages of the budget cycle. This has informed a set of lessons learnt and provided the basis for a practical set of recommendations on how to strengthen the mainstreaming of climate change into planning and budgeting. *This section outlines the framework and methodology applied.*

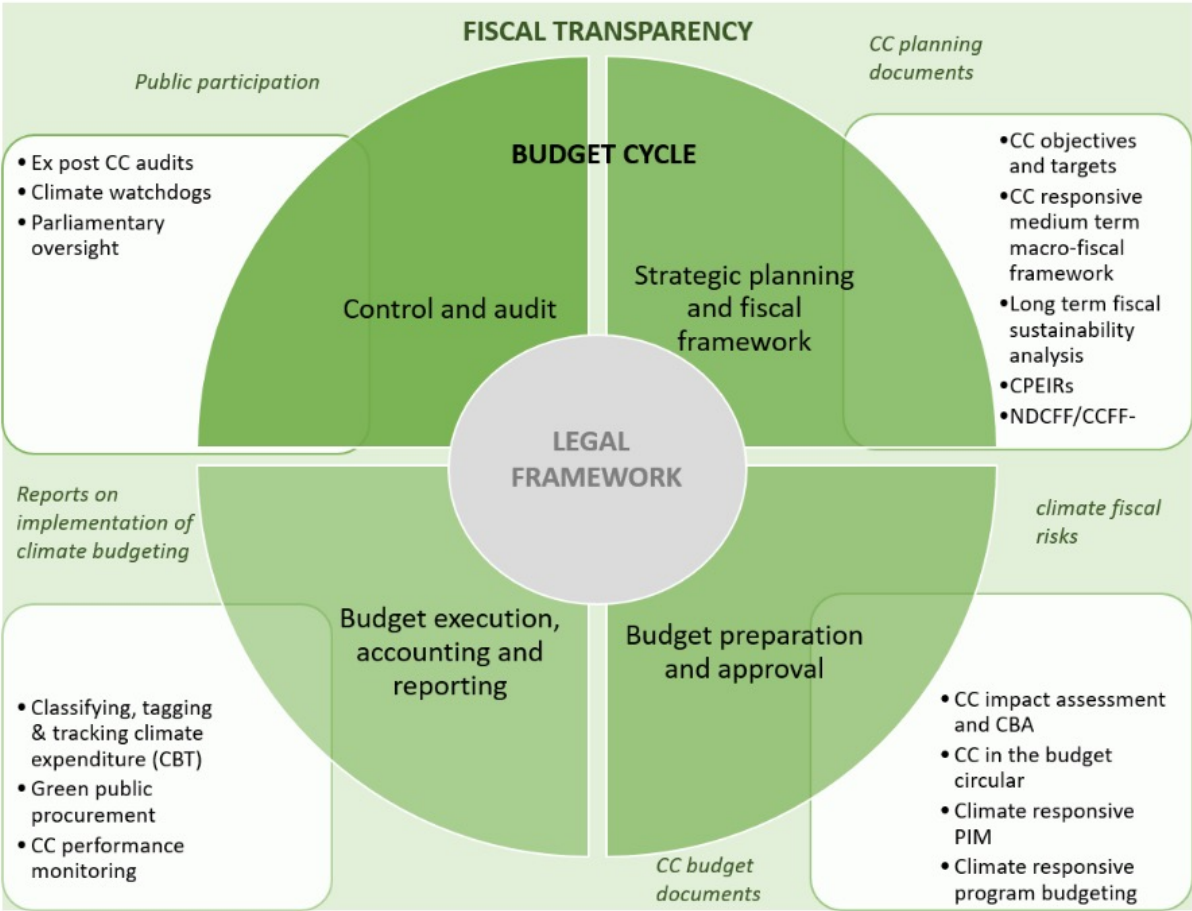
3.1. Overview of the Green PFM Framework

An adapted version of the ‘green PFM’ framework (IMF, 2021a) is used to structure and analyse the stock-take. It supports the gradual adaptation of existing PFM practices to make them climate sensitive. As shown in Figure 3.1, it is characterised by a typical four-stage budget cycle, which includes (i) strategic planning and fiscal framework; (ii) budget preparation and approval; (iii) budget execution, accounting and reporting; and, (iv) budget control and audit.

The budget cycle is anchored by a legal framework. It also looks into issues concerning fiscal transparency. The focus of the review is on budgeting and expenditure, and less on revenue mobilization. Thus, our analysis is limited to the climate change entry points along the central government budget cycle.

Please note that the below diagram was already featured in the executive summary above but is being included here again for deeper reflection and analysis.

Figure 3.1: Green PFM analytical framework revisited



Source: (IMF, 2021a).

Notes: CC is Climate Change; CPEIRs are Climate Public Expenditure and Institutional Reviews; NDCFF are NDC Financing Frameworks; CCFF are Climate Change Financing Frameworks; CBA is Cost Benefit Analysis; PIM is Public Investment Management; CBT is Climate Budget Tagging.

Lessons associated with each stage of the budget cycle are derived, based on the experiences countries have had with integrating climate change into their PFM systems identified in the stock-take. This is followed by recommendations for each stage of the budget cycle on practical steps that can be taken to strengthen climate responsive budgeting.

3.2. Methodology

The global climate public finance review was guided by a set of key questions associated with the different stages of the budget cycle based on the 'green PFM' analytical framework. The key questions are provided in *Appendix E*.

Secondary data was collected through a desk review, which provided a comprehensive stock-take on the tools, methodologies and approaches used to integrate climate change into PFM systems. Data sources include reports, government documents and reports (e.g., CPEIRs, CCFFs), journal articles, stock-take reports, conference proceedings, etc.

Given the fast pace of PFM reforms, some of the information obtained during the desk review may be outdated. However, we tried to overcome this limitation by complementing and validating the stock-take through regional consultations.

A series of virtual regional consultations were held for Africa, Asia-Pacific, Europe and CIS countries, Latin America and the Caribbean. These were attended by government officials including Ministries of Finance, UNDP officials working on climate change or the SDGs, and climate finance practitioners. Consultations were also held with development partners including the EU, IMF, OECD, World Bank, SIDA, FCDO, and UNDP. In total, over 135 people were part of the consultation process.

The objectives of the consultations were to:

- i. validate the stock-take developed using the green PFM analytical framework.**
- ii. discuss the impact of climate budgeting reforms on budgets.**
- iii. shed light on the more nuanced institutionalization challenges such as attitudes, capacity constraints, political will, etc.**
- iv. gain insights which could be used to develop prudent and practical recommendations.**

The findings from the consultation process have informed this review. The full report which summarises the consultation events is available on request.

4.

Global Stock-Take and Review

The origins of climate budgeting can be traced back to the Organisation of Economic Cooperation and Development's (OECD) decision to introduce climate change markers¹³ in 1998 as part of its overall effort to monitor and compare official development assistance of its member states. Work on making national budgets sensitive to climate change began with five CPEIRs in Asia-Pacific, managed by the UNDP. These were conducted in the early 2000s in Nepal, Bangladesh, Thailand, Cambodia, and Samoa.

Over the next five years, CPEIRs spread across much of Asia, with countries in Africa and Latin America following soon afterwards (UNDP, 2015a). Most countries started with a CPEIR and then progressed to picking up further elements of climate budgeting in more detail. The preference for more detailed work varied by country, with countries often selecting several priorities. For example, some countries are focused on sub-national level finance (Smoke & Cook, 2022), whilst others on financing frameworks (ACT, 2016; UNDP, 2017), and then some on program appraisal, with others on fundraising.

In the last 5 years, climate budget tagging (CBT) has become relatively popular, although its application remains limited. It is pursued either as a next step following a CPEIR, or as the first step towards climate budgeting (UNDP, undated; World Bank, 2021a).

Most of this work on reviews and the design of reforms has involved new and one-off commitments of expertise and funds and, as such, has usually been done by a mix of national and international experts, usually funded by international partners. Nevertheless, the work requires strong government leadership on decisions about priorities and reforms. Many of the review and design studies have been published as official government documents.

There are now many guides about the various aspects of climate budgeting, and most development agencies have produced a guide on at least one aspect, as listed in *Appendix F*. There are some variations in the content of these guides, including, notably, on the classification of adaptation expenditure. However, the guides are increasingly referring to the same options.

Pertinently, in the last few years, there has been increasing interest in formalising this consensus. This is being led by the Standing Committee on Finance of the UNFCCC, which has issued invitations to submit papers on climate expenditure classification. Given all the preparatory work on climate budgeting over the last decade, there is now enough country experience for this consensus to emerge, which will make it possible to monitor and compare trends in ways that can have a greater influence on national and international debate over climate policy¹⁴.

This chapter provides a stock-take of the approaches, tools and methods used to integrate climate change into PFM systems, covering all four stages of the budget cycle. Regional groupings include Africa, Asia-Pacific, Europe and CIS, and Latin America and Caribbean. Each sub-section provides an overview of the lessons learnt based on country experiences.

13 The OECD Development Assistance Committee (DAC) Rio markers on biodiversity, climate change mitigation and desertification were introduced in 1998, with a fourth marker on climate change adaptation being applied to 2010 flows onwards.

14 The initiative to develop a New Collective Quantified Goal (NCQG) on climate finance, to replace the Copenhagen commitment of USD 100 billion per year, will help to give focus and ambition to achieving this consensus, consistent with the urgency that was evident at the COP26 in Glasgow.

4.1. Stage 1: Strategic Planning and Fiscal Framework

Climate change should be integrated into strategic planning as it underpins the budget process, setting the priority policies and overall fiscal constraint for the government (IMF, 2021a). This section provides an overview of the experience countries have had with integrating climate change into their legal and policy frameworks, macro-fiscal frameworks, and climate risk management strategies.

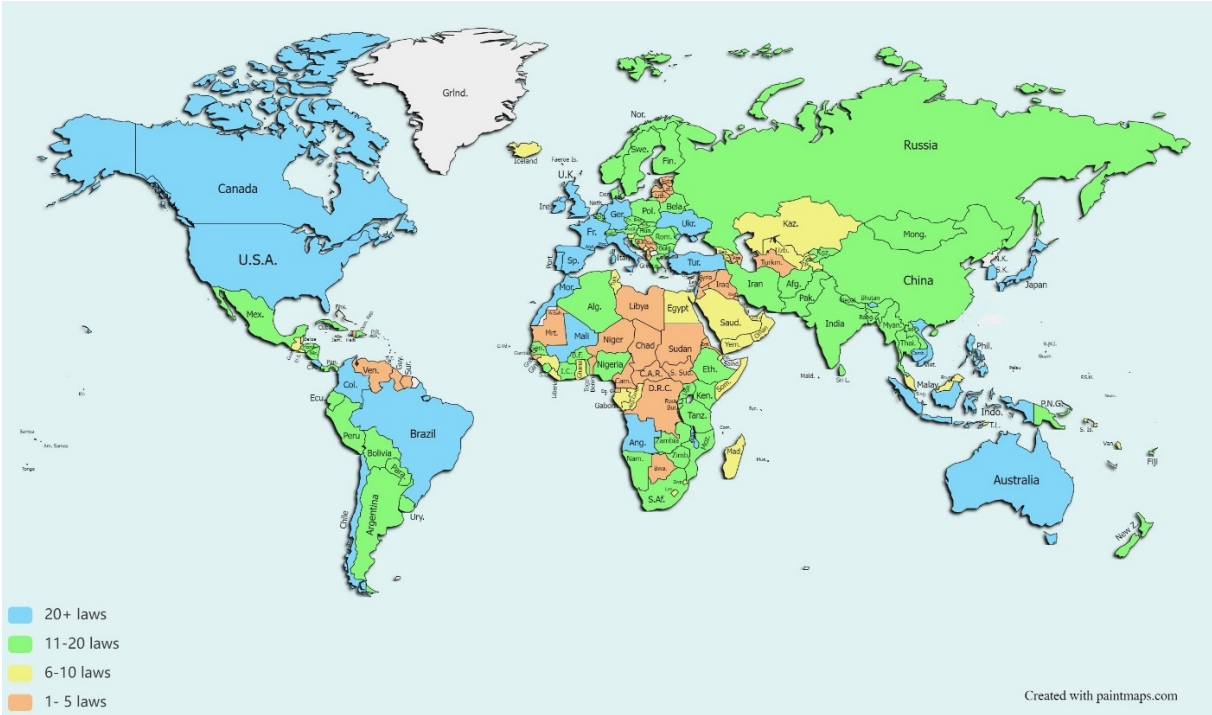
4.1.1. Legal and Policy Framework

A large number of countries now have some climate strategies or policies in place and most have some climate change legislation, although these may not be directly related to PFM. At the start of 2022¹⁵, there were 2,507 climate related laws and policies¹⁶ (Grantham Research Institute on Climate Change and the Environment, 2022). This is a significant increase from just 60 climate related laws in 1997 (Grantham Research Institute on Climate Change and the Environment, 2017).

Successful action against climate change is greatly enhanced by having a legal basis. Countries vary in the amount of laws and policies they have introduced, which range from 1 in countries such as Sudan and Iraq to 55 in Spain, as shown in Figure 4.1 (Grantham Research Institute on Climate Change and the Environment, 2022).

It is worth noting that the number of laws and policies introduced in each country is not an indication of the effectiveness of the country to address climate change. This is rather determined by the scope of the laws and policies in a country, and the ability to implement them (Eskander, Fankhauser, & Setzer, 2020).

Figure 4.1: Climate change legislation, number of laws and policies at the start of 2022



Source: data from (Grantham Research Institute on Climate Change and the Environment, 2022)

15 Data as of 6 January 2022.
 16 Broad definition of climate and climate-related laws is applied which reflects the relevance of climate policy in a wide range of areas, including energy, transport, land use and climate resilience. We refer to laws and policies as all climate relate legislative acts, executive orders and significant policies (Grantham Research Institute on Climate Change and the Environment, 2017).

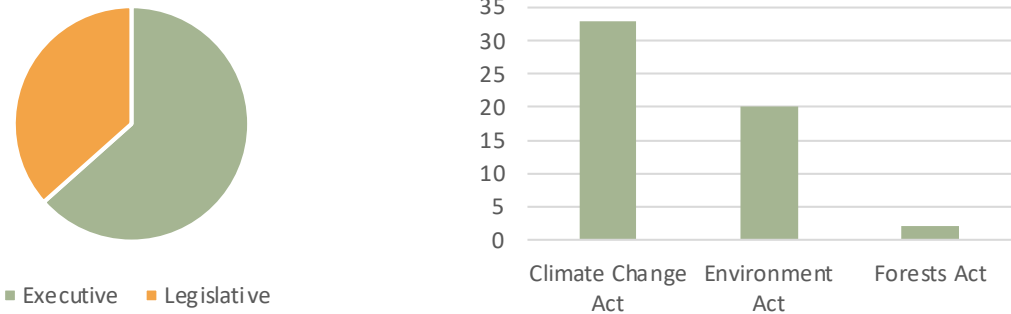
Of the laws in place, the majority, 63.4%, are government policies or executive orders, while 36.58% are legislative acts. The ratio may reflect the early phase in climate policy development as polices are yet to mature into formal legislation, meaning that legislative capacity is still developing (Grantham Research Institute on Climate Change and the Environment, 2017). This may also reflect the possibility that multiple orders are required to implement a single legal act. Unsurprisingly, for least developed countries (LDCs) legislative acts accounted for just 21.7% of total laws and policies which is below the global average of 35.8%.

Of the number of parties to the UNFCCC, 194 have submitted their first NDCs or INDCs, while 13 have submitted their second NDCs (UNFCCC, 2021b). In regard to environmental laws, 33 countries have a Climate Change Act, while a further 20 have an Environment Act, and 2 have a Forests Act that make reference to climate change. A climate change policy, strategy or plan is in place by 143 countries.

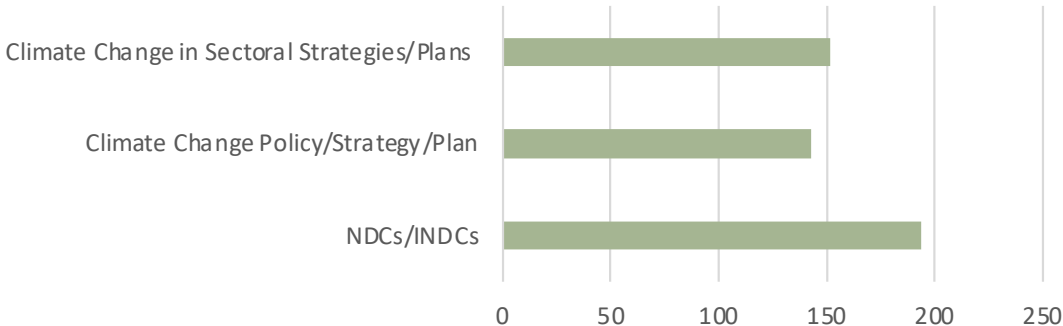
Due to the crosscutting nature of climate change, it has been integrated into other sectoral strategies and plans in priority areas such as energy, transport, industrial policy, agriculture, forestry, and land use. Climate change has been integrated into at least one sector policy, strategy or plan by 152 countries. This suggests the move to a holistic government approach by some countries, which is deemed more effective in reaching international climate change goals. Please see *Appendices A to D* for a full overview of climate change legislation and policies by region and country.

Figure 4.2: Overview of climate change policies

a. Climate change government policies (executive) vs legislative acts b. Climate Change Acts



c. Climate change in strategic planning



Box 1: The role of legislation in promoting climate budgeting in the Philippines

In the **Philippines**, the establishment of a sound legal framework for the mainstreaming of climate change into planning and budgeting processes was one of the main enabling factors which allowed the gradual implementation of climate responsive budgeting reforms for over a decade. Most notable is section 15(g) of the Climate Change Act (2009), which was amended in 2012, mandating the Department of Budget and Management to ensure the appropriate prioritization and allocation of funds to support climate change-related programs and projects.

This led the way for climate responsive budgeting reforms. With support from the World Bank, the Philippines completed their first CPEIR in 2012. Recommendations from the CPEIR led to the introduction of climate budget tagging (CBT).

In 2013, the Department of Budget and Management and the Climate Change Commission issued guidelines for tagging/tracking climate change expenditure in the national budget. In 2014, guidelines were issued for tagging/tracking climate expenditure for sub-national budgets.

The successful implementation of reforms required support and good coordination from all relevant agencies, working together with the Climate Change Commission. In every year that CBT has been implemented, lessons have been learnt and improvements made.

Capacity building has also been instrumental, with annual orientation and training.

The first evaluation of the Philippines climate change expenditure tagging tool is currently underway.

Source: (Philippines Climate Change Commission, 2022)

A joint climate change and disaster risk reduction strategy or plan has been adopted by 13 countries, as shown in Table 4.1. Of these, 9 are Pacific Island countries, which highlights their vulnerability to climate induced disasters. With the growing recognition of the interlinkages between climate change, gender equality, and other social factors, more countries have begun to take an integrated approach to gender equality and climate change.

A joint climate change and gender strategy or plan is in place by 8 countries. These are: Bangladesh, Cambodia, Cuba, Dominican Republic, Panama, Peru, Nigeria, and Zambia. There are more countries that have integrated gender considerations into their climate change strategies and plans, which is discussed further in Section 4.9.

Table 4.1: Joint climate change and disaster risk reduction (DRR) or gender strategy/plan

Climate change and DRR	
Cambodia	Climate Change Strategic Plan for Disaster Management Sector 2014-2018
Cook Islands	Joint National Action Plan for Disaster Risk Management Climate Change Adaptation (2016-2020); Climate and Disaster Compatible Development Policy 2013-2016 (Kaveinga Tapapa)
Egypt	Egypt’s National Strategy for Adaptation to Climate Change and Disaster Risk Management
Kiribati	Kiribati Joint Implementation Plans for Climate Change and Disaster Risk Management 2014-2023 and 2019-2028
Maldives	Strategic National Action Plan for Disaster Risk Reduction & Climate Change Adaptation 2010-2020
Marshall Islands	Joint National Action Plan for Climate Change Adaptation & Disaster Risk Management 2014-2018

Climate change and DRR	
Micronesia	Nationwide Integrated Disaster Risk Management and Climate Change Policy
Nauru	Framework for Climate Change Adaptation and Disaster Risk Reduction
Nepal	Priority Framework for Action: Climate Change Adaptation and Disaster Risk Management in Agriculture 2011-2020
Niue	Joint National Action Plan for Disaster Risk Management and Climate Change
Tonga	Joint National Action Plan on Climate Change Adaptation & Disaster Risk Management 2010-2015
Tuvalu	National Strategic Action Plan for Climate Change Adaptation and Disaster Risk Management 2012-2016
Vanuatu	The Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030; National Policy on Climate Change and Disaster-Induced Displacement
Climate change and gender	
Bangladesh	Bangladesh Climate Change and Gender Action Plan
Cuba	Action Plan on Gender and Climate Change (2014)
Cambodia	Gender and Climate Change Action Plan (2014-2018)
Dominican Republic	Climate Change and Gender Action Plan (PAGCC-RD)
Nigeria	National Action Plan on Gender and Climate Change for Nigeria
Panama	Climate Change and Gender Action Plan (PAGCC, 2011)
Peru	Action Plan on Gender and Climate Change (PAGCC, 2015)
Zambia	Zambia's Climate Change Gender Action Plan (CCGAP)

4.1.2. Overview of Climate Policy Review Tools and Financing Frameworks

Different policy review tools have been applied to assess the effectiveness of climate change policies. This includes the Climate Public Expenditure and Institutional Review (CPEIR), Pacific Climate Change Finance Assessment Framework (PCCFAF), the Climate Change Budget Integration Index (CCBII) and the Public Expenditure and Financial Accountability (PEFA) Climate module. These, at times, have been complemented by Climate Change Financing Frameworks (CCFFs), also referred to as Climate Fiscal Frameworks (CFFs), and NDC Financing Frameworks or strategies. Climate Public Investment Management Assessments (Climate-PIMA) have also been conducted in a dozen countries since 2021.

The CPEIR is the most commonly used diagnostic tool and builds on the World Bank's standard public expenditure review methodology. It provides a qualitative and quantitative analysis of a country's public expenditures in relation to climate change (UNDP, 2019a).

The analytical framework is based on three key pillars which includes policy analysis, institutional analysis and climate public expenditure analysis (UNDP, 2015d). It is often the starting point for mainstreaming climate change into PFM systems.

CPEIRs allow governments and civil society to see whether expenditure related to climate change is increasing. In theory, this provides evidence which can encourage governments to increase the priority given to climate change programs. In practice, CPEIRs have generally revealed that climate change expenditure has increased in absolute terms but not necessarily as a share of total expenditure. This evidence has rarely had a direct impact on expenditure prioritisation, but it has contributed to greater

awareness of the scale of climate change risks and opportunities and has raised the political priority of climate change.

The first CPEIR was conducted in Nepal in 2011 and since then, several countries in Africa (11), Asia-Pacific (12), Europe and CIS (2), Latin America and the Caribbean (6), have applied the tool as shown in Table 4.2.

Although most CPEIRs follow a standard approach and attempt to classify climate-related public expenditure, the lack of an international definition for the degree to which expenditure contributes to climate adaptation and/or mitigation means that definitions differ between countries and, therefore, caution should be made with cross-country comparisons (UNDP, 2012).

There is also wide variability in the quality of country reports and uptake of recommendations by respective governments. When combined with buy-in from the Ministry of Finance, CPEIRs often provide a roadmap for future climate budgeting reforms (CABRI et al., 2021a). However, in some countries, there has been minimal uptake of recommendations as the process has been perceived as an academic donor driven exercise (World Bank, Forthcoming).

CPEIRs are resource intensive to carry out, both in time and financial resources, and as a result are not conducted every year. As a result, they do not always provide updated information. Many countries have therefore transitioned towards routine CBT, which also supports the institutionalisation of climate responsive budgeting.

Table 4.2: Overview of climate policy review tools and climate financing frameworks

	CPEIR	PCCFAF	CCFF/ CCF	PEFA-C	CCBII	Other
Africa						
Benin	2017					
Eswatini	2021					
Ethiopia	2014 ^a			2021		
Ghana	2015; 2021					
Kenya	2016					
Mauritius						PEER 2016; TPSEE 2018
Morocco	2012					
Mozambique	2016 ^b					PEER 2012
Rwanda	2013					
Seychelles	2018 ^c					BPER 2019
Tanzania	2013					
Uganda	2013					
Asia-Pacific						
Afghanistan			2016			
Bangladesh	2011		2014; 2020 ⁱ		x	
Bhutan						PEER 2014
Cambodia	2012; annually since then		2015		x	
China	2015					
Fiji	2014					

	CPEIR	PCCFAF	CCFF/ CCF	PEFA-C	CCBII	Other
India			2015 ^j - 2016			
Indonesia	2015 ^e		2012; 2021 ⁿ		x	
Kiribati		2018				Budget review 2013
Kyrgyzstan						PPEIR
Marshall Islands		2014				
Micronesia		2018				
Nauru		2013				
Nepal	2011; 2016 ^f		2016		2015; 2017	
Pakistan	2015; 2017 ^a		2017		2015	
Palau		2017				
Papua New Guinea		2018 ^h				
Philippines	2012					
Samoa	2012			2021		
Solomon Islands		2016			x	
Thailand	2012		2022 ⁿ			
Tonga		2015			2021	
Vanuatu	2014	2017				
Vietnam	2015; 2022					
Europe/CIS						
Armenia	2020				2020	
Azerbaijan					2022 ^k	
Georgia	2022 ^l					
Latin America and Caribbean						
Chile	2016		2019			
Colombia	2018		2017			
Ecuador	2017; 2019		2020			
El Salvador	2018					
Guatemala			2018			
Honduras	2016					
Nicaragua	2015					
Peru			2022 ^m			
Total	37	9	15	2	10	7

PEER is public environment expenditure review, TPSEE is tracking of public sector environment expenditure, BPER is biodiversity public expenditure review. ^a is partial CPEIR carried out in Ethiopia, ^b the Mozambique CPEIR is pending validation by the government, ^c the CPEIR that was undertaken in 2018/19 in Seychelles under the GCCA+ project was unsuccessful due to problems with the consultants, ^e the CPEIR was at the provincial level, ^f the 2016 CPEIR was at the district level, ^g the 2015 CPEIR was updated in 2017, ^h partial use of the PCCFAF framework, ⁱ the 2015 CFF was updated in 2020, ^j the CCFF in India was termed SAPFIN and limited to the states of Bihar, Chhattisgarh and Kerala, ^k CCBII is still being developed and in draft form, ^l the CPEIR is still being developed, ^m the CCFF in Peru is still in draft form, although preliminary findings were presented at COP26, ⁿ under final review.

Box 2: Application of the CPEIR in selected countries

The CPEIR has been recognised across countries and regions as a good starting point to help identify climate budgeting entry points and provide a roadmap for future reforms. To be effective, it should be followed with sustained actions. CPEIRs should be conducted periodically to assess the evolution of climate policy, expenditure, and institutional mandates.

Nepal's 2011 CPEIR provided a synoptic view of the flow of climate finance and the role of various institutions, including the Ministry of Finance. The CPEIR was the starting point for proceeding work on climate responsive budgeting. This included the development of the climate change financing framework (CCFF) and the introduction of CBT. The CPEIR helped to increase awareness of climate mainstreaming, including at the sub-national level. It also influenced budget management in Nepal, influencing agencies to work with parliament and civil society.

Ghana is one of the few countries to have completed two CPEIRs – the first in 2015 and the second in 2021. The first CPEIR helped to identify some of the institutional challenges, including how climate resources were allocated. Recommendations from the CPEIR led to the realignment of the climate institutional set up and raised the profile of climate relevant programs which saw an improvement in funding. The second CPEIR in 2021 highlighted issues around policy consistency and revealed there was very little synergy between institutions, resulting in the duplication of mandates and functions. It also reviewed the relevance of the tags which were applied in 2015 and identified new areas of tagging. Additional challenges were also highlighted, for example off budget inflows, which are currently not captured.

Armenia identified the CPEIR as the starting point for climate budgeting. However, one of the lessons from their experience was, before climate expenditure can be effectively identified in a CPEIR type of exercise, there is need to have a unified and comprehensive climate change mitigation and adaptation policy or strategy at the national level that clearly presents the objectives of climate change policy, expected outcome(s) and main directions of policy interventions. At the same time, the CPEIR can be used to improve climate change policy. Armenia also highlighted the role of the CPEIR in identifying their NDC implementation financing gap.

Ecuador conducted two CPEIRs. The first in 2015 was limited to selected sectors, while the second in 2019 was more comprehensive as it covered all sectors within the national climate change strategy and considered budget allocations for each. The methodology was tailored to meet the country's needs. It has helped identify sectors that require more finance (particularly on adaptation) and allowed for better transparency on climate public expenditure.

Source: Regional consultation dialogues for Africa, Asia-Pacific, Europe/CIS and Latin America and Caribbean

The PCCFAF was developed to meet the unique challenges faced by Pacific Island countries. It extends the CPEIR methodology to include a more comprehensive assessment of the available sources of financing and the in-country capacity required to access and manage related resources. An analysis of both climate change and disaster risk is applied, for within the Pacific island country context the two are 'inextricably linked' (Pacific Community, 2019). The framework was later extended to include gender and social inclusion (Pacific Community, 2019). To date, at least 9 Pacific Island countries have applied the PCCFAF.

The Climate Change Budget Integration Index (CCBII) is an innovative tool that helps to measure the level of climate change integration into national PFM systems. There is also the CCBII++ which includes gender and social inclusion. Periodic use of CCBII and CCBII++ can help countries to track and compare progress over time. It has been applied in Armenia, Bangladesh, Cambodia, Nepal, Pakistan, Indonesia, Thailand, and Tonga, (CFADE, 2022). Azerbaijan is in the process of completing the CCBII.

In 2020, PEFA introduced a new climate module which assesses the extent to which national PFM systems are prepared to support and foster the implementation of climate change policies. This covers an assessment of how the laws, regulations, institutions, systems, procedures, and processes contribute to the implementation of climate change activities throughout the budget cycle (PEFA, 2020). The module was successfully piloted in Samoa (PEFA, 2021), with further piloting currently been done in Ethiopia

(CABRI et al., 2021a). As more countries apply the PEFA climate module, it offers an opportunity for more comprehensive data on the responsiveness of PFM systems to climate change actions.

Some countries in Asia-Pacific (8) and Latin-America and Caribbean (5) have also made use of Climate Change Financing Frameworks (CCFF) or Climate Fiscal Frameworks (CFF). These complement the CPEIR by assessing future financing needs and outlining the expected role of domestic and international public and private finance in meeting those needs (UNDP, 2012).

Box 3: Overview of Climate Change Financing Frameworks and how it has been applied across countries

- The first full CCFF in 2015 was conducted in Cambodia, which estimated the financing needs of the climate change policy and the proposed potential sources of finance to meet the needs.
- Indonesia had prepared an earlier financing framework in 2012, focusing specifically on mitigation, and a second in 2021 which covered all green expenditure.
- The Action on Climate Today program in South Asia supported similar activities in Afghanistan and four Indian states (Assam, Bihar, Chhattisgarh and Kerala (UNDP, 2017).
- CCFFs have also been done in Nepal and Bangladesh, but these have been limited to reviews of institutional responsibilities and some financing recommendations, and have not included detailed estimates of needs and financing scenarios.
- In Africa, the Africa Public Expenditure on Adaptation study (UNDP, forthcoming-a) conducted a desk-based CCFF across all African countries, identifying the expenditure gap and potential funding scenarios.
- In Latin-America and Caribbean, CCFFs have been used in Chile, Colombia, Ecuador, Guatemala, and Peru. The CFF takes a whole of government approach to strategically structure the mobilization, management and targeting of climate finance (UNDP, 2018b).

These experiences with CCFF and CFFs are being superseded by similar exercises which base financing needs on work to assess the costs required to implement NDCs and long-term strategies (LTS)¹⁷.

In many countries, this 'costing' work is unconstrained and does not include detailed financing scenarios. However, some countries (e.g., Indonesia's LTS, included in the 2021 CCFF) have begun to address financing scenarios by identifying what part of the NDC/LTS target can be achieved with domestic resources, with the remaining part depending on international finance. This applies particularly to LTS, where targets relating to greenhouse gas reductions and unit costs of that reduction are easier to determine.

Sources: UNDP (2017), UNDP (2018b) and author's experience.

The new Climate-PIMA framework can help countries to assess the integration of climate change policies into their public investment management processes. The framework applies across the full budget cycle, from plans to appraisal and reporting. Key findings from piloting Climate-PIMA are outlined in Box 4.

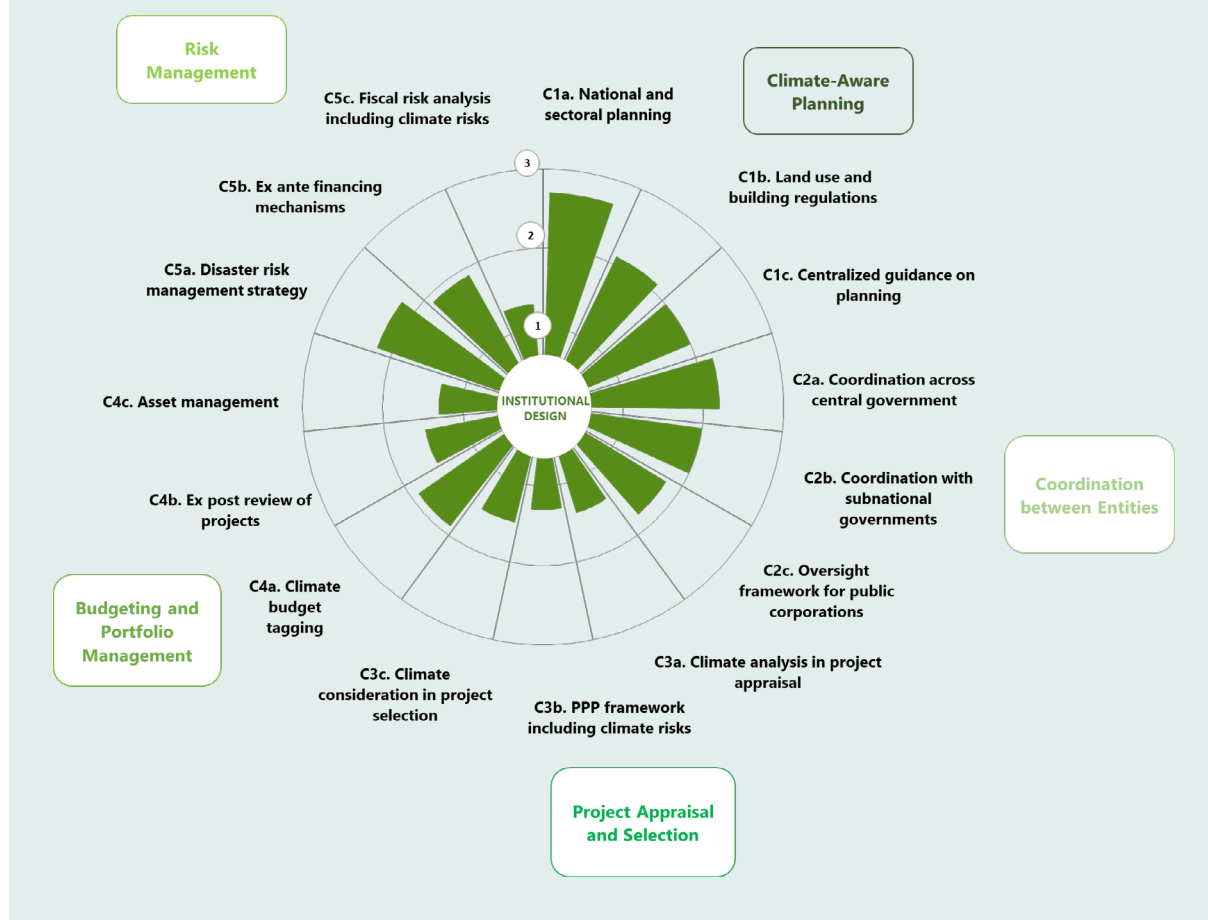
¹⁷ The Paris Agreement invites countries to communicate long-term, low-GHG emissions development strategies. An LTS typically contains several elements, including a long-term vision and goals related to sustainable development, mitigation and adaptation and sectoral pathways for achieving the strategy's objectives, including ensuring a just transition.

Box 4: Climate-PIMA

The Climate-PIMA module was developed to assess how a country's public investment management system integrates climate change policies. It has been piloted¹⁸ in 11 countries, i.e., Anguilla, Bangladesh, Belize, Croatia, Gambia, Indonesia, Madagascar, Mauritius, Nepal, Netherlands. and the UK. Key findings showed that:

- Most countries had national and sectoral sector public investment plans that were consistent with national climate goals on climate mitigation and adaptation.
- Across the public sector, coordination of climate-related public investment had a medium score. Coordination across the central government was better, compared to coordination with sub-national governments and oversight of public corporations.
- Appraisal and selection received the lowest score. This mirrors the low scores for appraisal and selection in the regular PIMA, which is in line with the general observation that the Climate-PIMA scores were highly correlated with the regular PIMA scores. Clear national methodologies and guidance on how to consistently incorporate climate-related analyses across project appraisals were mostly absent. This may be due to the added complexity of including climate change in related processes.
- Incorporation of climate-related risks in the reporting and management of public infrastructure assets is at an early stage in many countries.

Climate-PIMA Scores by Dimension (*appears next page*):



Source: (IMF, 2021b)

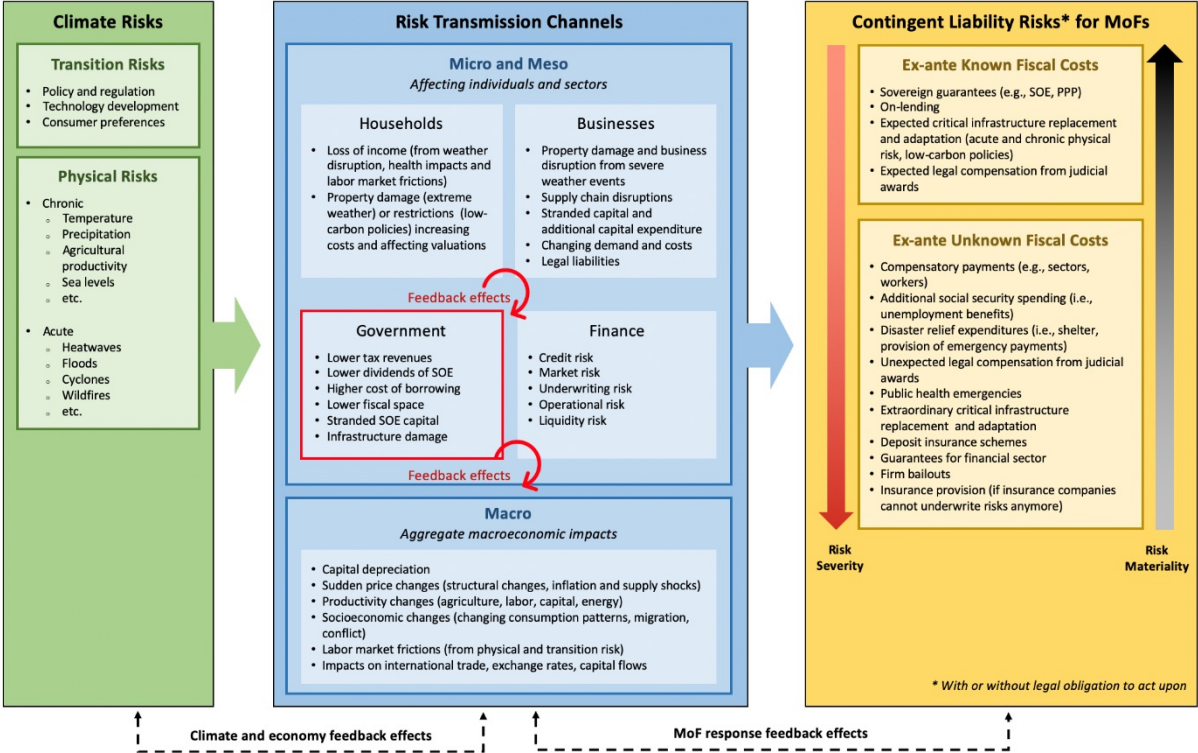
¹⁸ The piloting is limited to desk review for select countries.

4.1.3. Climate Change in Macro-Fiscal Frameworks

Climate change poses significant physical and transitional risks. Physical risks are related to the increased frequency and intensity of extreme weather events and chronic changes in the climate which negatively affect productive capacity and global supply chains (UNEP, 2019). Transitional risks are associated with climate policies, technology disruptions and changes in consumption patterns as countries transition on to a low-carbon path. Climate risks can affect different sectors of the economy i.e. households, businesses, government, and the financial sector, as well as amplify macroeconomic risks (Dunz & Power, 2021). The risk transmission channels are outlined in Figure 4.3.

These could negatively affect government finances through lower revenue, lower dividends for state owned enterprises (SOEs), bailout costs, higher debt servicing costs and contingent liabilities with ex-ante known and unknown fiscal costs¹⁹. Disaster-related contingent liabilities can be significant as governments are responsible for providing financing for implicit and explicit commitments made prior to a disaster occurring (Gamper, Signer, Alton, & Petrie, 2017). One study (Bova, Ruiz-Arranz, Toscani, & Ture, 2016) provides evidence for 80 advanced and emerging economies that shows the average cost of a contingent liability realisation due a natural disaster is 1.6% of GDP, with a maximum fiscal cost of 6% of GDP²⁰.

Figure 4.3: Climate related risk transmission channels for ministries of finance



Source: (Dunz & Power, 2021) p. 8

19 Contingent liabilities can be significant for governments who act as lenders of last resort for households, business and the financial sector in extreme circumstances

20 The costs associated in general for contingent liability realisation was 6% of GDP, although the costs could range to 40% of GDP for major financial sector bailouts (Bova et al., 2016).

Macroeconomic and financial analyses of climate risks can help governments plan and better manage their response to climate change. However, the forward-looking nature of climate risk assessments involve a myriad of assumptions, baselines, and modelling choices, resulting in a wide variety of methodologies and tools (UNEP, 2021a).

Combined physical and transitional risk methodologies, which provide a more complete picture of climate-related risks are emerging. The integration of the two approaches is complex and highly dependent on location and sector specific variables²¹.

This work is undertaken almost entirely by research projects in universities or by experts recruited by development institutions. It provides very important background evidence about the scale of climate change risks and opportunities.

In theory, climate risks should be integrated into macroeconomic forecasts, sustainability analysis, vulnerability analysis and macro-fiscal scenarios (UNDP, 2021a), but in practice it is mostly too complex to feature in the macroeconomic models used in most ministries of finance. In practice, the influence of this academic analysis on budgets mostly happens indirectly, through its impact on policies. This, in turn, should inform the fiscal strategy and medium term budget framework (IMF, 2021a).

Very few countries so far have integrated climate change physical risks into their macroeconomic modelling and forecasting analysis. Leading in this area of work are advanced economies, namely Austria, Denmark, Ireland, Netherlands, Norway, Switzerland, UK, Ukraine, and USA. The experience of selected countries in Europe is outlined in Box 5.

In Asia-Pacific, Cambodia has developed the practical spreadsheet-based Climate Economic Growth Impact Model (CEGIM), which evaluates the impact of climate change on economic growth up to 2050. It also identifies priority interventions to minimise related climate impacts (Cambodia Ministry of Economy and Finance, 2019). Bangladesh is in the process of integrating climate change into their existing macroeconomic modelling framework.

In Africa, Ethiopia and Uganda have included a qualitative discussion of climate risks in the fiscal risk assessment or statement²². Ethiopia is working towards developing more technical methods which quantify climate risks (CABRI, 2021a).

In Latin America and Caribbean, since 2017 Colombia has included an analysis of climate change and its effects on macroeconomic and fiscal programming in their medium term fiscal framework (MINHACIENDA, 2017). The Asian Development Bank used CGE models to estimate the economic impact of climate change in both Southeast and South Asia and these two studies have been particularly influential in informing policies (ADB, 2009; Ahmed & Suphachalasai, 2014).

21 Physical climate risks are highly dependent on geographical location and changes in temperature. Transition risk is sector specific, relating to politically determined mitigation targets (UNEP, 2021a).

22 Fiscal risks statements are reports prepared by the government at the time of budget preparation to inform the legislature and civil society about the most relevant fiscal risks and how the government plans to address them (IMF, 2016).

Box 5: Climate change in macroeconomic modelling in selected European countries

A number of European countries model and assess the impact of climate change on the economy and the impact of economic and fiscal measures on climate change outcomes. Most often, respective models were developed in collaboration with research institutes or academia.

Denmark: A climate-economic model is being developed, GreenREFORM, which is an analytical tool that aims to provide an integrated assessment of the environmental and climate effects of economic policies, as well as economic and fiscal impact of environmental and climate policies (OECD, 2021c). The tool is being developed in collaboration with the Danish Research Institute for Economic Analysis and Modelling, the University of Copenhagen, and Aarhus University. It could become a useful tool for assessing the climate effects of a wide range of policies, from dedicated climate measures to recovery plans and long-term strategies. It could also be used to assess if economic development meets the political goals within environment and climate policy areas (Denmark Ministry of Finance, 2021).

Ireland: The Economic and Social Research Institute developed a dynamic computable general equilibrium (CGE) model for the Irish economy, called I3E. The Institute applied this model to investigate the economic effects of increasing the Irish carbon tax (OECD, 2021b). To better align public investment decisions in all sectors with climate policy objectives, the 2019 Public Spending Code revised the shadow costs of greenhouse gas and other pollutant emissions to be used in public investment appraisal (OECD, 2021d).

Norway: A technical calculation committee for climate is mandated by the Climate Act to propose methods for calculating the climate effect of the state budget, including methods for assessing the effects on greenhouse gas emissions from changes in the state budget's revenue and expenditure, as well as to assess the emission effect and socio-economic cost of various types of emission reductions (Norway Ministry of Climate and Environment, 2022).

UK: The Climate Change Act requires the government to report at least every 5 years on the risks to the UK of climate change, and publish an assessment setting out how these will be addressed (UK Government, 2022). The first climate change risk assessment was published in 2012.

EU: Several models are available and used for modelling, among others, CO₂ emissions, emission reduction and removals, and impacts on energy, transport, industry, agriculture, forestry, land use, atmospheric dispersion, health, ecosystems (acidification, eutrophication), macro-economy with multiple sectors, employment, and social welfare (European Commission, 2022).

Central banks could support ministries of finance with modelling support given their experience with systemic financial risk assessments and stress-testing exercises (Dunz & Power, 2021). Climate change poses significant risks to the stability of financial systems and a number of central banks have started to integrate climate change into stress tests, as seen in England, the Netherlands, France, and by the European Central Bank. The Monetary Authority of Singapore plans to include climate risks into its annual financial stress test by 2022 (UNEP, 2021a).

4.1.4. Climate Risk Management Strategies and Instruments

Natural disasters can have large financial costs for governments who play a central role in emergency relief, recovery, and reconstruction. This is particularly the case in countries where private insurance markets are not well developed (Gamper et al., 2017). Risk management strategies can help government to address climate related fiscal risks. These include enhancing disaster preparedness, creating fiscal buffers, ensuring budget flexibilities, and risk transfer instruments (IMF, 2021a).

A risk layering²³ approach has been recommended for small countries, as the latter face systemic risk as large areas of territory may be affected by a natural disaster. This is particularly the case for small Caribbean states and small Pacific Island states, which on average face annual costs of 3.1% and 2% of GDP respectively. These costs are significantly higher than the rest of the world, which faces an average annual costs of 0.3% of GDP (Cebotari & Youssef, 2020). Public and private insurance can increase financial resilience and several countries, particularly small developing countries, have transferred risk to regional insurance pools.

Regional insurance pools provide governments with parametric insurance coverage at a significantly lower cost than if they were to purchase it individually from the financial markets, facilitating access of smaller states to catastrophe insurance and re-insurance markets by increasing the size of the aggregate portfolio, offering country-specific risk models, and reducing administrative costs. There are currently four regional pools, i.e., the Caribbean Catastrophe Risk Insurance Facility (CCRIF), the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), the African Risk Capacity (ARC), and the Southeast Asia Disaster Risk Insurance Facility (SEADRIF). The list of participating countries is shown in Table 4.3.

Catastrophe bonds is another risk transfer tool for sovereigns, which taps into capital markets. Take-up of this tool has been limited in developing countries due to the sophisticated nature and high setup costs (Cebotari & Youssef, 2020). Mexico, Turkey, Philippines and Jamaica have issued individual catastrophe bonds and the World Bank issued joint sovereign catastrophe bond for CCRIF and the Pacific Alliance members, which include Chile, Colombia, Mexico, and Peru (World Bank & SECO, 2021).

Table 4.3: Sovereign risk insurance

African Risk Capacity (ARC) ^a	Caribbean Catastrophic Risk Insurance Facility (CCRIF) ^b	Pacific Catastrophe Risk Insurance Company (PCRIC) ^c	Southeast Asia Disaster Risk Insurance Facility (SEADRIF) ^d
Burkina Faso	Anguilla	Cook Islands	Lao PDR
Chad*	Antigua and Barbuda	Fiji*	
Côte d'Ivoire	Bahamas	Marshall Islands*	
Gambia	Barbados	Samoa	
Kenya*	Belize	Tonga	
Madagascar	British Virgin Islands	Vanuatu*	
Malawi	Cayman Islands		
Mali	Dominica		
Mauritania	Grenada		
Niger	Guatemala		
Senegal	Haiti		
Sudan	Jamaica		
Togo	Montserrat		

23 Risk layering is the cost effective combination of different instruments to protect against hazard events of different frequency and severity (World Bank, 2014a). It brings together pre and post disaster financing instrument that meet the evolving needs for funds ranging from emergency relief to reconstruction. With this approach, fiscal buffers which have been built over time through savings are used for emergency funding for smaller and more frequent disasters. Government could also use post-disaster financing instruments such as budget reallocations, borrowing, taxation, and international aid (World Bank, 2019). These, however, may not be available immediately compared to pre-arranged instruments.

African Risk Capacity (ARC) ^a	Caribbean Catastrophic Risk Insurance Facility (CCRIF) ^b	Pacific Catastrophe Risk Insurance Company (PCRIC) ^c	Southeast Asia Disaster Risk Insurance Facility (SEADRIF) ^d
Zambia	Nicaragua		
Zimbabwe	Panama		
	Sint Maarten		
	St. Vincent & Grenadines		
	Trinidad and Tobago		
	Turks and Caicos Islands		

Note: Most recent information as of January 2022 is used. ^a refers to the ARC risk pool for VIII 2021/2022. ARC countries included have at least one insurance plan for either drought, flood and tropical cyclone

^b refers to CCRIF's coverage for the 2020/2021 period. CCRIF countries included have at least one insurance plan for either tropical cyclones, earthquakes, excess rainfall, fisheries and electric utilities.

^c PCRIC countries included have at least one insurance plan for either tropical cyclones, earthquakes and tsunami

^d SEADRIF at present has one product which covers flood risks.

* are countries which held a policy at some point but do not currently have one.

Sources: (African Risk Capacity, 2022; Caribbean Catastrophic Risk Insurance Facility, 2021; Pacific Catastrophe Risk Insurance Company, 2022; Southeast Asia Disaster Risk Insurance Facility, 2022)

4.1.5. Lessons Learnt

Strategic planning is the most commonly pursued entry point for climate responsive budgeting. This generally starts with strategies and policies, and then moves to legislation. A large number of countries now have some climate strategies or policies, and most have some climate change legislation in place. However, the coverage and effectiveness vary greatly across countries. One of the key enabling conditions for climate responsive budgeting reforms is a sound policy and legal framework that supports the integration of climate change into planning and budgeting processes.

Most countries also include references to climate change in national development plans (NDPs). This has often happened in several stages, starting simply with a short cross-cutting section which raises awareness. A subsequent update of the NDP may then incorporate climate change into sectoral chapters, demonstrating the way in which sectoral policies and programs contribute to adaptation and mitigation.

Due to its cross-cutting nature, it is important that a whole-of-government approach is taken when mainstreaming climate change into planning and budgeting processes. Many public sector policies have a direct or indirect climate impact. Climate change should, therefore, be integrated into national development plans and sector policies and plans.

There are still gaps in climate macro-economic planning, even in countries with a strong tradition of planning. Only about a dozen countries globally have integrated climate change into the macroeconomic modelling frameworks or consider climate change in the fiscal risk assessment or statement.

Modelling climate risks is complex due to the challenges in framing impact pathways, the number of variables involved, and the high level of uncertainty associated with climate change, as well as the country and context specific nature of climate risks and impacts. Building capacity in the area is important, as it will help countries to quantify and appropriately manage related risks.

Central banks can support ministries of finance in this area, given their experience with economic modelling and forecasting. Ministries of finance will need to complement their own modelling with the evidence from modelling by research institutions and academia, as shown with the experience of Europe, where the most progress to date has been made.

Climate policy, expenditure and institutional reviews (e.g., CPEIRs) can help to raise awareness about expenditure patterns, which may influence budgets, usually indirectly through policy. The reviews also identify key climate responsive budgeting reforms. However, the uptake of recommendations for climate reforms requires ownership and leadership from the government, particularly the ministry of finance.

The influence of climate responsive budgeting reforms is still largely indirect, by raising awareness about the importance of climate change expenditure, but not leading explicitly to changes in prioritisation. More political awareness and support will be required to move the agenda forward. In addition, policy review should take place periodically to help governments keep track of the evolving climate institutional and financing landscape.

There has been some early experience with Climate Change Financing Frameworks (CCFFs), and this could be a useful instrument for countries to use. There are two main approaches to developing the CCFF. The first provides a menu of reforms required for the integration of climate change into development planning and budgeting (e.g., Nepal and Pakistan). The second approach provides the cost/needs estimation, along with the expected sources of finance, in addition to the reform roadmap (e.g., Indonesia's mitigation financing framework in 2012 and 2021).

With the increased status of NDCs and LTSs, many CCFFs are now financing frameworks for NDCs and LTSs. One common and useful practice is to define expected achievements with and without foreign assistance, which illustrates the scale of what developing countries can achieve on their own and how much more they can achieve with international support. This is common with LTSs, in particular, because achievements can be clearly measured in terms of greenhouse gas emission reductions.

Some countries have taken up risk management strategies, which may consist of a range of climate and disaster risk management instruments. Some of these are risk retention tools that allow governments to effectively respond to a natural disaster, while others are risk transfer instruments such as sovereign insurance and catastrophe bonds. Risk transfer tools have been particularly important for small developing countries who face systemic climate risks and lack the financial resources to effectively respond to major hazard events.

4.2. Stage 2: Budget Preparation and Approval

The second stage of the budget cycle is budget preparation and approval. This is an important stage as it ensures that climate change is integrated into public expenditure through the national budget. This can be supported through clear guidelines and instructions for spending ministries on preparing climate sensitive budgets and programs. It is also important that public investment management is climate sensitive, by incorporating climate considerations across all stages of the public investment management cycle. Budget approval by the legislative body is discussed under stage 4 in section 4.4.

4.2.1. Climate Change in the Budget Circular/Guidelines

The budget circular are guidelines issued, usually by the ministry of finance, to spending ministries and agencies on how they should prepare their respective budget submissions. Integrating climate change into the budget circular sends a clear message that it is a policy priority for the government (IMF, 2021a).

Experience from mainstreaming other cross sectoral priorities, such as gender outlined in Box 6, shows that inclusion into the budget circular can facilitate integration into the budget process and lead to increased allocations (World Bank, 2021a). Ministries of finance can adjust their regular budget circular to include climate change or issue an additional circular. It is usually seen as a 'quick-win' by governments, as it can be implemented in a relatively short period of time with limited resources compared to other reforms²⁴.

Box 6: Gender in budget circulars and gender budget statements

A review commissioned by UN Women (2015) looked at gender sensitive budget call circulars and gender budget statements in 17 countries, mainly in the Asia-Pacific region and a couple of African countries. The findings showed that although country experiences varied greatly in the extent to which gender was integrated into related budget documents, there were some notable successes with intermediate outcomes:

- ✓ It created greater awareness of gender equality and how it might be reflected in policies, budgets, and implementation amongst a wide range of actors, including government officials responsible for programs and/or budgets, parliamentarians, and civil society actors.
- ✓ Led to improvement in the availability of information. This is partly due to existing information being made available within government and beyond, and partly because the exercise resulted in the generation of new data and collation.

However, it should also be noted that the evidence is limited with regards to the impact this had on allocations and expenditure. It was also not possible to establish if gender-sensitive budget circulars and gender budget statements made a difference to the lives of women and men, girls and boys.

Source: (Budlender, 2015)

In Asia-Pacific, at least 7 countries have integrated climate change into the budget circular. These are Bangladesh, Cambodia, Indonesia, Nepal, Pakistan, Philippines, and Thailand.

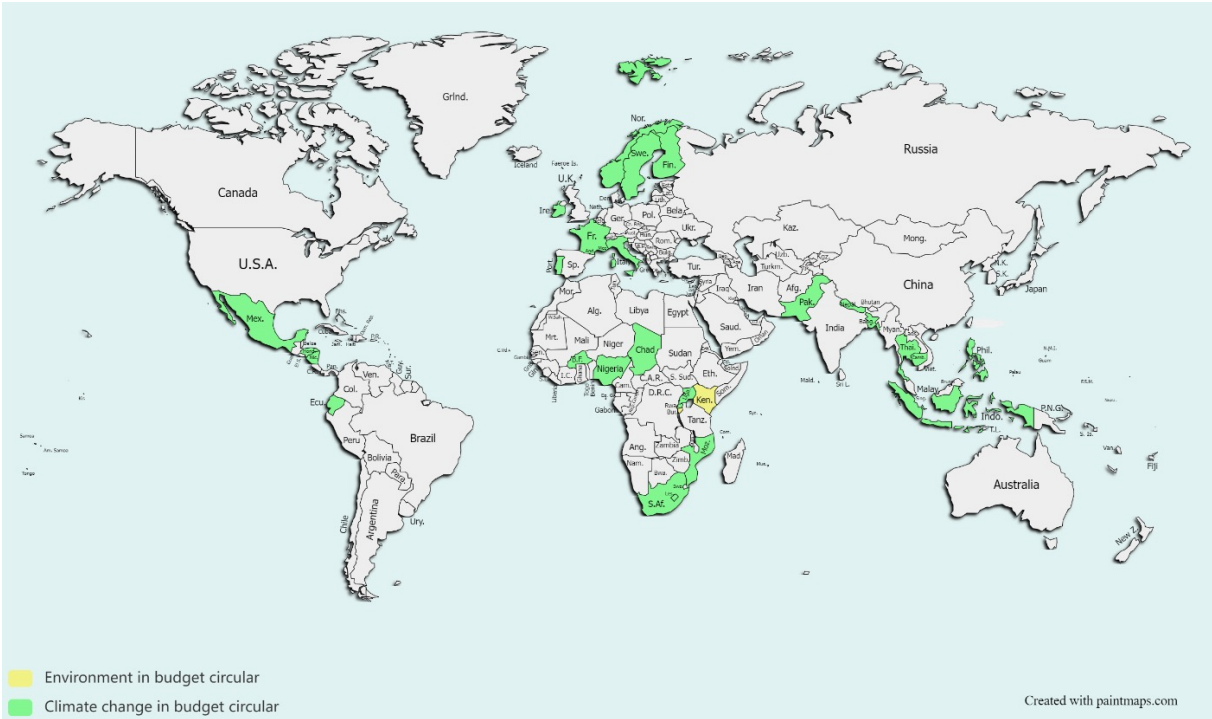
In Africa, an analysis of 29 publicly available budget circulars found that 8 made explicit reference to climate change. These are Burkina Faso, Chad, Lesotho, Mozambique, Nigeria, Rwanda, South Africa, and Uganda. A further 3, namely Burundi, Kenya and Mauritius made reference to the environment or green growth (CABRI et al., 2021a).

²⁴ The level of integration of climate change into the budget circular differs across countries. This study does not look at the level of integration.

Results from a recent survey found that one of the most common elements put in place to support green budgeting in European and CIS countries are detailed instructions in the annual budget circular. This is provided in France, Italy, Luxembourg, Norway, Portugal, and Sweden (OECD, 2021b). Other countries also include Finland and Ireland. Plans are currently underway to introduce this in Azerbaijan.

In Latin America and Caribbean, less progress has been made, with just 4 countries, Ecuador, Honduras, Mexico, and Nicaragua having integrated climate change into the budget circular.

Figure 4.4: Climate change in the budget circular



This is also enabling countries to include climate change in Medium Term Expenditure Frameworks (MTEFs). These have become widespread since the mid-1990s. More than 130 countries have introduced some form of medium-term expenditure planning (World Bank, 2013). By including climate change in MTEFs, countries can strengthen the integration of climate change in the budgeting process. In doing so, it gives more certainty and predictability to agencies for their climate expenditure planning.

For example, in Bangladesh, the Budget Call Circular provides strategic directions to the sectoral ministries for the preparation of Medium-Term Budget Framework (MTBF). It has been made climate-inclusive by linking the major climate policies and strategies.

All climate-relevant ministries prepare their MTBFs following the guidance provided in the Budget Circular. In Pakistan, climate change has been integrated into the MTEF of the Ministry of Water Resources, from 2018/19. The Ministry has a budgetary allocation for its investment in climate-resilient water infrastructure, which spans three fiscal years, totalling approximately \$370 million (OPM, 2019).

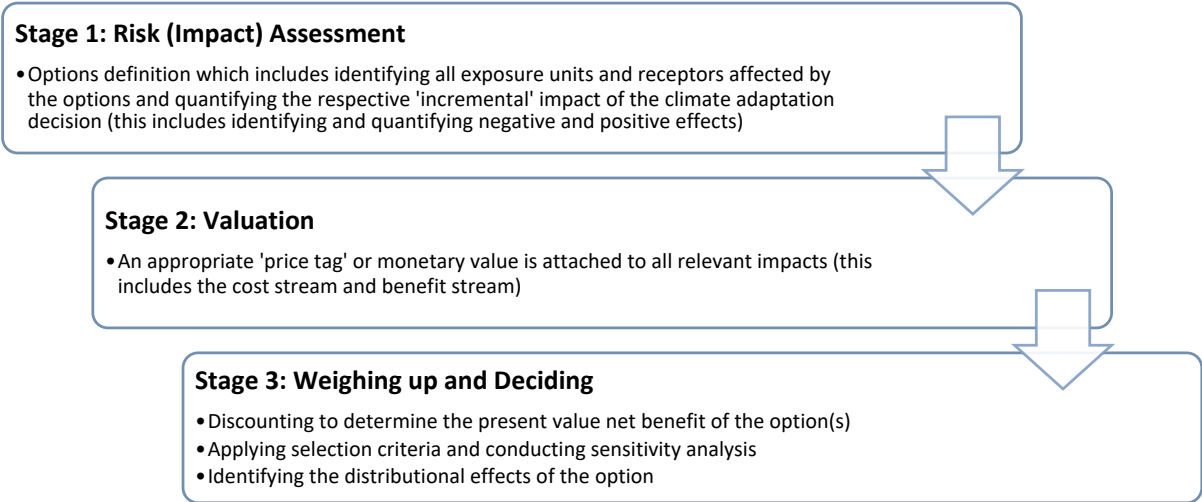
Indonesia, the Annual Mitigation Fiscal Report, produced by MOF and included as part of the budget guidance documents, is prepared early in the budget cycle so that it can influence the MTEF.

4.2.2. Climate Change Impact Appraisal for Public Policy and Investment

Climate responsive public investment management²⁵ is central to climate adaptation and mitigation, as well as ensuring the achievement of the SDGs. Climate change increases the frequency and severity of natural disasters, which are associated with costs due to the direct damage to infrastructure and the disruption of services. In turn, decisions made regarding infrastructure development will have implications for the level of greenhouse gas emissions and the resilience of a country to natural disasters (IMF, 2021b).

There are a range of appraisal options²⁶ or decision support tools that can be used to assist the various levels of government with allocating resources efficiently. Cost benefit analysis (CBA) is a valuable tool for public policy which provides a systemic process for calculating the benefits and costs of policy options and investment projects. There is some variation in how countries apply CBA for new or existing policies, programs or projects but all methods follow the same broad approach and results should be directly comparable (OECD, 2018). The process usually consists of 3 elements, outlined in Figure 4.5.

Figure 4.5: Elements of climate sensitive cost benefit analysis



Source: Adapted from (Metroeconomica, 2004)

Incorporating climate change into CBA includes identifying, measuring and allocating a monetary value to all associated impacts, including changes caused by climate risk and recognition of the value of mitigation. This can be technically challenging, particularly as climate change risks are often dislocated in time and space, making cause and effect difficult to establish.

Climate change is associated with considerable uncertainty and it may not be feasible to place monetary value on all perceived risks (Metroeconomica, 2004). This has led to the use of alternative decision support tools for climate change appraisal, such as cost effectiveness analysis (CEA) and multi-criteria analysis (MCA) as outlined in Box 7. These methods allow the inclusion of non-monetary values.

25 Climate responsive public investment management requires gathering and managing information on current and past natural hazards, forecasting the future occurrence of natural disasters or extreme weather events and tracking the nature and costs of natural disasters as they occur (Minh Le, Leow, & Seiderer, 2020). This is complex, particularly for developing countries which have lower levels of institutional capacity.

26 Appraisal is the process of assessing the costs, benefits and risks of alternative ways to meet government objectives. It helps decision makers to understand the potential effects, trade-offs and overall impact of options by providing an objective evidence base for decision making. The appraisal of social value is based on the principles and ideas of welfare economics (HM Treasury, 2020).

Box 7: Tools to quantify and prioritise climate risks

Several tools have been proposed to support the development of public policy and assist with decision making on selecting the best policy or program. The most commonly used tools are:

- **Cost benefit analysis (CBA):** This allows the comparison of costs and benefits of an investment or intervention over time. *It is usually used when outcomes are expressed in monetary terms.*
- **Cost effectiveness analysis (CEA):** This determines how an objective can be achieved in the most cost-efficient way. *It is often preferred when it is difficult to assign monetary value to benefits.*
- **Multi-criteria analysis (MCA):** This provides systematic methods for comparing quantitative and qualitative decision criteria, providing the possibility to rank and prioritize multiple adaptation options. The prioritisation is based on economic factors and the qualitative assessment of criteria, e.g. feasibility, cost-effectiveness, co-benefits, ease of implementation, etc. *It is mostly used when benefits cannot be measured quantitatively or when there are multiple benefits which are difficult to aggregate.*

Source: (Metroeconomica, 2004; Rodgers, Douglas, Fabro, & Capstick, 2015; UNFCCC, 2011)

Several governments have built on practices similar to rapid and/or participatory appraisal to develop and pilot methods of climate change appraisal that have a consistent analytical framework, and thus have some degree of comparability and lesson-learning, but which rely on expert opinion and/or beneficiary participation to assess the sensitivity to climate change of the program, including the benefits, but also the costs. These methods have been used in several Indian states; in Indonesia and Malawi, both at the national and sub-national level; and in Benin, where the framework was extended to cover climate change and gender.

Box 8: CBA in selected countries

UK: Central government guidelines are issued, known as ‘The Green Book’, on how to appraise policies, programs, and projects, as well as the design and use of monitoring and evaluation before, during, and after implementation.

- The guidance applies to all proposals that concern public spending, taxation, changes to regulations, and changes to the use of existing public assets and resources.
- The guidelines are designed for use by all public servants concerned with proposals for the use of public resources (HM Treasury, 2020).
- It provides an integrated approach to the assessment of climate mitigation, transition and other sustainability considerations, including issues around equity, across all government programs. This encourages departments across the government to robustly quantify and monetise (wherever possible) the differential “green” impacts in calculations for value-for money and cost-benefit assessments (OECD, 2021b).

Thailand: The use of climate change benefit analysis (CCBA) has been piloted, which builds on the concepts of CBA and impact assessment for public projects and investments, including investments by state owned enterprises.

- It identifies investments that will become significantly more important with climate change because they contribute to climate adaptation (by reducing loss or damage from climate change) or climate mitigation (by reducing greenhouse gas emissions).
- It ensures that related investments receive priority and are properly designed to respond to climate change. CCBA is primarily used to support budget submissions by line ministries.
- Smaller projects under TBH 50m can use CCBA to strengthen the justification for funding. However, it is a requirement for all projects that are climate relevant costing 50m and more.
- It offers a range of practical options for CCBA for projects ranging from THB 50m to 1,000m.
- Full CCBA is required for projects over THB 1,000m (Government of Thailand & UNDP, 2015).

Sources: (Government of Thailand & UNDP, 2015; HM Treasury, 2020; OECD, 2021b)

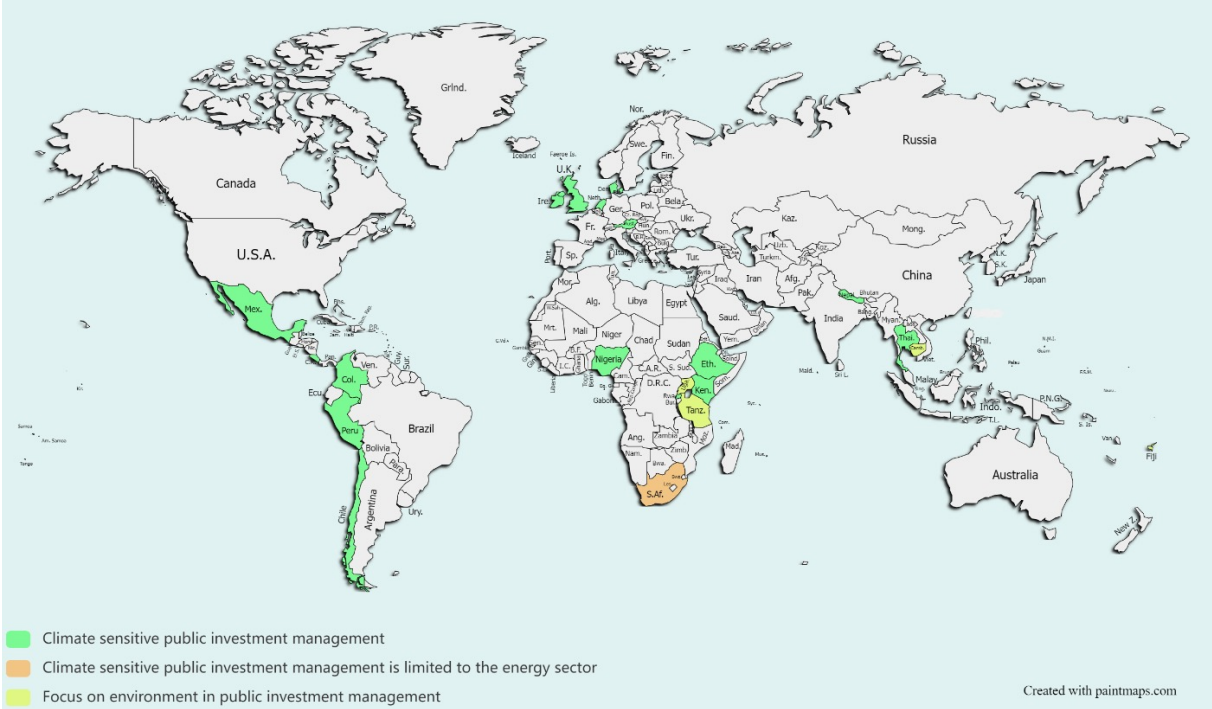
Most significant private investments are subjected to CBA and many investors are now taking into account the effects of climate risks, insurance costs, energy prices and carbon markets. Figure 4.6 provides an overview of the countries which have integrated climate change into their public investment management processes. This includes countries that have at least one element of climate sensitive public investment management in place; however, it should be noted that the degree of integration varies across countries.

In Africa, only a handful of governments have started to integrate climate change into public investment management. This may partly be due to limited capacity and partly because the appraisal is more complicated given the need to take into account non-market costs and benefits. These countries are Ethiopia, Kenya, Nigeria, and Rwanda. In Tanzania and Uganda, it is focused on the environment and in South Africa, it is limited to the energy sector.

In Asia-Pacific, Nepal, Samoa, and Thailand have integrated climate change into their public investment management processes. In Cambodia and Fiji, public investment management focuses on environmental issues. Maharashtra, in India, focused on climate change appraisal for public investment using CBA as the top priority for implementing its Climate Change Strategy and Action Plan (SAP); and Bihar and Assam both piloted practical methods for rapid climate change appraisal of policies and investments in their SAPs.

In Latin-America and Caribbean, the larger countries, namely Chile, Colombia, Costa Rica, Mexico, and Peru have integrated climate change into their public investment management. In Europe and CIS, countries include Austria, Denmark, Ireland, Netherlands, and the UK.

Figure 4.6: Climate sensitive public investment management



4.2.3. Climate Sensitive Program Budgeting

Many countries are strengthening budget processes through program budget reforms which require budget units to declare the objectives of the spending programs that they manage. These objectives are typically required to relate to national development strategies, thereby ensuring that the strategies influence the budget.

A directly comparable approach can be taken with climate budgeting by requiring budget units to declare the objectives in the climate change strategy (e.g., NDC or LTS) that their expenditure contributes to. If budget tagging is used, the tag can refer to the NDC/LTS objective to which the expenditure contributes.

To date, the mapping of expenditure to climate change strategy objectives has happened only as part of evaluation work (e.g., in the first Vietnam CPEIR) and has not been integrated in the annual budget. One of the reasons for this may be that program budget reforms often take many years and ministries of finance can be cautious about complicating the process by introducing a special emphasis on one policy, like climate change. However, this should be possible as the reforms mature, and a climate-sensitive program budget would be an effective endpoint for integrating climate change into the budget.

Some countries have attempted to include climate change in their medium-term budgeting/expenditure frameworks (MTBFs/MTEFs). Examples of such countries include Bangladesh and Pakistan in Asia, and France in Europe.

From a bottom-up perspective, Fiji is among a few Pacific countries which has mainstreamed risk-informed planning in key sectoral ministries. The key advantage of adopting a medium-term perspective on climate budgeting is greater fiscal sustainability and predictability in budgetary allocations.

4.2.4. Lessons Learnt

Budget circulars and guidelines are key documents for integrating climate change into the budget cycle.

Although changes to circulars are an easy way to achieve reforms, there is often strong competition for space in the budget circular. About 25 countries across the world have some experience with including climate change in budget circulars, but this can vary from a general comment to specific requirements to include analysis that explains and justifies the contribution of expenditure to adaptation and/or mitigation.

While inclusion of climate change in budget circulars does reflect the government's commitment to tackling climate change through domestic resources, it is also necessary for allocations to result in effective expenditure. Simultaneously, a medium-term perspective on climate budgeting can further contribute towards a more sustained commitment on financing climate investments.

Climate sensitive CBA and appraisal options are important tools to help governments select the best option to meet policy objectives. When used appropriately, they can help spending ministries to claim added priority as a result of the contribution of programs to adaptation and/or mitigation. They are widely used in the private sector but PIMA scores show that overall capacity in government is low in this area and even lower when climate change is considered (IMF, 2021b). This is particularly true for developing countries which often lack capacity and institutional processes to screen public projects for climate induced risks (Minh Le et al., 2020). Integrating climate change into this analysis adds an extra layer of complexity as it can be difficult to frame the analysis as many new variables are introduced, some with degrees of uncertainty.

In response to the challenges of complexity and capacity, several countries have piloted the use of rapid climate change appraisal methods that have a common analytical framework but rely on structured qualitative expert opinion and can be undertaken in a few hours. These can be useful but require careful framing and technical guidance.

It is too early to assess whether reforms in program budgeting could provide opportunities for strengthening the integration of climate change into the budget. In theory, the coordination of key performance indicators in the budget and in climate change strategies (including NDCs) should help to consolidate commitment to climate change objectives.

A sequenced and holistic whole-of-government approach is required to upgrade a national budget preparation system that factors in adaptation to growing climate risks and opportunities for mitigating climate change. This includes regulatory, institutional and operational reforms, and adequate capacity building (Minh Le et al., 2020).

4.3. Stage 3: Budget Execution, Accounting and Reporting

The government makes expenditure on the approved appropriations budget during budget execution. It is important that it is able to track and report on climate-related expenditure (IMF, 2021a). This information should ideally be used to inform decision-making on future allocations.

This section reviews the experience countries have had with tagging and tracking climate expenditure, green procurement, and the monitoring and evaluation systems in place to assess progress in achieving climate related goals.

4.3.1. Classifying, Tagging and Tracking Climate Expenditure

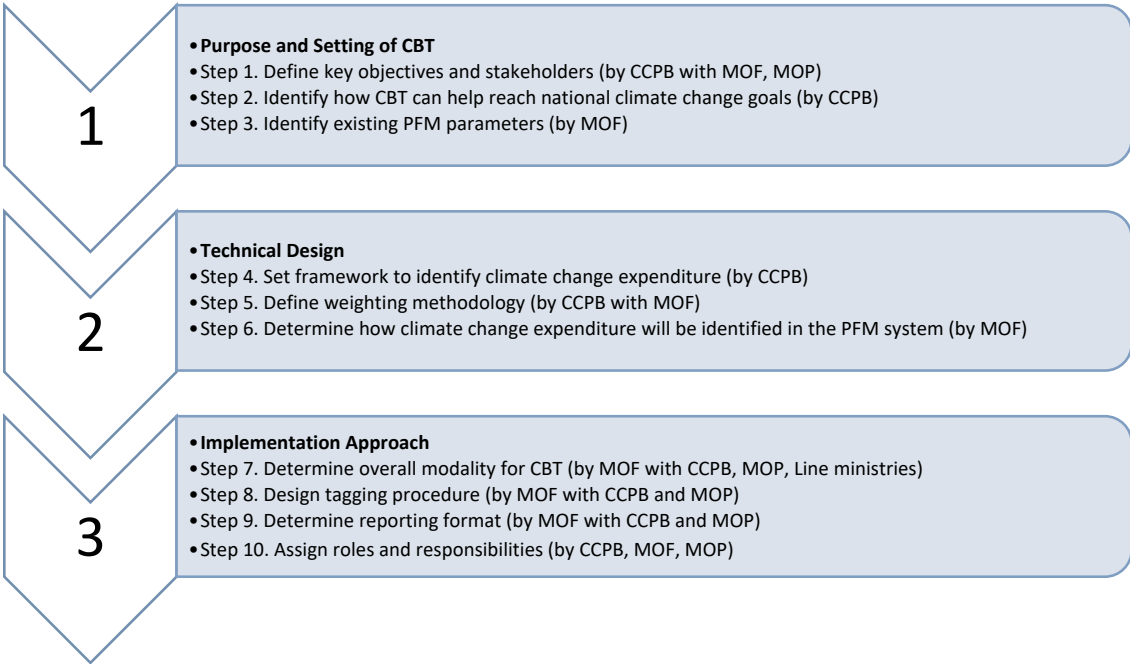
Climate change is cross-cutting and public expenditure on climate change adaptation and mitigation is typically shared across a number of ministries such as energy, transport, agriculture, and public works. There has been growing interest by governments to tag their climate related expenditure as this can provide information on the impact of budget policy on climate goals (OECD, 2021a).

Climate budget tagging (CBT) is defined as, ‘a tool for identifying, classifying, weighting and marking climate-relevant expenditures in a government’s budget system, enabling the estimation, monitoring and tracking of those expenditures’ (UNDP, 2019a).

Some of the benefits of CBT include raising awareness of climate change for ministries of finance and line ministries, supporting climate change policy formulation and resource allocation across sectors, identifying financing gaps, mobilizing resources for climate action from both domestic and international sources, and improved monitoring and reporting of climate change expenditure (World Bank, 2021a).

CBT design can generally be categorised into three phases, outlined in Figure 4.7. A series of decisions need to be made with reference to the definition of climate change, the coverage, and delegation of responsibilities. The process requires strong leadership from the ministry of finance or planning who can convene all the relevant actors in the budgetary process. It also requires active involvement from the ministry of environment and line ministries and agencies (World Bank, 2021a).

Figure 4.7: Steps to designing climate budget tagging



Source: (UNDP, 2019a). Note: CCPB is Climate Change Policy Body, MOF is Ministry of Finance, MOP is Ministry of Planning.

Globally, 26 countries have introduced or piloted CBT at the central level. This includes 7 countries in Africa, 7 countries in Asia-Pacific, 6 countries in Europe and CIS, and 5 countries in Latin America and Caribbean. The majority of CBT reforms were introduced recently, i.e., after 2015, with several countries still in the piloting phase.

Several other countries are developing or designing CBT, including Eswatini, Namibia, Georgia, Moldova, and North Macedonia. There is great diversity in the range of approaches that have emerged globally for CBT resulting from differences in local contexts, political choices, and institutional and administrative constraints. Table 4.4 outlines the different approaches countries have taken. For a full discussion on CBT approaches, please see World Bank (2021a).

A definition of climate-relevant expenditure is needed for CBT. In the absence of an internationally accepted definition for the relative contribution of climate change, two broad complementary approaches have emerged which distinguish between climate relevant and other development expenditures.

The first is the objectives approach which focuses on the intended impact of the activity, typically following the OECD Rio marker definitions. This approach has been followed for example, by Kenya, Indonesia, Ireland, and Colombia. Some countries have extended this to include an estimate of the benefits generated if objectives are achieved. This has mostly been done in the context of classification for CPEIRs and CCFFs, although South Africa, and Assam and Bihar in India have piloted options for registering expected benefits in CBT.

The second approach is policy-based as it relies on expert judgement and national climate change definitions as provided in national climate change policies and plans, e.g. in Ghana, Pakistan, Vietnam, and Ecuador. Some countries have adopted a mixed approach, such as the Philippines and Uganda, recognising that the two systems have different roles and complement each other.

In all these countries, the focus has been on ex-ante classification, used to influence program design and prioritisation. In theory, the ex-post evaluation of climate expenditure could use similar approaches to assess whether expected benefits were delivered, but this is not yet happening.

Box 9: Country examples of approaches to CBT

Objectives-Based Approach:

South Africa is currently piloting a system of CBT with strong leadership from the National Treasury (NT). This includes a conventional objectives-based approach, built on similar principles to the OECD DAC classification. Given the strong interest of the NT in understanding the effectiveness of public expenditure, the initiatives also extend to piloting an assessment of the relative value of the benefits from achieving mitigation and/or adaptation objectives, compared with the value of routine development benefits.

Ireland also applies an objectives-based approach. CBT was introduced to support the issuance of sovereign green bonds, therefore the definition applied for climate-relevant expenditure is based on the definition developed by the International Capital Markets Association. This ensures alignment between sovereign green bond management and CBT.

Climate-related expenditure is considered to be, ‘any expenditure which promotes, in whole or in part and whether directly or indirectly, Ireland’s transition to a low carbon resilient and environmentally sustainable economy’ (Cremins & Kevany, 2018). This definition only considers positive contributions to climate change. Ireland makes use of a simple binary classification as either climate related or not (Nesbit, Stainforth, Kettunen, & Blot, 2021).

Policy-Based Approach.

The first **Vietnam** CPEIR used a combination of the objectives-based approach and a policy-based approach. A second phase of classification work, led by the Ministry of Planning and Investment, introduced standard guidelines that required expenditure to be tagged according to a typology that defined about 120 detailed types of expenditure organised into 28 themes, each of which was mapped to policy priorities in the National Climate Change Strategy, the National Green Growth Strategy, and the NDC.

There are also differences in coverage. Most CBT covers the central government. However sub-national budgets and transfers have also been included in Ghana, Kenya, South Africa, Uganda, Bangladesh, Nepal, Pakistan, Philippines, Colombia, Ecuador, and Honduras. There are a number of countries where CBT only covers selected sectors, usually those most vulnerable to climate mitigation or adaptation. This is sometimes done during the first pilot stage. However, most countries included in our analysis cover all sectors, which supports a whole-of-government approach.

Most countries also include both the investment and recurrent budget, with only a handful of countries such as Ireland, Mexico, and Nepal limiting CBT to the investment budget. Ireland, Indonesia, and Mexico have used CBT to support the issuance of green bonds or SDG bonds.

In Ireland, CBT facilitates reporting to investors on Irish Sovereign Green Bonds. Under the terms of this bond, any proceeds raised can only be devoted to eligible green expenditure and the government must report to investors through an annual allocation report on the disbursement of these sums (Cremins & Kevany, 2018). In Indonesia, Green Sukuk²⁷ funded projects are selected from tagged projects that fall into one or more of the eligible sectors identified in the Green Bond and Sukuk Framework. Respective ministries have to track, monitor and report on the environmental benefits of the eligible green projects funded by Green Sukuk proceeds (Indonesia Ministry of Finance, 2018).

Box 10: Update on CBT piloting in selected countries

CBT is still a relatively new and emerging field, and countries around the world have recently adopted related reforms. Most have started with CBT design and piloting. This box aims to provide information on some of the recent CBT piloting initiatives which are not part of the World Bank (2021a) review.

South Africa: The National Treasury is leading the design and piloting of a CBT framework. The draft design is currently being piloted in the water, transport, energy, and agriculture sectors in selected national and provincial departments, metros, and secondary cities. Related sectors have been prioritised based on their high relevance to the country’s climate change response.

Before piloting commenced, preliminary capacity needs assessments and awareness-raising workshops were held, and more are planned with non-pilot sites to complement information from the pilots. A second pilot phase with a public entity will be undertaken to test the public entity adjusted CBT framework (South Africa National Treasury, 2021).

²⁷ Green Sukuk is a shariah-compliant bond. In Indonesia, 100% of the proceeds are exclusively used to finance or refinance green projects that contribute to climate change mitigation or adaptation, as well as preserving biodiversity (Indonesia Ministry of Finance, 2019a).

Nigeria: The World Bank is currently supporting Nigeria with the design and piloting of their climate budget tagging reform in 6 States through the country's State Fiscal Transparency, Accountability and Sustainability Program for Results. It will enable State governments to identify, classify and track climate change and green growth related public expenditure (CABRI, 2021b).

Uganda^a: In 2018, the Ministry of Finance, Planning and Economic Development established a budget tagging methodology with the help of the World Bank under the NDC Support Facility. Budget tagging was piloted in four ministries and four local governments in 2019/2020. It was meant to be rolled out to the rest of the budget entities, but progress has been stalled by the change in government following elections in early 2021 (CABRI, 2021a).

EU: To help achieve its climate goals, in 2014, the EU decided to develop and apply a climate tracking system as a means of monitoring progress on the EU's commitment to integrate climate action across the entire EU budget. The commitment was for 20% of the budget to contribute to climate action in the first period (2014-2020), which subsequently increased to 25% for the next period (2021-2027) (European Commission, 2022c; Nesbit, Stainforth, Hart, Underwood, & Becerra, 2020).

Climate tracking is done using EU climate markers, which are adapted from the OECD's development assistance tracking 'Rio markers'. EU climate markers reflect the specificities of each policy area, and assign three categories of weighting to activities on the basis of whether the support makes a significant (100%), a moderate (40%), or insignificant (0%) contribution towards climate change objectives (Nesbit et al., 2020). The commitment for a proportion of the budget to contribute to climate action is endorsed by the European Council and the European Parliament.

Mexico: Green budgeting was introduced and the practice embedded in the national budget law in 2013 (OECD, 2021b). The Ministry of Finance has had a leading role in these efforts. A separate annex (Annex 16) is added to its budget document specifying the climate change relevant amounts or percentages allocated by different public institutions (IADB, 2020).

The country's green budgeting approach is linked with the Sustainable Development Goals (SDGs) budgeting approach through the goals set out in the national development plans where budget tagging is done in relation to programmes contributing to biodiversity as well as other SDGs (OECD, 2021b). Mexico is currently designing a tagging methodology to be included in the 2021 annual budget decree (World Bank, 2021a).

Note: ^a Uganda was part of the World Bank (2021) review, however, since then CBT reforms have stalled.

Some countries, for example Kenya, Bangladesh and Honduras have integrated CBT into their financial management systems, such as IFMIS. This enables real-time tracking of actual expenditure.

Some countries, such as South Africa, plan to integrate CBT into their IFMIS as piloting progresses.

For almost all countries, the lead institution has been the central finance agency. In Colombia and Nepal, the central planning agency has taken the lead. However, ministries of environment and climate change agencies/commissions also play an important role as they have technical knowledge on climate change that can be used to help develop and validate the methodology, as well as support capacity building. They were involved in most of the CBT processes included in our analysis.

Countries such as Bangladesh, Ghana, Cambodia, and Colombia have centralized tagging. However, most countries delegate tagging to line ministries, which ensures that tagging is done by officials most familiar with the respective activities and programs.

Generally speaking, due to various factors, line ministries often have an incentive to overestimate the climate relevance of their programs, known as 'greenwashing', which is problematic and poses a danger when assessing the effectiveness of program. Some countries have, therefore, introduced quality assurance measures. This includes Indonesia, Ireland, and Philippines.

Table 4.4: Overview of country approaches to climate budget tagging

	Start date	Definition	Coverage	Budget type	Sub-national Transfers/ Budgets	Transfers to SOEs	Lead institution	Involvement of MoE	Tagging centralised/by line ministry	Quality assurance	Tagging process	Reporting on Actual Expenditure
Africa												
Ethiopia*	2017 only	Objective-Based	Selected Sectors				CFA		Centralized		Manual	
Ghana	2016	Policy-Based	All Sectors	Investment & Recurrent	Yes		CFA	Yes	Centralized		IFMIS	
Kenya	2017	Objective-Based	All Sectors	Investment & Recurrent	Yes		CFA	Yes	Line Agency		IFMIS	
Mauritius*	2018						CFA					
Nigeria*	2021				Yes		CFA	Yes				
Seychelles*	2021		Energy sector									
South Africa*	2021		Selected sectors	Investment & Recurrent	Yes	Yes	CFA					
Uganda*	2019	Mixed Approach	All Sectors	Investment & Recurrent	Yes		CFA	Yes	Line Agency	Yes	IFMIS	Yes (from pilot)
Asia-Pacific												
Bangladesh	2018	Policy-Based	Selected Sectors	Investment & Recurrent	Yes		CFA		Centralized		IFMIS	Yes
Cambodia^N	2013	Objective-Based	Selected Sectors	Investment & Recurrent			CFA	Yes	Centralized		Manual	Yes
India (Odisha)	2020		Selected Sectors	Investment				Yes	Centralized		Manual	
Indonesia	2014	Objective-Based	Selected Sectors	Investment & Recurrent			CFA	Yes	Line Agency	Yes	IFMIS	
Nepal	2013	Policy-Based	All Sectors	Investment	Yes		Central Planning Agency	Yes	Line Agency		Manual	
Pakistan	2017	Policy-Based	Selected Sectors	Investment & Recurrent	Yes	Yes	CFA	Yes	Centralized		IFMIS	
Philippines	2015	Mixed Approach	All Sectors	Investment & Recurrent	Yes	Yes	CFA	Yes	Line Agency	Yes		

	Start date	Definition	Coverage	Budget type	Sub-national Transfers/ Budgets	Transfers to SOEs	Lead institution	Involve-ment of MoE	Tagging centralised/by line ministry	Quality assurance	Tagging process	Reporting on Actual Expenditure
Thailand	2015-2018	Policy-Based		Investment & Recurrent					Line Agency		Manual	
Vietnam	2014	Policy-Based	Selected Sectors	Investment & Recurrent	Yes							
Europe/CIS												
Denmark							CFA		Centralized			
Finland	2017	Objective-Based	Selected sectors				CFA		Line Agency			
France	2021	Objective-Based	All Sectors	Investment & Recurrent		Yes	CFA	Yes	Centralized		Manual	
Ireland	2019	Objective-Based	All Sectors	Investment			CFA		Centralized	Yes	Manual	
Italy			All Sectors				CFA	Yes	Centralized			
Moldova*	not yet applied	Mixed Approach	All Sectors	Investment			CFA	Yes	Line Agency	Yes	Manual	
North Macedonia*	2021		All sectors	Investment & Recurrent	Yes		CFA	Yes				
Latin America and Caribbean												
Colombia	2017 only	Objective-Based	Selected Sectors	Investment & Recurrent	Yes		Central Planning Agency	Yes	Centralized		Manual	
Ecuador	2016	Policy-Based	All Sectors	Investment & Recurrent	Yes	Yes	CFA	Yes	Line Agency		IFMIS	
Honduras	2017	Objective-Based	All Sectors	Investment & Recurrent	Yes		CFA	Yes	Line Agency		IFMIS	
Mexico	2021		All Sectors	Investment			CFA	Yes	Line Agency		Manual	
Nicaragua	2017	Objective-Based	All Sectors	Investment & Recurrent			CFA		Line Agency		IFMIS	Yes

Sources: (Bova, 2021; North Macedonia Ministry of Environment and Physical Planning, 2021; OECD, 2021b; South Africa National Treasury, 2021; World Bank, 2021a). * is piloting or under development. ^N Cambodia CBT is limited to the aid database (CDC on international assistance). Regular updates are made with continuity in classification (Government of Cambodia, 2021). For some countries, reforms are relatively new and there is limited information available.

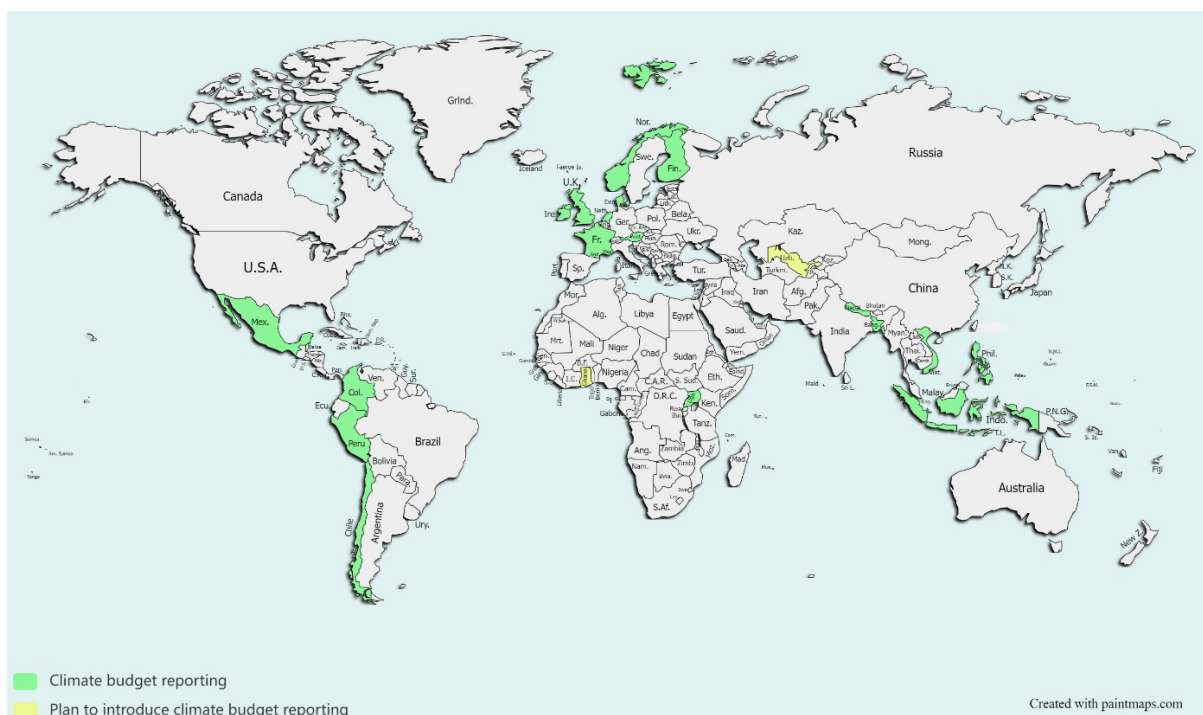
4.3.2. Climate Budget Reporting

One of the key benefits from CBT is that it makes it possible to report efficiently, consistently, and transparently on the levels of climate expenditure, both in budget allocations and in actual expenditure. Reporting on climate relevant allocations is more widespread compared to reporting on actual expenditure.

Climate allocations are usually reported as part of the annual budget. However, there are a few countries which produce separate reports, at times annexed to the annual budget.

Figure 4.8 shows the countries which report on their climate change budget; however, the extent of reporting is not established.

Figure 4.8: Climate budget reporting



Box 11: Examples of countries which produce reports on climate budget allocations

- **Bangladesh** publishes the Climate Financing for Sustainable Development Budget Report, which provides a snapshot of the climate change relevant allocations of twenty line ministries and divisions, in relation to their total budget allocation (Bangladesh Ministry of Finance, 2021). It also published data on climate budget expenditure.
- **Philippines** publishes a national climate budget document and climate budget briefs. The climate budget briefs provide the tagged allocations in the national budget for programs, activities and projects (Philippine Climate Change Commission, 2022).
- **France** produces the yellow book annexed to the budget which provides an assessment of the environmental impact of budget allocations (Government of France, 2020).

- **Colombia** has a dedicated climate finance measure, report and verify (MRV) platform, which provides interactive maps to visualize data on public climate expenditure by sector, implementing entity, subnational unit, and origin of funding. However, available data covers the 2011-2017 and no narrative or analytical reports are available.

The reports in Bangladesh, Philippines and France are submitted to the Legislature and used during budget scrutiny.

Budget execution for climate-related expenditure can be tracked by countries that have integrated codes into their chart of accounts or tag their climate expenditure in their financial management systems. Bangladesh produces budget execution reports on climate expenditure, which provides information on the allocation and actual expenditure by ministry, program and thematic area (World Bank, 2021a).

Uganda published its climate expenditure data, obtained from piloting CBT. Other countries which provide some reporting on actual expenditure include Cambodia, Indonesia, Nepal, and Nicaragua. CBT is relatively new and still in the piloting phase in several countries. Systems that are being piloted have potential to produce routine climate expenditure data.

4.3.3. Green Public Procurement (GPP)

The government is the single largest purchaser for goods and services, with annual government contracts accounting for 12% of global GDP (World Bank, 2021b). The government can use its purchasing power to achieve climate objectives through climate responsive procurement, also part of what is more broadly known as green procurement²⁸. The latter is a component of sustainable procurement, which is broader in scope and also includes the social and economic considerations of sustainable development (UNEP, 2021b)

Climate responsive procurement requires the integration of climate change and environmental criteria into the procurement process, taking into consideration the whole product life cycle²⁹. Climate change criteria could cover the different stages of procurement such as the selection of suppliers, technical specifications, award criteria, and contract performance.

Climate change should also be embedded into procurement policies and systems. It requires changes to the procurement culture from a 'risk averse compliance function, to a strategic risk management function' (World Bank, 2021b), as it goes beyond the purchase price, to optimise value for money over the lifecycle of assets (Casier, Huizenga, Perera, Ruete, & Turley, 2015).

Public procurement takes place at all levels of government. A top-down or bottom-up approach to reforms is generally pursued. A top-down approach usually entails the introduction of legislation, policy reform and cascading targets, led by the central procurement agency. With a bottom-up approach, climate responsive procurement is voluntary, with the process led by willing procurers. These tend to build on operational experiences.

Often, climate sensitive public procurement is driven by the ministry of environment; however, they do not have direct authority over procurement policy, nor are they involved in daily procurement operations. Scaling up climate-sensitive procurement requires active engagement from the public procurement agency, which is usually part of or under the oversight of the Ministry of Finance.

The procurement agency is responsible for procurement policy, regulation, and technical support, including capacity building for procurement entities.

28 Green procurement uses public procurement to meet both climate and environmental objectives.

29 'A Life Cycle Assessment allows the identification and measurement of sustainability impacts over the life cycle of products, while Life Cycle Costing helps estimate the total cost of a good or service after monetization of its externalities over its lifetime' (UNEP, 2021b).

Table 4.5: Countries with green public procurement

GPP Institutional Arrangement	% countries							TOTAL
	ECA	EAP	LAC	MNA	AFRE	AFRW	SAR	
GPP strategy or action plan, or GPP in national public procurement strategy	73	40	31	21	19	14	0	34
Provision for green public procurement practices in the procurement law	70	55	45	26	19	32	63	44
Some mandatory green procurement practices	27	15	24	0	5	5	0	13
Standardized environmental criteria for some procurement categories	40	20	28	0	10	5	0	18
Specific GPP strategies for any of these sectors: energy, agriculture, water, transport	43	10	28	5	5	9	0	18
Systematic collection of information on green public procurement	33	5	3	0	0	0	0	8
Reporting on the implementation of green public procurement activities	23	5	3	0	0	0	0	6
At least one of the above institutional arrangements	90	55	52	36	29	36	63	53
Number of countries reviewed	30	20	29	19	21	22	8	149

Notes: ECA is Europe and Central Asia, EAP is East Asia and Pacific, LAC is Latin America and Caribbean, MNA is Middle East and North Africa, AFRE is East Africa, AFRW is West Africa, SAR is South Asia.

Source: (World Bank, 2021b) p.82

A recent survey covering 149 countries, provided an overview of the geographical coverage of countries which have green public procurement institutional arrangements. These are summarised in Table 4.5 above.

Europe and Central Asia have made the most progress, with related reforms dating back to the late 1990s and early 2000s. These have often followed a top-down approach led by public procurement agencies. The recent experience of Europe and CIS is outlined in Box 12.

In Latin America and the Caribbean, the process followed a bottom-up approach led by willing purchasers. The recent experience of Latin America and the Caribbean with sustainable procurement, including green procurement, is outlined in Box 13. In Africa and South Asia, limited progress was noted in using procurement to address environmental issues.

Box 12: Green procurement in the EU and CIS

All **EU countries** apply green public procurement on a voluntary basis and the European Commission has developed standardized environmental procurement criteria for twenty-one product groups. The criteria are designed to make it easier for procuring entities to buy goods, services and works with reduced environmental impacts, and cover selection criteria, technical specifications, award criteria, and contract performance criteria.

Procuring authorities may choose, according to their needs and ambition level, to include all or only certain requirements in their tender documents (European Commission, 2016). To facilitate the adoption of green public procurement, a number of EU countries have introduced additional measures that increase the capacity of procuring authorities to apply green public procurement.

Application of green/sustainable procurement can have significant climate outcomes, e.g. three million tonnes of CO₂ would be saved in the Netherlands alone if all Dutch public authorities applied the national sustainable public procurement criteria, which include green criteria. Public sector energy consumption would be reduced by 20% (Spriensma & Blom, 2009).

In the CIS, for **Kyrgyz Republic**, sustainable/green public procurement is one of the priorities in the government programme “Unity. Trust. Creation”, and in the Green Economy Concept approved by the Parliament. The country aims to achieve a target of 30% of all public procurement to be sustainable/green by 2023, and 50% by 2040. However, the necessary tools and “enabling environment still needs to be created, i.e. legislation, certification systems, criteria, training” (Jogorku Kenesh of the Kyrgyz Republic, 2018).

Uzbekistan wants to stimulate green public procurement, focusing mostly on the energy sector (Президент Республики Узбекистан, 2019). The 2018 Law on Public Procurement creates the foundations for modernizing and improving the public procurement system, but its effectiveness and the extent it will be used to promote green public procurement will depend on investments in capacity-building and enhancing the professionalism of officials involved in procurement and contract management (UNECE, 2020).

Box 13: Sustainable procurement in Latin America and Caribbean

Latin America and Caribbean countries have taken steps to modernize and strengthen their public procurement processes, leading to greater competitiveness. Past award criteria based solely on price has evolved into a ‘multi-criteria approach’ which goes beyond price to include quality and economic, environmental, and social sustainability criteria (Jiménez & Roca, 2017).

Sustainable public procurement in the region is intended to:

- Optimise value for money through lifecycle analysis of goods, services or works
- Extend the number of new actors to include and empower women and vulnerable groups
- Develop more sustainable and innovative markets which can deliver transformative solutions
- Promote responsible production and consumption
- Implement public policies which act to fight against poverty, gender equality, and address the climate emergency.

A recent study by OAS and IDB (2020), reviewed the progress with implementing sustainable public procurement in 23 Latin America and Caribbean countries. Results from the analysis show that most countries (20) have established a legal framework for public procurement which facilitates the implementation of sustainable public procurement.

Sustainable criteria are dispersed in respective country legal frameworks, e.g., environment criteria appear under environmental protection laws while social criteria appear under labour laws. A single policy or directive could provide clarity and facilitate the implementation of sustainable public procurement.

The concept of value for money is at an advanced stage in Chile, Colombia, Ecuador, and Paraguay, and it has started to be adopted by other countries in the region. Peru, Dominican Republic, and Uruguay have specific sustainable procurement implementation budgets. Dedicated budgets can assist with identifying and scaling up good practices and providing training and research for the integration of sustainability criteria into public procurement.

Only Chile, Paraguay, Peru, and Dominican Republic have measurement systems and indicators to monitor the implementation of sustainable procurement systems. Colombia, Costa Rica, Guatemala, and Trinidad and Tobago have only indicators. 65% of countries did not report measures related to monitoring and measurement for sustainable procurement. This may be an area for future reforms.

Source: (Jiménez & Roca, 2017; OAS & IDB, 2020)

4.3.4. Climate Performance Monitoring

Progress with mitigation is monitored directly through the GHG inventory system established under the UNFCCC. Many countries have used this evidence, along with evidence on the cost effectiveness of mitigation expenditure, to justify the expenditure required to meet emission targets in NDCs and Long-Term Strategies for Carbon Neutrality.

Climate change monitoring and evaluation (M&E)³⁰ for adaptation is more challenging, and there is no consensus about how this should be done. As a first step, it is relatively straightforward to monitor progress with institutional reforms and there has been some good experience with this in the context of monitoring progress with NAPs, as shown in Box 14.

However, monitoring changes in the resilience of households or ecosystems is more complex. There are many indices of resilience (or its opposite, vulnerability), but these are used mostly to assess geographical variations and many of the variables that determine these indices do not change much over time. This can leave the monitoring of resilience outcomes largely dependent on monitoring the level and sources of incomes and savings.

This can be done using evidence from household surveys, without requiring additional data collection, and new systems for monitoring resilience can rely largely on the KPIs related to incomes and savings that are used for monitoring budget expenditure, in countries that have program budget systems that use KPIs. Some modification of these KPIs may be required, for example, by including an indicator on the variety of sources of income or the liquidity of savings.

Box 14: M&E framework for national adaptation plans (NAPs)

A recent study by Leiter et al (2021) provides an overview of the countries which have an M&E framework for their national adaptation plans (NAPs). The scope of NAPs, and of the associated M&E frameworks, varies greatly, but 63 countries have at least some engagement with M&E for the NAP process.

There is also wide variation in the progress with designing and implementing M&E. Most progress has been made in Europe. Nine developing countries have published monitoring data, of which only one is a low-income country. Four developing countries have published evaluations, none of which are low-income countries. Nearly 20 developing countries are at an advanced stage of preparation, spread across all regions, with a further 6 in the early stages.

Source: (Leiter, 2021)

³⁰ Monitoring is defined as the continuous process of data collection on the performance of interventions. Evaluation is defined as providing systematic ex-post assessment of the merit, worth or significance of an intervention (Noltze, Köngeter, Römling, & Hoffmann, 2021).

4.3.5. Lessons Learnt

CBT has become a relatively popular tool which has been adopted by governments to help them classify, tag and track their climate related expenditure. There is diversity in the country approaches to CBT. These respond to country contexts, including climate change policies and plans, international commitments, existing PFM systems and institutional capacity.

Climate expenditure data obtained from CBT is, therefore, not directly comparable across countries. Information produced from CBT should inform policy-making and budgeting decisions. However, this feedback loop is often still weak and indirect, which necessitates additional mechanisms to ensure that data is used for decision making.

CBT design is usually implemented by piloting in selected ministries or agencies. This allows for an adaptive approach, as the lessons learnt from piloting can facilitate the smooth roll out of the reform. CBT is still relatively new, with most countries only recently having embarked on related reforms. Most countries are, therefore, still in the piloting phase, which typically starts with a limited scope but can be extended to additional sectors, or to sub-national governments.

Continuous capacity building for all involved is vital to the success of the reform. Although the lead is taken by the main finance agency or central planning agency, tagging is most often delegated to line ministries during budget preparation. It is important that they have a sound understanding of what climate relevant expenditure refers to, and how to effectively apply the methodology.

When tagging is limited to an assessment of whether adaptation and/or mitigation features in the objectives of expenditure, it is reasonable and practical for line ministries to take responsibility for tagging. However, there are risks of greenwashing, and validation is required to check that this is not happening. If tagging also assesses the relative value of potential benefits, this requires more capacity, including an understanding of how economic, social, and environmental development is affected by climate change.

Government ownership and political support is essential. The institutionalisation of CBT is technically challenging and takes time, requiring commitment over a number of years. Changes in government can, therefore, stall the process, as was the case in Uganda.

CBT should not be seen as a standalone tool but should be part of a broader approach to climate responsive budgeting. As such, ‘linkages with upstream and downstream aspects of expenditure management need to be strengthened if tagging is to contribute to the alignment of budgets with climate change policy priorities, track budget execution and provide a stronger basis for expenditure analysis, the identification of financing gaps and resource mobilization’ (World Bank, 2021a).

The government can leverage its purchasing power to achieve climate-related objectives through green public procurement. There is no standard route, as governments have taken different reform pathways which respond to country climate change priorities and commitments. Green public procurement typically involves integrating climate and environmental criteria into the public procurement cycle. This requires a change in culture from price based to multi-criteria which considers the climate and environmental costs over the lifetime of the product.

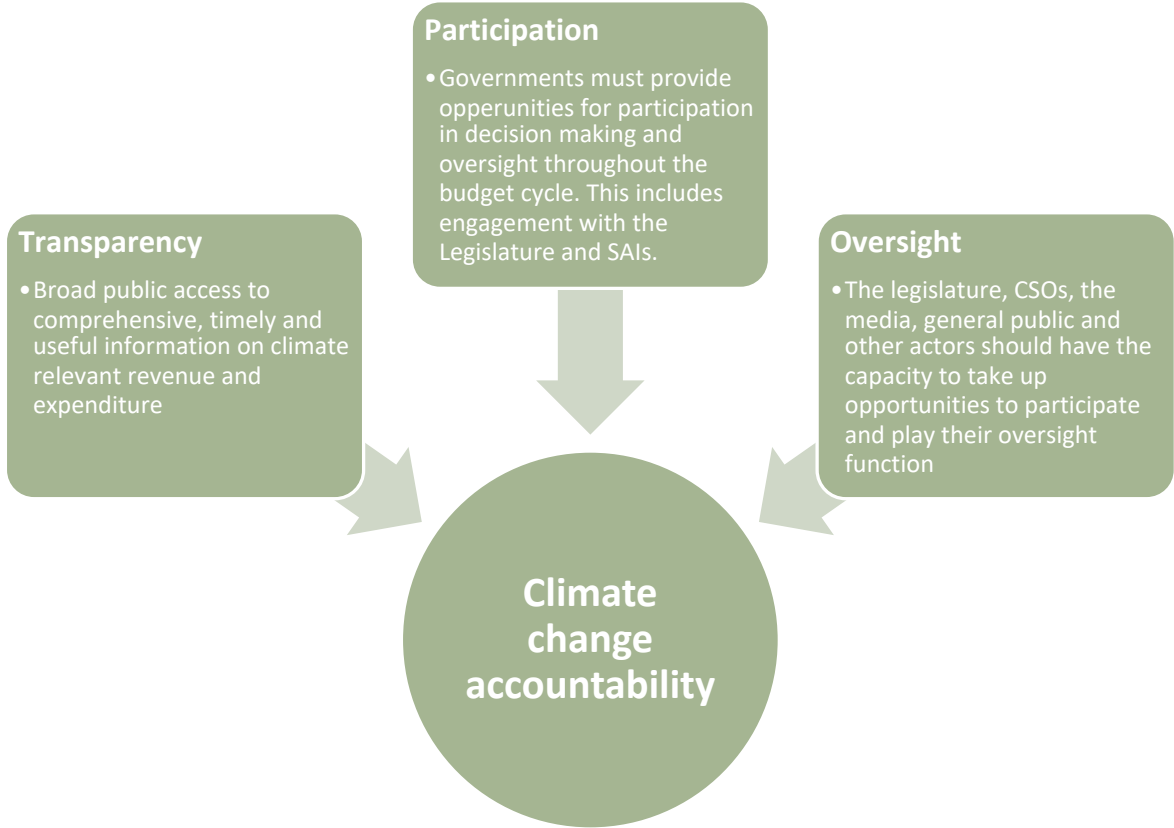
Green public procurement reforms require active involvement from the public procurement agency. Public procurement takes place at all levels of government. Therefore, it is difficult to scale up reforms without the support of the public procurement agency that is responsible for procurement policy, regulation and technical support for procurement entities.

Monitoring and reporting of climate relevant expenditure lags behind, particularly amongst least developed countries. Very few countries with CBT produce reports on actual climate expenditure (with the exception of Bangladesh, Cambodia, Indonesia, Nepal, and Nicaragua). This could inform budgeting decisions and contribute to strengthening climate transparency and accountability. Less than half of the countries (40%) with a NAP have an M&E framework, and even less countries report on their progress or use the evidence in evaluations.

4.4. Stage 4: Control and Audit

It is essential that governments are held accountable for delivering on policy objectives. Strong climate finance accountability requires transparency, participation and oversight (IBP & UNDP, 2018) as shown in Figure 4.9. This section covers Legislature oversight and the use of ex post external climate change audits carried out by supreme audit institutions (SAIs). In addition, we look at the role of civil society organisations (CSOs) and the general public in climate responsive budgeting.

Figure 4.9: Pillars for climate public finance accountability



Source: Adapted from (IBP & UNDP, 2018)

4.4.1. Legislative Oversight

The core functions of the Legislature are law making, oversight of the Executive, and representation of the general public. Through these functions, the Legislature can influence climate change policy and ensure that it is prioritised by the Executive (Commonwealth Parliamentary Association, 2020).

Within the budget cycle, the Legislature has an ex-ante role in budget planning and expenditure allocations. Although the powers of the Legislature vary greatly across countries, most Legislatures have some degree of power to amend the budget submitted by the Executive.

The Legislature is also responsible for approving the budget and holding the government accountable for its implementation. The Legislature has an ex-post role involving financial reporting, external audit, and evaluation.

Following the implementation of the budget, government accounts are audited by SAIs and scrutinised by the legislature, who may make recommendations for improving public financial accountability (Stapenhurst, 2008). Legislation is often the most effective mechanism for translating international agreements which are critical to the global climate change response.

“To be credible, effective and legally enforceable, international agreements must be transposed into national legislation, supported by appropriate budget allocation and robust oversight of government performance. This puts parliaments at the heart of the response to climate change” (Inter-Parliamentary Union, 2016) p.10

For most countries, climate change in ex-ante and ex-post legislative scrutiny is still considered ‘a ministry of environment issue’ and scrutinised within this narrow lens. However, a number of countries have made special provisions within the law which set out reporting requirements to the Legislature. For example, in Benin a recent environment law stipulates that the government communicate the resources devoted and measures taken to reduce the negative effects of climate change to the National Assembly at the end of the budget year.

Several other countries have similar requirements, such as Denmark, where the climate law requires the government to present a climate programme to the Danish parliament every year, including a report on fulfilment of the national and international climate targets (Denmark Ministry of Climate, 2020).

Colombia has a climate law which requires the President to present to Congress a consolidated report on the country’s progress in complying with the NDCs a year before the report is due to be provided to the UNFCCC³¹ (World Bank, 2020b).

Box 15 highlights various other country experiences with climate legislative scrutiny.

While several laws include provisions relating to parliamentary oversight in climate change frameworks, these often lack details on the process that should be followed to ensure scrutiny. In addition, lacking are explicit provisions regarding the action to be taken by the Legislature in the event the government fails to comply with relevant obligations (Higham, Averchenkova, Setzer, & Koehl, 2021).

Box 15: Climate legislative scrutiny in selected countries

Rwanda: Budget submissions to parliament for approval are supported by legislative budget hearings. Climate change is not routinely included in hearings; however, they may appear depending on the circumstances of each submission. Climate change typically features in the discussion of the Ministry of Environment budget. The Government is in the process of introducing the environment and climate change budget statement that will facilitate wider discussion in the legislature (CABRI, 2021a).

Uganda: Climate change is scrutinized by the legislature through the Parliament’s Natural Resources Committee and the Budget Committee. The chairman of the Natural Resources Committee is a member of the Budget Committee – the main body for scrutinizing the budget from inception up to approval. In addition, the Parliamentary Forum on Climate Change (PFCC) was formed which includes representatives from Parliament and civil society. It works towards overseeing how the government addresses the environmental, social and economic pressures presented by climate change (CABRI, 2021a).

Philippines: There are Climate Change Committees in both houses of Parliament. In 2018, the chair of the Senate Budget Committee was also the chair of the Climate Change Committee. This ensures that climate-change issues are systematically taken up in legislature budget discussions. However, this condition is not institutionalized and may therefore change at the next Senate seat turnover (IBP & UNDP, 2018). The Commission on Audit provides independent assessments and occasionally reports on climate change related expenditure programmes (UNDP, 2018b).

31 This was prior to COP 26 where annual NDC reporting was agreed.

Pakistan: In parliament, the Standing Committee on Climate Change annually reviews the Public Investment Programme and with support from the Ministry of Climate Change, provides feedback on the major investment projects. The records of Parliamentary debates are not publicly available; however, documents are kept by the Secretariat with regard to questions tabled by the Parliamentarians and the response by the Executive (UNDP, 2021a).

Mexico: In 2021, the Mexican Chamber of Deputies in the Senate, tested technical tools to integrate sustainable development into the framework of the analysis, debate, and approval of the national budget. These included the establishment of criteria for budget analysis, a public report linking proposed expenditures to the Sustainable Development Goals (SDGs), and a tool to guide standing committees in identifying the level of alignment between proposed programs and the SDGs (ParlAmericas, 2021).

Finland: The climate law requires reporting to Parliament on the implementation of long and medium-term climate plans without specifying the frequency (Finland Ministry of the Environment, 2015).

Italy: The country has had a longstanding practice of reporting on its environmental programmes of both budget execution and final accounts presented to Parliament to inform considerations of budget decisions in accordance with environmental objectives (OECD, 2021).

Ireland: Each minister reports to the Parliament on their performance towards reaching sectoral targets. There is an independent Climate Change Advisory Council, tasked with conducting an annual review of the progress made in achieving planned greenhouse gas emissions reductions and furthering transition to a low carbon, climate resilient and environmentally sustainable economy (Bova, 2021).

Netherlands: The Environmental Assessment Agency annually publishes a climate and energy assessment report, which presents the main climate results in the previous year. This report is presented to both chambers of the Parliament and for public consultation (Government of the Netherlands, 2020).

Benin, Denmark, Norway, and UK government are also required to report to the Parliament annually on meeting climate change related targets.

The Pacific Floating Budget Office provides independent budget analysis and briefs to Members of Parliament across the Pacific. It does this by pooling individual capacity from different Parliaments in the region, complemented with external researchers. This model takes advantage of the differences in the start of the budget year between countries. The Parliaments of Fiji, Papua New Guinea, Solomon Islands, Tonga, and Vanuatu have benefited from the Pacific Floating Budget Office (UNDP, 2019b).

In order to strengthen the Legislature's oversight function of climate finance, countries such as Bangladesh, Nepal and Pakistan have developed climate finance parliamentary guides, outlined in Box 16.

Box 16: Parliamentary handbooks in selected countries

Given the importance of Parliamentary oversight on the allocation and use of climate funds, a number of countries have developed climate finance parliamentary handbooks.

In **Nepal** the 'Climate Budget Review Toolkit for Parliamentarians' is a practical guide developed for the Federal Parliament, Provincial Assemblies, and people's representatives at the local level. It provides guidance on scrutinising climate change funds during the different stages of the annual budget process, as well as an overview of the approaches that have been used by Parliamentary Committees to strengthen engagement with other formal and informal accountability actors (Nepal Legislative Parliament, 2017).

In **Pakistan**, a guide was designed to assist members of the Khyber Pakhtunkhwa (KP) Assembly to scrutinize the budget from a climate change perspective. The main areas covered include:

- How a provincial response to climate change can be enabled through domestic public finance
- The role of the KP Assembly in climate finance oversight

- Practical guidance for scrutinising the budget through a climate lens during each stage of the budget cycle (Khyber Pakhtunkhwa Assembly & UNDP, 2018).

In 2018, the Commonwealth Parliamentary Association developed a '**Climate Change and Small States Parliamentarian's Toolkit**'. It serves as a guide on how to become an effective actor in addressing the climate emergency. It is designed for Parliamentarians with no prior knowledge on climate change within small states and territories. It details the science behind climate change and the range of actions that can be taken to address it. It also provides an overview on the role of Parliamentarians (Commonwealth Parliamentary Association, 2020).

4.4.2. Ex-Post Green Audits

SAls can provide valuable information on the flow of climate resources and the extent to which actual expenditure reflects the budget. SAls may also be involved in ex-post evaluations of the efficiency, effectiveness and scope for improvement of government policies and programs (INTOSAI, 2010) although this may also be done by independent institutions, including academia.

SAls are independent, non-political bodies. They play a significant role in auditing government accounts and operations, which provide legislatures and society with the information required to hold governments accountable.

Very few countries conduct climate or green audits because sustained reporting on climate expenditure is rare and, where it is undertaken, is relatively new. We could not find any examples from Africa, or Latin America and Caribbean. In Asia-Pacific, Bangladesh carries out green audits, while Nepal has independent green audits for selected programs. In Samoa, green audits are limited to projects under the Ministry of Environment. In Europe and CIS, green audits are done in Denmark, and one is currently being undertaken in Kyrgyzstan.

Box 17: Climate performance audits in Bangladesh

Bangladesh: The Office of the Comptroller and Auditor General (OCAG), is an independent body mandated by the Constitution to audit the accounts of all government entities. This includes the utilization of climate finance by auditing:

- ✓ the government's response to climate change
- ✓ the operations of spending ministries and agencies to determine the economic, efficient and effective use of climate finance
- ✓ the implementation of the objectives set out in policy documents which address climate change and gender equality such as the BCCSAP, BDP, ccGAP and NAPA.

The audited accounts and audit reports are presented to Parliament, where they are scrutinised by the Public Accounts Committee (PAC). Following the examination of reports, PAC gives directives and recommendations for corrective action if necessary.

To strengthen the role of the OCAG in fulfilling its mandate, further efforts are required to embed climate change into the relevant standards, codes, manuals, and guidelines issued by the OCAG, followed by capacity building through training on climate performance auditing.

INTOSAI (2010) also stress the need for capacity building in SAls for climate audits, especially as specialist knowledge for auditing government policies and programs will differ between countries.

Source: (Bangladesh Ministry of Finance, 2020; INTOSAI, 2010)

4.4.3. CSOs and Public Participation

Strong climate finance accountability is most likely to be present when there are a range of civil society actors³² that engage with state and non-state actors such as legislatures, auditors, and the media. Civil society can play a catalytic role in improving the governance of climate finance by informing decision makers of the needs of people and communities, advocating for specific policies, monitoring the implementation of policies and programs, raising awareness and building capacity of communities on climate change and the budget process, and supporting government and oversight institutions (IBP & UNDP, 2018).

In Africa, climate accountability assessments have been done in Ghana (SEND Ghana, 2021) and Uganda (Civil Society Budget Advocacy Group, 2021). These studies showed that a lack of comprehensive data on climate expenditure in related countries, alongside insufficient capacity, limited the participation of civil society and the general public. In Ghana, capacity constraints were particularly significant for women's groups and farmer cooperatives who had low levels of knowledge on citizen's rights. Uganda has introduced an online portal³³ which contains information on the flow and use of climate finance as well as different financing mechanisms.

Box 18: CSOs and public participation in the budget process in Ghana

In **Ghana**, CSOs are represented on the National Climate Change Steering Committee (NCCSC), the highest level of climate-related decision making. The NCCSC meets twice a year and examines all activities in the country related to climate change. CSOs represented in the NCCSC, benefit from government funded capacity building.

The government also engages with CSOs through the KASA Initiative Ghana, which convenes roughly 130 members to pursue SDG 13 on climate change action. Meetings are held to discuss project and policy developments.

CSOs were invited to provide input into the NDC process during the NDC revision. CSOs have also been invited to provide input into the design of the climate change expenditure tracking tool. The platform allows CSOs to interact amongst each other, sharing information and ideas on climate change issues, through regular meetings. The media also participate, usually during efforts to disseminate reports.

Ghana has a CBT system which tracks climate expenditure at the national and sub-national level. However, data on climate expenditure is not publicly available, unless requested by making a physical visit to the designated office. This information is often technical and not easily understood.

To facilitate access and dissemination of climate change budget data, the Ministry of Finance is developing a dashboard which contains comprehensive information on public climate change finance alongside related reports. CSOs have been part of the process.

Funding for capacity-building and access to information largely limit the effectiveness of CSOs in promoting demand-driven accountability for climate change finance in Ghana.

Source: (SEND Ghana, 2021)

32 Civil society actors may include policy think tanks, sector based advocates, community based organisations, networks, and social movements (IBP & UNDP, 2018).

33 The online portal can be accessed <http://www.climatefinance.go.ug>

In Asia-Pacific, a climate accountability study was done for Bangladesh, India, Nepal, and the Philippines (IBP & UNDP, 2018). Findings showed that for all four countries, CSOs have varying degrees of access to planning and budget preparation processes. However, engagement is often by invitation only or exclusively for CSOs that are centrally located or have an established relationship with respective governments.

The study notes that Nepal has established village and municipal level planning processes, with a focus on climate change, that include participation from community-based and local CSOs. In Nepal and the Philippines, CSOs have formal opportunities to participate in government audits. Social audits which include direct citizen participation on the delivery of projects and services are done in Nepal, through village-level committees.

Nepal, Bangladesh and Cambodia publish a citizen's climate budget. The Philippines includes climate change in their comprehensive People's Budget. These make use of simple language and info graphs (UNDP, 2021a). In Nepal the report is available in both English and Nepali. In Cambodia, an NGO published the Citizen's Climate Budget based on the government's climate public expenditure review (World Bank, 2021a).

We could not find examples of any other countries that have published a citizen's climate budget. Uzbekistan, having experienced the role of the citizen's budget in facilitating public engagement and creating "demand for change" is considering producing a citizen's climate budget in the near future (UNDP & IIED, 2022).

For Latin America and Caribbean, there are still low levels of demand for information from CSOs and the public at the national level. However, it is becoming more common to have civil society actors engaged in climate processes. For example, in Colombia, consultations on the draft climate budget tracking methodology involved government institutions, academia, the private sector and CSOs. In Ecuador and Chile, CSOs have also been involved with developing national climate finance strategies (World Bank, 2021a).

Among civil society initiatives at the regional level, the Climate Finance Group for Latin America and the Caribbean (GFLAC) in partnership with the International Budget Partnership (IBP), launched a step-by-step public expenditure analysis guide to help non-governmental actors understand budgets (Guzman, 2022). The purpose of the guide is to promote participation and a more civic approach which allows different actors and sectors to get involved and participate in the budget process. It also aims to address issues around improving transparency for better decision making and effective participation.

In Africa, the Inclusive Budgeting and Financing for Climate Change in Africa (IBFCCA)³⁴ program has worked towards building the capacity of CSOs, so they can more effectively engage on climate change issues during the budget process (CABRI, 2022).

4.4.4. Lessons Learnt

Climate finance oversight by the Legislature is still weak in most countries, a reflection of overall challenges in budget scrutiny by the Legislature³⁵, particularly in developing countries. During Legislative scrutiny, climate change is still considered as a ministry of environment issue, and therefore analysed within this narrow lens. Developing mechanisms to ensure that climate change is addressed in the Budget or Appropriations Committee could ensure that it gets the priority it deserves during ex-ante and ex-post Legislative scrutiny (e.g., the Philippines, where the chair of the Senate Budget Committee is also the chair of the Climate Change Committee).

34 The IBFCCA program is a partnership between UNDP, CABRI, IIED and IBP funded by Sida.

35 The Legislature in developing countries face challenges in fulfilling their oversight role. This includes insufficient engagement in the planning process, limited formal authority and limited capacity to review the annual budget. This is further exacerbated by low levels of transparency (Wehner, 2007).

Climate change framework laws can help ensure that climate change is given priority by the government. Several countries have introduced laws which mandate the Executive to periodically report to the Legislature on progress made in reaching climate goals (e.g., Benin, Colombia, Denmark, Finland, and UK). However, these often do not address the action that should be taken by the Legislature in the event the Executive fails to comply with obligations (Higham et al., 2021).

The lack of publicly available data on climate change revenue and expenditure weakens climate transparency. Even in countries which have climate budget tagging systems in place, very few publish related data. When available, information can be technical and difficult to understand. Some countries have introduced online climate finance dashboards. However, information may at times be incomplete and difficult to comprehend. Nepal, Bangladesh and Cambodia have published citizen's climate budgets, which has helped to raise awareness on climate change for CSOs, the media and general public.

There are several ways in which evidence on data on climate change revenue and expenditure affects policy. If expenditure trends are declining (either in absolute terms or as a share of total expenditure) then data on this can help ministries and civil society to lobby for a reduction or reversal of the decline. Problems with the disbursement rate are usually common to climate and non-climate expenditure but there may be some circumstances where the climate risk create special challenges. Evidence from ex-post evaluation of effectiveness should feed into program and policy revision. There is, as yet, no international review of the way this has happened in different countries.

Climate finance accountability could be strengthened through better engagement between the government and formal and informal accountability actors. However, the role of accountability actors is hindered by a lack of comprehensive and easily accessible data, as well as low levels of capacity on climate change. Expanding the range of civil society actors that the government engages with may also ensure a more inclusive approach. Regional organisations and programs such as GFLAC in Latin America and the civil society engagement supported by the IBFCCA program in Africa can be instrumental in building capacity of civil society, allowing them to actively and effectively participate in climate budgeting.

4.5. Other Climate Policy and PFM Interfaces

The integration of climate change into PFM systems goes beyond the budget cycle, to include other climate policy and PFM interfaces. These are important for reaching climate mitigation and adaptation goals. This section covers the role of carbon pricing, sub-national governments, state owned enterprises (SOEs), off budget expenditure, and climate change funds.

4.5.1. Carbon Pricing

Governments globally are adopting long term strategies (LTSs) for carbon neutrality with net zero carbon targets, usually to be reached by 2050. If appropriately designed and combined with other climate policies, carbon pricing³⁶ can play a significant role by incentivising net zero carbon investments and ending fossil fuel investments. It does this by internalizing the cost of greenhouse gas emissions, thereby creating a financial incentive to mitigate emissions.

Depending on their design, carbon pricing instruments can generate revenue³⁷ that can be used to support investment in low carbon development as well as offset some of the distributional effects from the transition. Carbon pricing instruments, in the form of carbon taxes³⁸ and emission trading systems³⁹ (ETS), currently cover 21.5% of global greenhouse gas emissions, an increase from just over 5% in 2010 (World Bank, 2021c).

In Africa, South Africa is the only country with an operational carbon tax. In Asia-Pacific, Japan and Singapore have a carbon tax and one is scheduled for implementation in Indonesia in 2022. China, Korea and New Zealand have a national ETS. Australia had an ETS that was abolished in 2015 but may be reintroduced.

In Europe and CIS, several EU countries have a carbon tax, including Denmark, Estonia, Finland, France, Iceland, Ireland, Latvia, Liechtenstein, Luxemburg, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, and UK. Most of these were introduced in the 1990s and 2000s.

The EU⁴⁰ introduced the world's first and largest international Emissions Trading System (ETS) in 2005 and this has been through four different phases, with revisions to targets and regulations. It covers around 40% of the EU's greenhouse gas emissions (European Commission, 2022a). There is a national ETS in Germany, Kazakhstan, Switzerland and the UK.

In Latin America and Caribbean, there is a carbon tax in Argentina, Chile, Colombia, and Mexico. Mexico piloted an ETS in 2020. Canada has a carbon tax and ETS. At least 6 countries plan to introduce a carbon tax and 12 countries plan to introduce an ETS at the national level. Several sub-national governments⁴¹ have also implemented or plan to implement a carbon tax or ETS.

Carbon prices are low compared to the price recommended to limit global warming to 2°C, which ranges between USD 40-80/tCO₂e (High-Level Commission on Carbon Prices, 2017). Only 6 countries, all of which are in Europe and CIS, have a carbon price at or above the recommended price and cover just 3.76% of global emissions (World Bank, 2021c). Higher prices will be needed to limit global warming to 1.5°C. In recognition of this, the UK government recently adopted a shadow carbon price for public policy appraisal at 156-469 USD/tCO₂e.

There are also proposals for an international carbon price floor for the main global emitters (Parry, Black, & Roaf, 2021). More ambitious carbon pricing policies are needed if they are going to make a significant contribution to meeting the urgent 1.5°C climate change goals.

36 Explicit carbon pricing is a cost-effective policy tool, enacted by the government.

37 In 2020, globally USD 53 billion in revenue was generated from carbon pricing initiatives (World Bank, 2021c)

38 With a carbon tax, the government sets the price and lets the market determine emission reductions

39 An ETS can be in the form of cap-and-trade or baseline-and-credit. This involves the government setting emission targets.

40 The EU ETS operates in all EU countries plus Iceland, Liechtenstein, and Norway (EEA-EFTA states).

41 Countries where sub-national governments have introduced a carbon tax or ETS are: Canada (Alberta, British Columbia, New Brunswick, Newfoundland and Labrador, Northwest Territories, Nova Scotia, Prince Edward Island, Quebec, Saskatchewan), Mexico (Baja California, Tamaulipas, Zacatecas), China (Beijing, Chongqing, Fujian, Guangdong, Hubei, Shanghai, Shenzhen, Tianjin), USA (California, Massachusetts), Japan (Tokyo). It is also scheduled or under consideration in Spain (Catalonia), USA (Hawaii, Oregon, Pennsylvania, Washington), Mexico (Jalisco), Canada (Manitoba, Ontario), Russia (Sakhalin), China (Shenyang) (World Bank, 2021c).

Table 4.6: Global overview of carbon taxes and ETS

Africa	Carbon Tax	ETS	Other	Carbon Price^a
Cote d'Ivoire	UC			
Senegal	UC			
South Africa	2019			9.15
Asia-Pacific				
Australia		Abolished 2015		
Brunei			Undecided	
China		2021		10
Indonesia	Planned 2022	UC		
Israel	UC			
Japan	2012	UC		2.61
Korea		2015		15.89
Malaysia		UC		
New Zealand		2008		25.76
Pakistan		UC		
Singapore	2019			3.71
Thailand		UC		
Vietnam		UC		
Europe and CIS				
Austria	Planned 2022			
Denmark	1992			28.14
Estonia	2000			2.35
Finland	1990			72.82
France	2014			52.39
Germany		2021		29.36
Iceland	2010			34.83
Ireland	2010			39.35
Kazakhstan		2013		1.18
Latvia	2004			14.10
Liechtenstein	2008			101.47
Luxembourg	2021			40.12
Montenegro		UC		28.19
Netherlands	2021			35.24
Norway	1991			49.78

Poland	1990		0.08
Portugal	2015		28.19
Serbia		UC	
Slovenia	1996		20.32
Spain	2014		17.62
Sweden	1991		137.24
Switzerland	2008	2008	101.47
Turkey		UC	
UK	2013	2021	94
Ukraine	2011	UC	0.36
Latin America and Caribbean			
Argentina	2018		5.54
Brazil			Undecided
Chile	2017	UC	5
Colombia	2017	UC	5
Mexico	2014	2020 (pilot)	2.5
Uruguay	UC		
Canada	2019	2019	31.83

Note: UC is under consideration, a the carbon price is from January 2021

Source: Data from (World Bank, 2021c). Price Data for Mexico is from (Cardenas, Bonilla, & Brusa, 2021)

Box 19: China's emission trading system

China has committed to peak CO₂ emissions before 2030 and achieve carbon neutrality before 2060 (China National Development and Reform Commission, 2021). In line with these goals, China has introduced a national ETS, which started operating in 2021. It covers 30% of the country's emissions and 7.38% of global emissions, making it the world's largest carbon market (World Bank, 2021c).

The ETS regulates over 2,200 companies in the power sector which annually emit more than 26,000 tCO₂. There are plans to extend the scope of the system (International Carbon Action Partnership, 2021). The price is still low at about 10 \$/tCO₂e, suggesting that targets are still relatively modest.

4.5.2. Sub-national Governance and Climate Finance Reaching the Local Level

Sub-national governments are important players in addressing climate change adaptation and mitigation. Over 40% of greenhouse gas emissions may emanate from activities over which sub-national governments exert regulatory and taxing authority (Martinez-Vazquez, 2021). In addition, addressing climate change adaptation is largely location specific, as climate change vulnerability is partly dependent on specific geography, climate, and socio-economic conditions, making sub-national governments best placed to address climate change action (UNDP, UNCDF, & UNEP, 2013). They are already responsible for significant amounts of public expenditure, estimated to range from an average of 10% in low income economies to 40% in high income countries (World Bank, 2021a).

UNCDF, UNDP and UNEP (2013) developed a framework for an effective response to climate change at the local level known as Local Climate Adaptive Living Facility (LoCAL), which has supported local governments in many countries in Asia-Pacific and Africa. It recognises that climate finance should be aligned with established expenditure responsibilities, which are determined by a country's approach to fiscal, administrative and political decentralization⁴².

The ability of sub-national governments to raise revenue through taxes and fees is limited, making them dependent on transfers from the central government, also known as intergovernmental transfers. The effects of climate change will differ depending on geographical context, impacting different regions either negatively or positively, which may alter the size and geographical distribution of intergovernmental transfers. These can be in the form of general purpose grants (budget support where sub-national governments have complete autonomy over the use of funds) or specific purpose grants which are conditional or targeted (UNDP, 2015c).

Conditional grants can be used to incentivise sub-national governments to increase their efforts to reach environmental and climate change goals. For example, the use of ecological fiscal transfers (EFTs) in China, India, Brazil, France, and Portugal, as outlined in Box 20.

Box 20: The use of intergovernmental transfers to incentivise climate action

A subset of intergovernmental transfers are Ecological Fiscal Transfers (EFTs). They can be used to compensate sub-national governments for the costs of conserving ecosystems, as well as the opportunity costs forgone from pursuing alternative revenue generating activities.

EFTs are an innovative approach to financing conservation and can incentivise sub-national governments to provide more ecological conservation thereby contributing to the fight against climate change.

The countries with an established EFT are outlined below.

Brazil: The first EFT was introduced in 1991, when the state of Parana added protected areas for biodiversity conservation and watershed protection to its 'Imposto sobre Circulação de

Mercadorias e Serviços' (ICMS) formula for transfers to municipalities. Since then, EFTs have spread to 18 states in Brazil. Different ecological criteria are used across states, such as land area under protection, indigenous land, forest area, waste management, and fire control. The amount as a percentage of intergovernmental transfers also varies across states from 1% to 20%. EFTs led to the tripling in municipal protected areas.

China: Established an EFT in 2010 and includes general purpose fiscal transfers for National Key Ecological Function Areas (NKEFA). It contains bonus payments and fines which are determined by the performance of local governments, based in part on an ecological index. It is intended to compensate county level governments for expenditure made and encourage the promotion of nature conservation in areas with vulnerable biodiversity. It accounts for 0.95% of intergovernmental transfers. The EFT had a positive effect on some aspects on environmental quality in China. There are two additional types of EFTs in China.

India: EFTs were introduced in 2015, when the areas of high or moderate forest density was added to the distribution formula from the national to state level, accounting for 7.5% of transfers. It was meant to compensate states for forgone tax revenue due to forest cover while also acknowledging the ecological benefits of forests. In 2020, the ETS was extended to include forests and ecology, and the amount increased to 10%. India makes reference to the EFT in the NDCs as contributing towards their forest cover goals.

⁴² There is wide variability on the autonomy and authority that sub-national governments have for responding to climate change, which is determined by the decentralization and devolution of fiscal, administrative and political power.

France: In 2007, two ecological criteria were added to the 'dotation globale de fonctionnement' (DGF), an instrument for the distribution of funds from the central to local government. It was intended to compensate municipalities with territory under strict protection and subject to restrictions over land use. Initially, only 150 municipalities of 35,000 were eligible to receive related funding. In 2019, the EFT was extended to include Natura 2000 sites, increasing the number of eligible municipalities to 1,120. EFTs account for 0.02% of intergovernmental transfers.

Portugal: In 2007, Portugal amended its Local Finances Law (LFL) to include an indicator related to the area and percentage of land under nature protection. It was introduced to compensate municipalities for lost revenue resulting from protected areas. They account for 2.5 to 2.7% of intergovernmental transfers. EFTs may have contributed to the increase in the number of regional and local level protected areas.

EFTs have been piloted or are under development in **Uganda, Indonesia and Mongolia**. They have also been proposed by several other European countries.

Source: (Busch et al., 2021)

Between 2003 and 2016, less than 10% of climate finance from global climate funds was dedicated to local action (Soanes, Rai, Steele, Shakya, & Macgregor, 2017). Of the USD 5.6 billion of international public climate finance going to the energy sector between 2006 and 2015, just over 8% has been allocated for decentralised energy access (Rai, Best, & Soanes, 2016).

Climate finance has been failing to get money where it matters. Beyond quantity, there is also a significant need to improve the quality of climate finance provided. Most climate finance is directed to short-term interventions by distant 'experts', accountable to donors and aid agencies rather than to poor and vulnerable communities (Soanes, Shakya, Walnycki, & Greene, 2019). This led to the development of the Principles for Locally Led Adaptation, outlined in Box 21.

Box 21: Decentralisation of climate finance and the Principles for Locally Led Adaptation

The Principles for Locally Led Adaptation were developed as a response to concerns regarding the quantity and quality of climate finance. They are intended to guide the adaptation community as it moves programs, funding, and practices towards adaptation that is increasingly owned by national and local partners. The principles are as follows:

- ✓ Devolving decision making to the lowest appropriate level
- ✓ Addressing structural inequalities faced by women, youth, children, disabled, displaced, indigenous peoples, and marginalised ethnic groups
- ✓ Providing patient and predictable funding that can be accessed more easily
- ✓ Investing in local capabilities to leave an institutional legacy
- ✓ Building a robust understanding of climate risk and uncertainty
- ✓ Flexible programming and learning
- ✓ Ensuring transparency and accountability
- ✓ Collaborative action and investment

The principles were developed as a collaboration with local, national, and global partners. 70+ organisations have endorsed the principles. Through a community of practice, these organisations will share progress and lessons learned to enhance understanding of what is needed for effective, equitable locally led adaptation.

Source: (Soanes et al., 2021)

Most of the entry points for climate responsive budgeting identified along the budget cycle in Figure 3.1 are also applicable to sub-national budgets (IMF, 2021a). Sub-national governments have already started to implement climate responsive budgeting.

Increasingly, sub-national governments have started to develop climate relevant strategies and plans. Many CPEIRs have included some work on sub-national expenditure reviews, reviewing institutional responsibilities, and/or analysing expenditure in a few pilot locations, e.g., in Bangladesh, Cambodia, Pakistan, Thailand, Vietnam, and Malawi.

In a number of Asia-Pacific countries, CPEIRs have been undertaken at the sub-national level, e.g., in India (states of Bihar, Chhattisgarh and Kerala), Indonesia and Nepal. In Ecuador a CPEIR was completed for the province of Manabí and Azuay. In Asia-Pacific, local CCFFs were developed for Bangladesh and Pakistan.

Several countries have also introduced climate budget tagging at the sub-national level. This includes Ghana, Kenya, Bangladesh, Nepal, Pakistan, Philippines, Ecuador, and Honduras. Sub-national CBT is being piloted in South Africa, Nigeria, and Indonesia. Several more countries have plans to extend their budget tagging system to sub-national governments. Kenya has established county climate funds, to help facilitate access to climate finance for local governments.

4.5.3. State Owned Enterprises

In many countries, state owned enterprises (SOEs) dominate operations in some climate-relevant sectors such as energy, transport, water, and agriculture. They account for large amounts of public expenditure and may benefit from subsidies, tax exemptions, subsidised or fixed price inputs, concessionary financing and guarantees from the government (World Bank, 2020a).

Limited attention to date has been given to the role of SOEs in addressing climate change mitigation and adaptation. There is scope to extend climate budget tagging systems to include SOEs and some countries have started to do this. For example, Ecuador, Pakistan, and Philippines tag climate relevant transfers from the central government to SOEs (World Bank, 2021a). South Africa is currently working on a pilot tagging system for SOEs.

4.5.4. Off-Budget Expenditure and National Climate Funds

In addition to domestic climate public finance, there are multiple other sources, such as international donors and lending agencies. Recent years have seen the proliferation of multilateral and bilateral international public climate finance funds. The Climate Fund Inventory (OECD, 2015a) has as many as 91 international climate funds⁴³.

There are also various modalities through which funds can be accessed. Through direct budget support⁴⁴, international finance is disbursed to the national treasury and allocated through the budget process. Channelling funds through the budget could be effective for addressing climate change adaptation, due to the integrated nature of adaptation and sustainable development, i.e. by increasing the resilience to climate change of routine development investments (Allan, Bahadur, Venkatramani, & Soundarajan, 2019). Currently there is very little experience with budget support related to climate change, however, this is starting to change with the EU, World Bank and IMF increasingly adopting this approach.

The EU is the largest provider of budget support and in 2020 provided support for reaching SDG 13 to Bhutan and Dominica, although support for climate action is integrated in other programs (European Commission, 2020). In theory, budget support is a favoured option. However, in practice, only 24% of EU aid comes in the form of budget support (Bhandary, 2022), which reflects political preferences for donor visibility, challenges in attributing measurable and verifiable impacts linked to climate change and concerns over fiduciary risk⁴⁵ (UNDP, 2015c).

43 Of the 91 funds, 74% are multilateral, 21% bilateral, 2% are multilateral private, 1% are private and 2% are donations (OECD, 2015a).

44 Budget support can be general or sector specific.

45 The UK government defines fiduciary risk as, 'the risk that funds are not used for the intended purposes; do not achieve value for money; and/or are not properly accounted for. The realisation of fiduciary risk can be due to a variety of factors, including lack of capacity, competency or knowledge; bureaucratic inefficiency; and/or active corruption' (DFID, 2011).

This is particularly relevant for developing countries which are often characterised by weak control and reporting systems. As a result, significant amounts of international climate financing flows ‘off budget’. The main modalities for disbursement are either through a projects-based approach where funds are disbursed directly to agencies responsible for the implementation of specific projects or through extra budgetary funds (e.g., national climate funds), which have their own governance arrangements in place.

Extra-budgetary funds and project-based approaches should still use national PFM systems, ‘to the maximum extent possible’ (UNDP, 2015c). For instance, projects to be funded can be chosen from shortlisted/prioritised projects in the national planning process. Revenue and expenditure can make use of the budget classification system and be recorded in budget documentation. Such steps can help to reduce the duplication of efforts and ensure complementarity with budgetary allocations.

It should be noted that domestic public finance from the budget can also be channelled into expenditure that is not monitored in the budget, which may include earmarked funds (which may be particularly useful for countries without a medium term budgeting framework⁴⁶), transfers to state owned enterprises and implicit and explicit contingent liabilities (World Bank, 2014b).

National climate funds are a tool that, ‘supports countries in managing their engagement with climate finance by facilitating the collection, blending, coordination of, and accounting for climate finance’ (Flynn, 2011). By establishing climate funds, governments can ensure that climate finance is used for climate action, blended with other sources of funding, and channelled to the intended beneficiaries at the national and local level. Some of the advantages and disadvantages of national climate funds are outlined in Figure 4.10.

Figure 4.10: National climate funds

Advantages of National Climate Funds	Disadvantages/Concerns with National Climate Funds
<ul style="list-style-type: none"> • Pooling of international climate finance • Blending of international, national, public and private finance • Ensure the earmarking of government funds for climate mitigation and adaptation • More easily channel funds to intended beneficiaries at national or local levels. This includes reaching marginalized communities, women and vulnerable individuals. This may not always be the case and the budget may be more effective at channelling funds to intended beneficiaries. 	<ul style="list-style-type: none"> • May compromise the integrity of the resource allocation process e.g partially duplicating budget expenditure, allowing lower priority projects to be approved, undercutting national policy on levels of subsidisation, drawing scarce skills away from core budget functions, increasing dependence on stop-start project modalities and confusing the emergence of clear institutional responsibilities for coordination • May be associated with low levels of transparency and accountability as extra budgetary funds are at times associated with the dilution of accountability and control

⁴⁶ There is limited scope in the annual budget for adjusting resource allocations in line with emerging policy priorities such as climate change (World Bank, 2014b). This is particularly true in the current post COVID-19 macroeconomic environment where fiscal consolidation may be required as governments reach unsustainable levels of debt (World Bank, 2022).

In practice, most of the government’s annual budget is already committed to things such as salaries, debt repayments, ongoing capital investments, the provision of priority good and services like education and health, etc. Medium term budgeting can offer greater flexibility for governments to alter spending patterns over time, as revenue increases and existing commitments change.

It can also provide predictability for spending ministries on the availability of funds for priority programs and projects (UNDP, 2015c). In the absence of a mid-term budgeting framework, governments may opt to make use of national climate change funds for domestic climate resources, particularly for programs or projects that cover multiple years.

Advantages of National Climate Funds

- Platform for multi-stakeholder coordination
- For countries without a medium term budgeting framework, it provides the ability to sustain funding beyond the annual budget cycle
- Providing efficient support for a temporary boost to build awareness, information and capacity building

Disadvantages/Concerns with National Climate Funds

- Setting up and managing national climate funds can have long start up times, relatively high transaction costs and distract from the more strategic process of integrating climate into the whole budget process

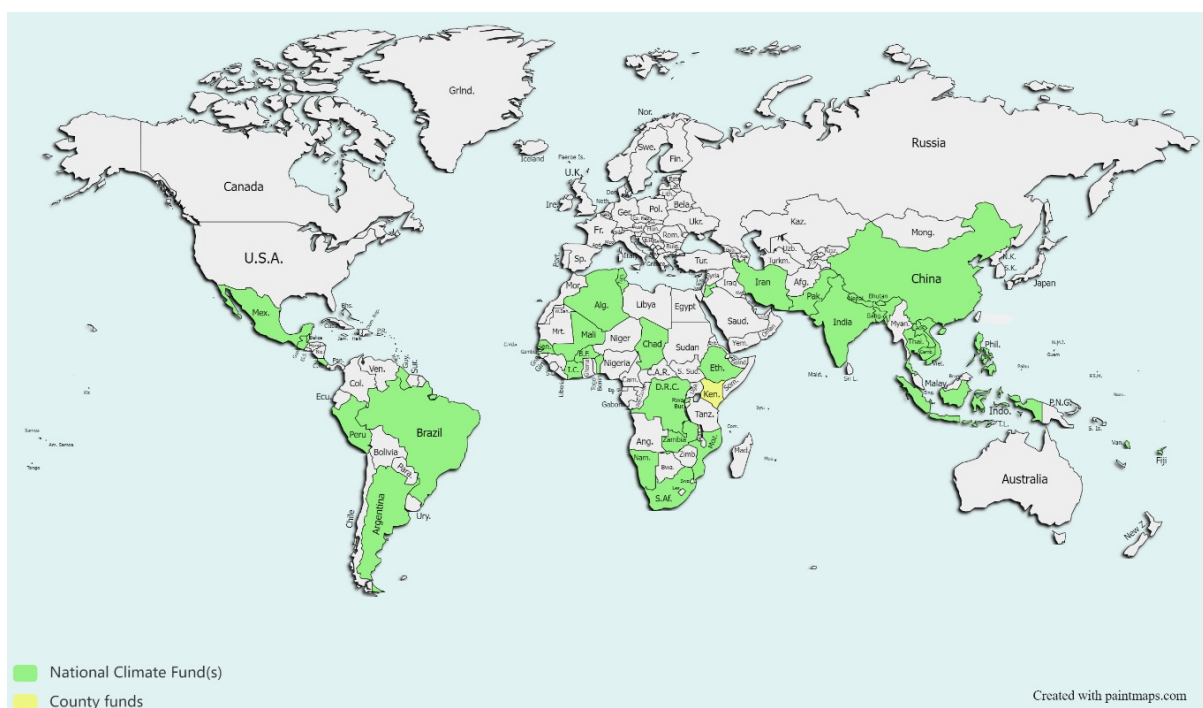
Source: adapted from (Irawan, Heikens, & Petrini, 2012)

As shown in Figure 4.11, at least 16 countries in Africa have a national climate change fund. Kenya has county level funds. 21 countries in Asia-Pacific have a national climate change fund and 10 countries in Latin America and Caribbean.

Some countries such as South Africa, Bangladesh, India, Indonesia, and Brazil have multiple climate change funds.

Majority of the funds, 71% are funded from both domestic and external sources. 16% of funds are funded from domestic sources only, and 13% have only external funding. There is wide variability in the scope, mandate, legal basis, institutional arrangements, and financing modalities of related funds. For a full overview per country, please see *Appendix G*.

Figure 4.11: National climate change funds in developing countries



Note: the data presented is limited to developing countries.

Our stock-take on national climate funds did not include Europe and other advanced economies as the landscape for climate change funds is more complex. Some funds provide climate finance for international programs, e.g., Denmark’s Danish Climate Investment Fund (KIF); Finland’s Finland-IFC Blended Finance for Climate Program; France’s French Development Agency (Agence Française de Développement); Germany’s International Climate Initiative (Internationale Klimaschutzinitiative IKI); and, the UK International Climate Fund. On the other hand, some funds are dedicated to domestic projects, e.g., Austria’s Climate and Energy Fund; Finland’s Finnish Climate Fund (Ilmastorahasto Oy); and, Iceland’s Icelandic Climate Fund).

In addition, there are funds that dedicate climate finance to both domestic and international projects, e.g., the UK’s Green Investment Group (formerly Green Investment Bank). A comprehensive picture of national climate change funds in advanced economies requires further review.

4.5.5. Debt Instruments

Debt instruments are mechanisms by which the financing of the fiscal deficit can be used to promote climate change objectives. Most developing countries are now at or close to their debt ceiling, especially after COVID-19 (World Bank, 2022), and there is little or no scope for increasing debt. This leaves them with two instruments: debt restructuring or debt swaps. Countries which have access to international bond markets, or improved their credit rating, can make use of various types of bonds related to climate.

There is over 30 years of experience with debt swaps, which usually require a bilateral donor to write-off part of a loan due by a developing country to a multilateral institution (Steele & Patel, 2021). Most early examples were ‘debt for nature swaps’, often related to forest conservation (e.g., in Jamaica, Bangladesh, Belize, and El Salvador).

UNDP estimated that debt for climate and nature swaps took place in 39 countries between 1985 and 2015, with a value of USD 2.6 billion (UNDP, n.d). The large majority (93%) of the debt swaps were in the public sector. The US funded 53%, with Switzerland and Germany funding 16% and 13% respectively, and smaller contributions from other European countries.

About three quarters of the debt swaps occurred before 2000 and the reduction since then has been caused by the availability of other debt relief schemes, including the heavily indebted poor countries (HIPC) initiative. Recently, there has been growing interest in the use of debt for nature swaps. The Seychelles agreed a debt swap in exchange for commitments on marine protection in 2018.

There is now the opportunity to learn from this experience and scale up comprehensive large scale debt relief linked to improved climate and nature outcomes, as the HIPC debt relief package was linked to poverty reduction and increases in social spending. This scaling up can be achieved by a strategic approach involving all creditors, channelling debt relief through the budget to ensure greater national accountability, and linking debt payments to climate and nature key performance indicators (KPIs). These KPIs would be drawn from the NDC and National Biodiversity Strategy and Action Plan (NBSAP) and related national strategies and plans.

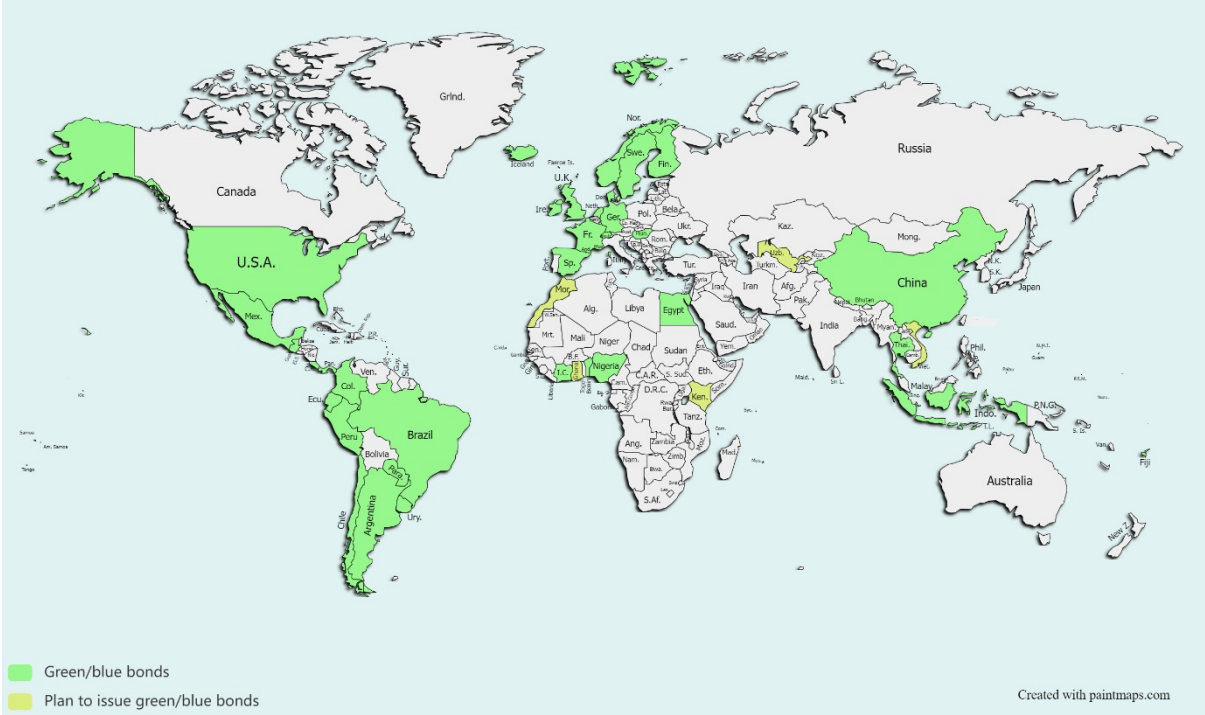
There has been rapid growth of various types of green bonds in the private sector, which offer reduced costs of borrowing (usually through concessions on interest rates) in exchange for commitments on climate and nature⁴⁷. These include: ‘use of proceeds’ bonds, where some or all the funds are devoted to agreed climate and nature expenditure; and various types of impact bonds, where there is no specification on how funds are used but the application of concessions is dependent on achieving agreed impacts, usually measured by KPIs.

Many governments have issued climate bonds for public (or sovereign) debt. In Africa, Benin, Cote d’Ivoire, Egypt, and Nigeria have issued sovereign green bonds. Seychelles has issued blue bonds. In Asia-Pacific, related countries include China, Fiji, Indonesia, and Thailand. At least 15 countries in Europe and CIS have issued green bonds and 13 countries in Latin America and Caribbean, as shown in Figure 4.12.

47 For more information, please visit the Environmental Finance Bond Database, <https://efdata.org>

Chile has recently issued a USD 2 billion green bond, with concessionary interest rates linked to reductions in greenhouse gas emissions. The Chile bond was four times oversubscribed, which is an indication of the interest in financial markets. Several other countries have plans to introduce green bonds in the near future.

Figure 4.12: Countries with sovereign green/blue bonds



4.5.6. Lessons Learnt

Carbon pricing policies will need to be more ambitious if they are going to make a significant contribution to meeting climate goals. Although carbon pricing policies date back to the 1990s and early 2000s in many European and CIS countries, it is a new and emerging area globally, with several countries in Africa, Asia-Pacific, Latin America and Caribbean planning to introduce related reforms in the near future.

Carbon prices are increasing in some countries, but they remain significantly lower than the recommended price required to keep global warming to 1.5°C. When combined with other climate policies, carbon pricing can be an effective tool to help incentivise investment in low carbon development and generate revenue which can further support an equitable and inclusive low carbon transition.

Sub-national governments are important in addressing climate change action and funds are more likely to reach them by implementing the Principles for Local Climate Action. Sub-national governments may be best placed to respond to climate change adaption due to the location specific nature of climate vulnerability. They are usually the first line of response during a climate-related disaster and are generally responsible for governing land use activities.

Many of the entry points for climate responsive budgeting identified at the national level are also applicable at the sub-national level. Some sub-national governments are already integrating climate change into their planning processes. CPEIRs have been conducted at the state (India), provincial (Indonesia), and district (Nepal) levels.

Some sub-national governments tag their climate relevant expenditure. However, the complexity of integrating climate change effectively into budgets poses an even greater challenge for local government than for the central government.

Fiscal transfers to sub-national governments can be used to incentivise and support climate change adaptation and mitigation. Ecological fiscal transfers (EFTs) usually consist of amending the distribution formula for transfers from the national to sub-national government, to include ecological criteria. They have successfully been applied in Brazil, China, India, France, and Portugal. Several more countries have piloted, designed or plan to introduce EFTs in the near future.

International public climate finance should be channelled through the budget process, which ensures the efficient allocation of resources to meet national priorities. Where this is challenging due to fiduciary risk and international climate finance flows off-budget this must be addressed with nationally driven reform processes and coordinated external support. Where extra-budgetary funds or a projects-based approach is initially used, efforts should still be made to use national PFM processes, which can increase coordination and promote a ‘comprehensive national response to climate change’ (UNDP, 2015c).

National climate funds (NCFs) can be useful in funding time-bound programs that build awareness, information and capacity, and that do not fit easily within the national budget. There are, however, challenges in ensuring that NCFs do not compete with the national budget. There has been steady growth in the number of countries establishing national climate change funds. These vary in their scope, financing modalities and institutional setup. However, most national climate change funds make use of both domestic public climate finance and international climate finance.

Large scale debt for nature swaps and climate related bonds offer potential for additional climate change finance. Debt swaps will be particularly important in the post COVID-19 period, which is characterised by high debt levels in many countries. Governments have already raised significant amounts of climate finance through the issuance of Green or SDG bonds, and several more countries have plans underway to introduce sovereign green bonds in the near future.

However, many developing countries are at or close to their debt ceilings and climate related bonds do not generate additional fiscal space, beyond that provided by concessionary finance, usually in lowered interest rates, which are relatively small. They do, however, raise the profile of climate change in fiscal policy and draw attention to the importance of key performance indicators related to climate change.

Limited consideration has been given to the role of SOEs in reaching national climate change goals. Given their size and dominance in some climate relevant sectors, such as energy, transport and water, this is a promising area for reforms.

4.6. Sequencing of Reforms

Every country has followed a different path in the sequencing of climate public finance reforms. This section describes 5 typical pathways. No country fits any pathway exactly, but they do present some general patterns and facilitate a discussion about the different approaches. The Table 4.7 below aims to allocate each country to the pathway where it best fits.

The pace of reform varies, but the countries that have achieved the most comprehensive coverage of reforms have taken almost a decade to reach that point.

Table 4.7: Countries following indicative typical pathways

Pathway	Examples
Preparatory (CPEIR)	<ul style="list-style-type: none"> • Most African countries that have embarked upon climate budgeting reforms • Several Indian states • Most Pacific countries • Armenia and Georgia • El Salvador
Stepped (CPEIR, CBT)	<ul style="list-style-type: none"> • Pakistan, Philippines, Vietnam, Samoa • Ghana, Ethiopia, Kenya, Uganda • Chile, Columbia, Ecuador, Peru, Honduras, Nicaragua
Comprehensive (CPEIR, CBT, CCIA, CCFF)	<ul style="list-style-type: none"> • Nepal, Bangladesh, Cambodia, Indonesia
Performance focused (CPEIR, CCIA)	<ul style="list-style-type: none"> • Thailand, Maharashtra (India)
Tagging/reporting led (CBT)	<ul style="list-style-type: none"> • Denmark, Finland, France, Ireland, Italy, Moldova, North Macedonia • Mexico • South Africa, Nigeria

Note: the pathways are only indicative, and few countries fit exactly into any of the pathways.

Preparatory Pathway. In the preparatory pathway, countries have a climate strategy and have conducted a CPEIR. Some preliminary work may have been to estimate the costs involved to implement the strategy, but this does not yet extend to clear financing plans that match the needs.

Stepped Pathway. The stepped approach has been followed by many countries, although few have yet followed it through to regular and systematic reporting and performance measurement. Some countries in this pathway already have plans for future reforms that would lead to a comprehensive pathway. The example of Kenya is given in Box 22.

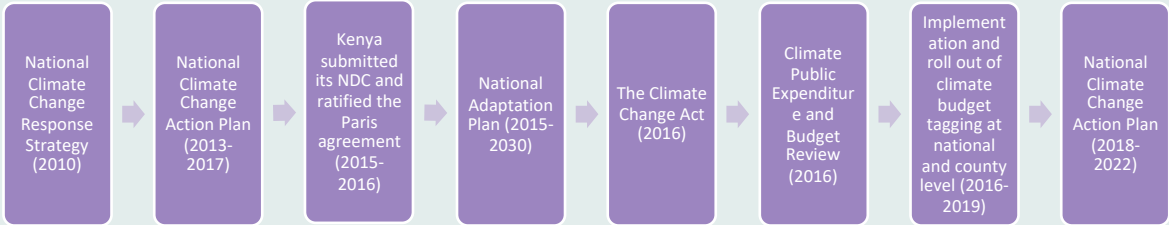
- The process starts with a CPEIR, which reviews the full range of institutions involved in climate change and illustrates at least one option for classifying expenditure, along with the expenditure trends over recent years. CPEIRs are updated every 3 to 5 years.
- The CPEIR is followed by work on CBT, starting with a design study, followed by piloting in a few core line ministries. This is followed by mandatory adoption, including revisions to the budget circular, although few countries following the stepped pathway have yet reached this point.
- Once government is confident in the CBT, there is some regular reporting for government, the legislature and civil society. Few countries have reached this point on a regular and systematic basis.

Box 22: Sequencing of reforms in Kenya, a stepped pathway

Kenya has established a good policy and legal framework which supports the mainstreaming of climate change into national and county level planning and budgeting processes. The first national climate change document introduced in 2010, was the National Climate Change Response Strategy, operationalised by the National Climate Change Action Plan (2013-2017). This was subsequently followed by the National Climate Change Action Plan (2018-2022). The latter is aligned with the country’s long term development plan, Kenya Vision 2030, implemented through a series of 5-year medium term plans.

Climate change has been mainstreamed into the medium-term plans, which form the basis for annual budgets and action plans. Climate change has also been integrated into sectoral policies and plans in key sectors such as agriculture, energy, water and transport (Kenya National Treasury and Planning, 2016).

The Climate Change Act of 2016 provides the legal and institutional framework for climate change action in Kenya, applicable to all sectors of the economy for national and county governments. It set out the establishment of a Climate Change Council, chaired by the President and with representation from the National Treasury and the Ministry of Environment and Climate Change, amongst others. Key documents and initiatives for climate responsive budgeting are shown in the Figure below.



The list of policies and initiatives is not exhaustive

In 2016, Kenya conducted a Climate Public Expenditure and Budget Review, to identify areas for strengthening climate responsive budgeting and to provide an estimate on climate finance flows. This was followed by the implementation and roll out in 2016 to 2019 of climate budget tagging at the national and county level (CABRI, 2021a). The main objective of the climate tagging framework is to track climate finance flows and climate related expenditure, with the intention of supporting resource mobilisation.

A new analytical section, ‘Segment 8’ has been introduced to the Standard Chart of Accounts (SCOA), as part of the Integrated Financial Management Information System (IFMIS) to allow for extended reporting of climate-related expenditure. Plans are currently underway for the roll out of ‘Segment 8’, which will help to improve climate expenditure reporting and the use of related information for decision making (Kenya National Treasury and Planning, 2021).

Since 2020, the budget circular identifies climate change and disaster risk reduction as key priorities and outlines a series of priority adaptation and mitigation investments that should be reflected in budget submissions by spending ministries. The circular also provides instructions for recording related expenditure.

In addition, climate change is considered by the government in public investment management. Since 2015, ministries, departments and agencies are required by law to incorporate climate change in all the programs and activities undertaken to evaluate the effect, impacts and challenges posed by climate change (CABRI, 2021a).

Despite adaptation being prioritised in national plans, just 30% of government climate expenditure was on adaptation while 50% was on mitigation and 20% had dual adaptation and mitigation benefits (Kenya National Treasury and Planning, 2021). Within the mitigation sector, most investment went towards the renewable energy sector while other key sectors such as agriculture, forestry and land use, transport, and water management remained underfunded.

The nominal budget allocation to climate change in 2020/2021 was 3% of GDP, increasing by 23% from the 2019/2020 budget (CABRI, 2021a). However, a more comprehensive review is needed to see the trend over time and the value as a share of total government expenditure.

Comprehensive Pathway. The comprehensive approach includes the elements of the stepped approach, with two other initiatives.

- A CCFF is prepared which describes not just the costs of implementing the strategy but the expected sources of financing, including an assessment of what is possible from within the budget.
- There will also be some work on CCIA with line ministries, which may happen in parallel with the CBT. The experience of Indonesia and Bangladesh is provided in Box 23.

Box 23: Sequencing of reforms in Indonesia and Bangladesh, a comprehensive pathway

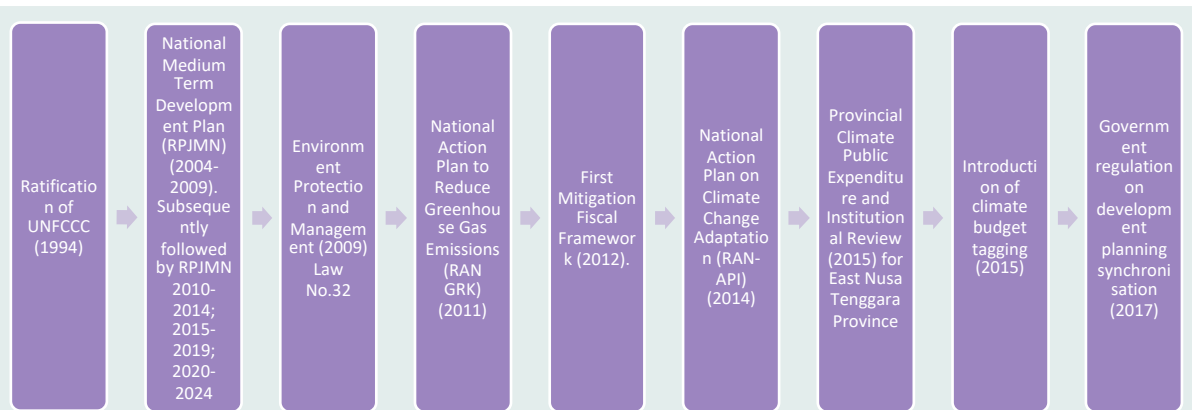
Indonesia was one of the first countries to ratify the UNFCCC in 1994, setting its first climate change mitigation targets in 2009. This was followed by more ambitious targets in 2015 following COP21, including the reduction of greenhouse gas emissions by 29% with domestic resources and 41% with international support by 2030 (Indonesia Ministry of Finance, 2020). To support the achievement of climate related targets, the policy and legal framework was established which covers central and sub-national governments, as the latter plays a vital role in managing climate finance given Indonesia's high degree of decentralisation (Indonesia Ministry of Finance, 2012).

The Environment Protection and Management Law of 2009 requires the central and sub-national governments prepare Environmental Protection and Management Plans that include climate change mitigation and adaptation. It also requires the preparation of a Strategic Environmental Assessment which includes vulnerability and adaptation to climate change, which has been instrumental in preventing pollution and environmental damage (Indonesia Ministry of Finance, 2020).

Indonesia's climate mitigation policy framework is guided by the 2011 National Action Plan to reduce greenhouse gas emissions (RAN GRK). Sub-national governments play an important role in the implementation of RAN GRK through local action plans known as RAD GRKs which are prepared for all provinces (Indonesia Ministry of Finance, 2012).

The first mitigation fiscal framework was developed in 2012 to provide guidance on financing the RAN GRK. It provides an overview of the institutional arrangements in place and public financial reforms that have been introduced to manage climate finance. It also provides cost estimates and possible sources of finance. The second fiscal framework is currently under development and will encourage harmonisation between different sources of funding and improve accountability in the management of climate finance for adaptation and mitigation (Indonesia Ministry of Finance, 2019b). In 2014, the National Action Plan on Climate Change Adaptation was issued, providing the main policy framework for adaptation action. Provincial and city governments are mandated to prepare strategies and action plans for climate change adaptation (Indonesia Ministry of Finance, 2020).

Indonesia is committed to meeting its climate change targets and reducing gender inequality. A more integrated approach is supported by the 2017 government regulation on the synchronization of the National Development Planning and Budgeting Processes. Prior to this, climate change and gender were considered separately in the National Medium Term Development Plans. The Figure below shows the key policies and initiatives for climate responsive budgeting.



The list of policies and initiatives is not exhaustive.

Since 2015, climate budget tagging for mitigation action has been in place for the national budget. This was extended in 2017 to include climate adaptation action (Indonesia Ministry of Finance, 2020). It includes a detailed assessment of the climate benefits of projects carried out by line ministries (Indonesia Ministry of Finance, 2019a). Guidelines are issued to spending ministries and agencies for the categorization of outputs into budget themes, including climate change mitigation, adaptation, and gender responsive climate budgeting.

Tagging on thematic areas is done using the electronic-based planning and budgeting information system, KRISNA. It supports planning, budgeting and performance reporting processes (Indonesia Ministry of Finance, 2020). In 2020, CBT was piloted in 11 sub-national governments (Indonesia Ministry of Finance, 2021).

Indonesia is one of the first countries to introduce the Islamic green bond, known as Green Sukuk. This was facilitated by climate budget tagging, which is used to identify potential projects and track related expenditure. Line ministries utilizing the proceeds are required to track, monitor and report to the Ministry of Finance on the environmental benefits of eligible green projects (Indonesia Ministry of Finance, 2019a). Indonesia's Green Sukuk has received a medium green assessment from the Centre for International Climate and Environmental Research (CICERO).

Between 2016 and 2018, climate change expenditure in the national budget grew by 51.6%. Despite this positive trend, in 2018 climate change funding was just 38% of the estimated annual need. Majority of the budget (55%) is allocated towards mitigation action, concentrated in the energy and transport sectors (Indonesia Ministry of Finance, 2019b).

Bangladesh conducted a Climate Public Expenditure and Institutional Review (CPEIR) in 2012 to assess the institutional and financial management arrangements concerning climate change. The review recommended the adoption of a Climate Fiscal Framework (CFF), which was then developed in 2014 and further updated in 2020. A Climate inclusive Medium-Term Macroeconomic Framework (MTMF), which uses a macroeconomic model embedded with climate change variables, was finalized in 2019.

The Budget Call Circular provides strategic directions to the sectoral ministries for the preparation of Medium Term Budget Framework (MTBF). It has been made climate inclusive by linking the major climate policies and strategies, such as Bangladesh Climate Change Strategy and Action Plan (BCCSAP), Country Investment Plan for Environment, Forest and Climate Change (CIP-EFCC), Bangladesh Delta Plan (BDP 2100). All climate-relevant ministries prepare their MTBFs following the guidance provided in the Budget Circular.

Bangladesh has also developed a Climate Public Finance Tracking Methodology to track climate allocations subsumed in the budgets of sector ministries. This allows the mapping of climate issues with the Budget and Accounting Classification System (BACS) and the Integrated Financial Management Information System (IFMIS), locally known as iBAS++.

In 2018, Bangladesh prepared its first climate budget report “Climate Protection and Development: Budget Report, 2017-18”. Climate Budget Reports are now published annually and presented before the Parliament. The annual report while capturing climate-relevant allocations also includes actual expenditure information to compare the performance of each ministry in terms of spending. The report tracks the progress of key national climate investment plans against the financing targets, for example, Nationally Determined Contribution (NDC), CIP-EFCC, BDP-2100.

A Local Climate Financing Framework has been developed to embed climate dimensions at the local level planning and budgeting and to cascade the national level CFF to the grassroots. This is intended to identify the local needs of the communities exposed to climate vulnerabilities and address them by allocating additional resources. Support was also provided to develop a methodology to track and document the climate change-related budget and investments in 72 Union Parishads in the last 5 years with a focus on gender and human rights perspective. The information collected from the 72 Unions generated Union level CC budget reports.

To reduce the fiduciary risks, the climate finance governance system has been strengthened and a new audit protocol for Climate Performance Audit (CPA) has been introduced as part of the government audit conducted by the Office of Comptroller and Auditor General (OCAG).

Performance Focused Pathway. Many governments have included initiatives that focus on the performance of climate expenditure in delivering mitigation and/or adaptation. However, two governments (Thailand and the Indian state of Maharashtra) have considered this to be an early priority, before work on tagging or financing.

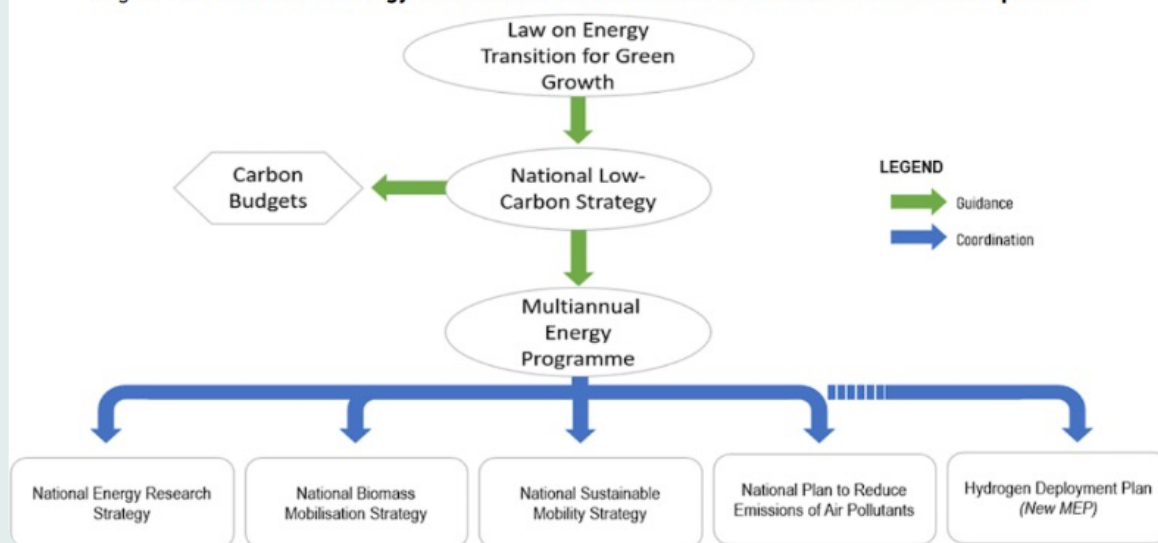
Tagging Led Approach. A few countries have started reforms directly with CBT. These include most European countries, plus South Africa and Nigeria. Countries pursuing this pathway typically have substantial political commitment to the tagging reform and can move rapidly from design to piloting to implementation, along with associated reporting on climate expenditure. The experience of France is provided in Box 24.

Box 24: Sequencing of reforms in France, a tagging led approach

France has set ambitious and legally binding climate change targets, many of which were set at the European Union level and transposed into national law (OECD, 2021f). This includes targets to reach carbon neutrality by 2050, and a range of other targets related to energy consumption, the share of renewable energy, reducing air pollution, and biodiversity conservation. France is one of the top ranked countries for its climate change policies (Burck et al., 2022).

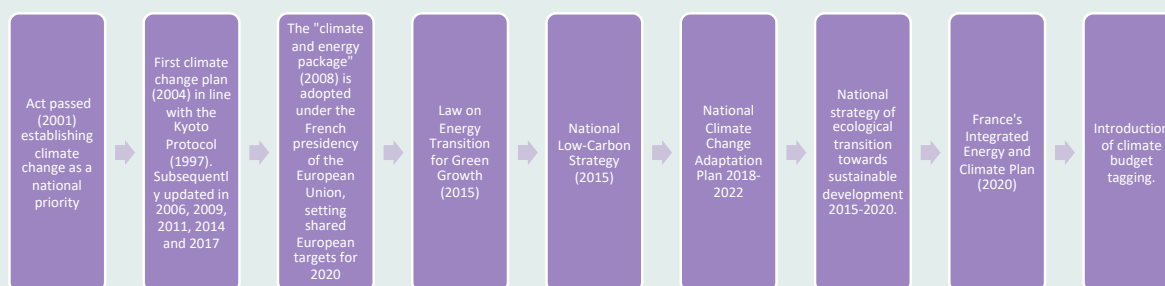
The Law on Energy Transition (2015) establishes the framework for climate change and environmental policies. As shown in the Figure below, it led to the development of the National Low-Carbon Strategy (2015) and Multiannual Energy Programme. The National Low-Carbon Strategy outlines the main priorities for the decarbonisation of the economy, setting maximum 5-year emission ceilings by sector and greenhouse gas, known as carbon budgets. The Multiannual Energy Programme sets out the priorities for energy supply security, energy efficiency improvements, fossil fuels consumption, and the development of renewable energy (OECD, 2021f).

Figure 2.3. The Law on Energy Transition establishes the framework for environmental policies



Source: (OECD, 2021f)

There are several other climate related strategies and plans. Key documents and initiatives for climate responsive budgeting are shown in the Figure below.



The list of policies and initiatives is not exhaustive. Source: (Bova, 2021; France Ministry of Foreign Affairs and International Development, 2014; OECD, 2021f).

Local authorities are viewed as central to reaching climate and environmental objectives and each region is therefore required to develop a plan consistent with the National Low-Carbon Strategy which takes into consideration climate change, air quality and energy concerns (OECD, 2021f).

To monitor the implementation of the National Low-Carbon Strategy a dashboard consisting of 184 indicators was introduced and published in 2018. A dashboard for the Multiannual Energy Programme is under development and will consist of 42 indicators. Other observatories have been set up to improve data collection, such as the Energy and Climate Observatory, National Land Take Observatory and the National Building Energy Renovation Observatory (OECD, 2021f).

The budget bill for 2019 called upon the government to issue a report on the economic, fiscal and budgetary instruments in support of the environment and climate. In 2019, the Energy and Climate Law requested a report to Parliament on the positive and negative incidence of the budget bill for 2020 on climate change.

In response, the General Council for the Environment and Sustainable Development (CGEDD) and the General Inspectorate of Finance (IGF) developed the methodology for green budget tagging which was first implemented for the 2021 budget. It includes favourable and unfavourable contributions for six environmental objectives, matching the EU taxonomy for sustainable activities, i.e. climate mitigation, climate adaptation, water management, waste management, pollution abatement and biodiversity, and protection of landscape. It covers budget allocations, revenue and tax expenditure (Bova, 2021).

The process included integrating an annex on green budgeting into the 2021 performance budget circular, which explained to line ministries and agencies the approach to green budget tagging. This was followed by discussions on how the methodology should be applied in preparing budget proposals (Lelong & Wendling, 2020).

The yellow book annexed to the 2021 budget titled, 'Report on the Environmental Impact of the Central Government Budget', reports on the green budget tagging exercise. The publication of the yellow book is mandated by the 2018 Budget Law (Law 2018-1317) and aims to provide overall consistency and transparency in the State budget with regards to environmental and ecological impacts. It is used to inform lawmakers before the budget debate (Government of France, 2020).

Before green budget tagging was introduced, a report on spending related to renewable energy and a list of spending associated with the Ministry for Ecological Transition were attached to the Budget (France Ministry of Economy and Finance, 2019).

In 2019, the High Council for Climate Change was formally established, as an independent body attached to the office of the Prime Minister which provides independent advice on climate policies with respect to the Paris Agreement. Annual reports are published on greenhouse gas emissions in relation to reduction targets (Bova, 2021).

France's Green Budget stands out by integrating spending that is damaging to the environment and by analysing it across six environmental dimensions: climate mitigation and adaptation, land use, management of water resources, waste, and biodiversity.

A recent study by the Institute for Climate Economics (I4C), showed that climate-friendly spending in the French State budget doubled over the decade covering 2012 to 2021, from an annual spend of EUR 15 billion and 0.7% of GDP to EUR 30 billion and 1.3% of GDP. Related spending is mostly concentrated in three key sectors i.e. building renovation, mobility and low-carbon energy production (Institute for Climate Economics, 2021).

Although limited, there is some evidence to suggest that climate-responsive budgeting reforms introduced in Kenya, Indonesia, Bangladesh, and France, as outlined in Box 22 to 24, have contributed to the increase in the allocation to climate change in the national budget. The reforms have been part of a strong increase in awareness about the urgency of the response to climate change, which has encouraged line ministries to ensure their spending maximises mitigation and adaptation impact and that budget submissions register this impact.

It seems very likely that the evidence about mitigation and adaptation impact has helped line ministries gain higher priority for their programs. There are examples of countries where climate budget reforms have been used directly to make it possible to increase finance for climate change (e.g., the Green Sukuk in Indonesia and the Jordan Climate Program for Results). However, more analysis is needed to determine the increase over time and the extent to which this has been caused specifically by climate budget reforms.

Climate responsive budgeting is still a new and emerging field globally and it is, therefore, too early to measure related impacts on expenditure levels and on effectiveness. The increased attention given to evidence on key performance indicators (KPIs), as well as expenditure levels, should help to make evaluations more informative in the future, but it is likely to be several years before this evidence is available.

In addition, climate change is taking place slowly and erratically, which means that it will not be possible to monitor the impact on adaptation objectives directly. Instead, KPIs will need to address short to mid-term results, many of which will relate to investment in infrastructure and institutional effectiveness, and evaluation will then assess the extent to which conditions have been established for the investment to generate adaptation benefits in the long term, as climate change risks become larger. More attention needs to be given and investments made to systematically assess outcomes and impacts of climate responsive budgeting.

4.7. Climate Change Coordination and Leadership

Section 4.6 described some illustrative sequencing pathways. Decisions about the content and timing of the pathways, and leadership in delivering the planned reforms, depends on strong coordination and leadership.

Climate change coordination and leadership has increasingly shifted to central finance or planning agencies due to the growing recognition of the cross-cutting nature of climate change, risk to the fiscus and links to sustainable growth and development. This recognises the role of the ministry of finance in mobilizing the national budget process, including government ministries and agencies, parliament, and civil society. A decade ago, climate change was seen as an issue with policy coordination and leadership mainly the responsibility of the ministry of environment and some engagement from the spending ministries affected by climate change.

Many of the climate framework laws create institutions to ensure the coordination and resource allocation required for the implementation of climate change policies (Higham et al., 2021). This includes dedicated climate change agencies, departments or units housed at the ministry of finance (such as in Ethiopia and Indonesia), or cross ministerial committees or councils. The latter usually consist of representation from the various line ministries in climate relevant sectors such as energy, transport, water, public works, and rural development. Some committees extend representation to civil society, such as in Ghana and Argentina.

Cross ministerial committees or councils are usually chaired by the President or Prime Minister (for example in Nigeria, Indonesia, Thailand, and Vietnam), the ministry of finance or the ministry of environment or climate change (for example in Cambodia, Vanuatu). Several Pacific Island countries have combined climate change and disaster risk reduction institutions and cross ministerial committees; as for example in Kiribati, Micronesia, Solomon Islands, Tonga, and Vanuatu. Box 25 outlines country experiences in selected countries.

Robust coordination is vital, given the cross-cutting nature of climate change as well as the existence of multiple climate change related bodies in some countries. It is important that committees meet regularly. For example, in Tanzania, the National Climate Change Steering Committee (NCCSC) and the National Climate Change Technical Committee (NCCTC) were established and mandated with the coordination of climate change initiatives across MDAs at the national level. However, both committees do not meet regularly, resulting in poor coordination and weak climate change governance at all levels (UNDP Tanzania Country Office, 2011).

Box 25: Country examples of institutional arrangements for climate change

Nigeria: The 2021 Climate Change Act, sets out the establishment of the Climate Change Council and Secretariat to ensure the alignment of planning and budgeting. The chairman for the council will be the President and the vice chairman the Vice President. The Secretariat will be headed by the Director-General and work to support the council (Atoyebi, 2021).

Mozambique: The Council for Sustainable Development (CONDES) was established by the 1997 Environment Law to promote and coordinate all sectoral efforts towards the sustainable use of natural resources while promoting sustainable economic and social development (GN-NCSDs, 2022). It is headed by the Prime Minister. CONDES created a climate change coordination unit, which is responsible for managing environmental and climate change issues in the country. It liaises with the public sector, private sector, civil society and community-based organisations. The Ministry of Finance is a member of CONDES and the Climate Change Unit (CABRI, 2021a).

Ethiopia: In 2013, the Ministry of Finance established a dedicated Climate Resilient Green Economy (CRGE) unit. It drives the climate change integration agenda, with technical guidance from the Environment, Forest and Climate Change Commission. CRGE is responsible for attracting, allocating and channelling climate finance to national priorities, in line with the CRGE strategy and national development plan. CRGE units have also been established in line ministries and at the regional level (CABRI, 2021a).

Vietnam: Central government coordination for climate change is led by the National Committee on Climate Change (NCCC). It is responsible for the coordination, harmonization and monitoring of the implementation of climate change and green growth programs. It was created by Decision 43/QĐ-TTg (2012) and is chaired by the Prime Minister, with the Minister for Natural Resources and Environment as one of the vice chairs. It also includes several ministers, including for finance, planning and investment, construction, transport, agriculture and rural development, industry, and trade. It also includes National Assembly members and climate change experts and researchers. The NCCC is supported by the Standing Office of the NCCC and the Inter-Ministerial Coordinating Board (Vietnam Ministry of Planning and Investment, 2015).

Vanuatu: In 2012, the National Advisory Committee on Climate Change (NACCC) and the National Task Force on Disaster Risk Reduction (NTF) were merged to form the National Advisory Board on Climate Change and Disaster Risk Reduction (NAB). In 2013, amendments were made to the Geological Hazards and Climate Change Act and the National Disaster Act to formally recognise and legislate for the NAB. It is Vanuatu's supreme policy-making and advisory body for all disaster risk reduction and climate change programs and initiatives. This includes mainstreaming climate change and disaster risk reduction. NAB is chaired by the Director General of the Ministry of Climate Change and Adaptation. Members include the Department of Finance and Department of Women's Affairs, as well as other senior level representatives from key sectoral government agencies such as energy, water, agriculture and rural development, health, education, and public works. It also includes representatives from NGOs and civil society organisations (Vanuatu Meteorology and Geo-Hazards Department, 2013).

Argentina: In 2019, the Law of Minimum Budgets for Adaptation and Mitigation to Global Climate Change was published. The law includes an article that established the National Climate Change Cabinet (GNCC) with the purpose of coordinating different government areas of the National Public Administration, the Federal Environmental Council, and different civil society actors, for the design of climate public policies (Gobierno de Argentina, 2019).

Chile: The Permanent Presidential Advisory Committee on Climate Change was created in 2018 to foster a dialogue process that concluded with the formulation of a preliminary draft Climate Change Law, and the Council of Ministers for Sustainability has facilitated the review and approval of climate-change related documents (UNDP, 2018a).

4.8. Green Recovery Post COVID-19

Following the onset of the COVID-19 pandemic, countries worldwide adopted stimulus spending measures. The first phase of stimulus measures mainly served as emergency rescue packages to protect lives and livelihoods, while subsequent packages focused on recovery⁴⁸ to restore economic growth and employment (O’Callaghan & Murdock, 2021).

There has been growing recognition that, ‘recovery packages that seek synergies between climate and ecological goals have better prospects for increasing wealth, enhancing productive human, social, physical, intangible and natural capital’ (Hepburn, O’Callaghan, Stern, Stiglitz, & Zenghelis, 2020). As a result, there has been growing interest to assess the ‘greenness’ of stimulus packages, leading to the development of several trackers some of which are outlined in Table 4.8.

Table 4.8: COVID-19 Green Stimulus Trackers

Tracker	Coverage	Greenness of stimulus packages
Greenness of Stimulus Index	G20 plus 10 countries	31% of the USD 4.6 trillion will flow into environmentally intensive sectors that impact climate change, biodiversity, or air quality
IMF Policy Tracker	G20 plus Spain	2% of the average package, and 0.2% of GDP is categorized as green. Around 97% is grey as it is not climate relevant
OECD Green Recovery Database	43 countries	Green measures represent 17% of recovery spending (or 2% of total Covid-19-related spending) announced by governments
Global Recovery Observatory	50 largest economies	31.2% of recovery spending was green, amounting to 0.97 trillion of the 3.11 trillion recovery spending
Energy Policy Tracker	G20 plus 14 major economies	37% has been committed to clean energy, however fossil intensive sectors will receive 41%

Note: this is not an exhaustive list as other Covid-19 stimulus trackers are available.

Source: (Eltokhy, Funke, Huang, Kim, & Zinabou, 2021; Energy Policy Tracker, 2022; OECD, 2021e; Oxford University Economic Recovery Project, 2021; Vivid Economics, 2021)

The ability of a country to respond to the crisis with stabilisation policies depends on the fiscal space it has available. Advanced countries in Europe and North America were able to respond with big rescue packages while small developing countries were more constrained in their response. Most studies on the ‘greenness’ of COVID-19 fiscal packages have focused on the major economies and concluded that it has been a missed opportunity as recovery packages supported emission intensive and environmentally damaging industries (Climate Transparency, 2021). For example, countries provided support to:

- The coal, gas, and oil sector
- Unconditional bailouts of national airline companies
- Unconditional support to the automobile industry

A study looking at G20 countries found that only 4% of policies were green with the potential to reduce long term greenhouse gas emissions, while 92% maintained the status quo and 4% were likely to increase greenhouse gas emissions beyond the base case scenarios (Hepburn et al., 2020).

⁴⁸ Recovery packages tend to be short term focus on stabilisation, while recovery packages take a long term view, and generally focus on public investment that stimulates demand and recover economic growth and employment (Climate Transparency, 2021).

The Greenness of Stimulus Index showed that 15 countries of the G20 had a negative index, with only 9 European countries and Canada having a positive index. As shown in Figure 4.13, most stimulus packages will have a net negative environmental impact (Vivid Economics, 2021).

Figure 4.13: Greenness of stimulus index



Source: (Vivid Economics, 2021)

Despite the negative balance in many countries, there are some countries that have managed to integrate some green aspects into their recovery packages. France have provided conditional bailouts linked to climate change targets in the airline and automobile sectors, while Nigeria, South Korea and Colombia have channelled public investment into renewable energy as described in Box 26.

Box 26: Country examples of green recovery packages

EU: The EU’s Recovery and Resilience Facility (RRF) is recognised as the most environmentally friendly stimulus package (Climate Transparency, 2021). Established in response to the pandemic, the RRF will provide USD 792 billion (€723.8 billion) in loans and grants over the coming years until 2026 to help mitigate the consequences of the pandemic and increase sustainability across the EU (European Commission, 2022b).

The RRF is in line with Europe’s sustainable growth strategy, the ‘European Green Deal’. At least 37% of the recovery and resilience plan of individual member countries should contribute to the green transition, including biodiversity (European Parliament & Council of the European Union, 2021).

Reforms and investments included in the member states’ recovery and resilience plans include a ‘do no significant harm’ principle, meaning that they should not be detrimental to climate and environmental objectives. EU member states have allocated almost 40% of their spending plans to climate measures across the 22 recovery and resilience plans approved so far (European Commission, 2022b).

France: In 2020, the 100 billion recovery plan was launched, of which 40 billion is funded by the EU through the RRF. It is a forward-looking investment plan aimed at accelerating the transition to a green economy and supporting job creation.

Under the pillar supporting the green economy, 30 billion is committed to energy efficiency renovation programs for private and social housing, sustainable mobility, the decarbonisation of industries and the development of green technologies (France Ministry of Economy and Finance, 2020).

In France, support for emission intensive industries has been made conditional on environmental and climate performance e.g. support for the airline company Air France-KLM is conditional on the company reducing emissions by 50% and the introduction of a minimum standard of 2% renewable fuel by 2030 (Climate Transparency, 2021).

Nigeria: The Economic Sustainability Plan worth USD 5.2 billion was launched as a response to the pandemic. The plan was meant to stimulate the economy, provide liquidity, generate employment, develop infrastructure, promote manufacturing, and protect poor and vulnerable groups. This included financing for climate related projects.

A Key project included the installation of solar home systems for 5 million households serving 25 million individuals who are not connected to the national grid. Solar equipment manufacturers are required to set up production facilities in the country. This is expected to provide additional job opportunities for the local population. Installation, servicing and payment collections are also expected to generate employment (Government of Nigeria, 2020).

South Korea: Through the 'Green New Deal', as part of the COVID-19 recovery package, the country has committed USD 53.6 billion to green investments. It aims to reduce greenhouse gas emissions by 6.2 million tonnes through green industry innovation, the construction of green infrastructure and green energy. This includes investment in renewable energy, promoting the use of electric vehicles and supporting workers displaced from the transition (O'Callaghan & Murdock, 2021).

Colombia: Launched the comprehensive national recovery package, which was complemented by the National Policy on Sustainable Recovery. The government plans to invest USD 5 billion (COP 19.2 billion) into 25 strategic renewable energy and transmission projects, creating 55,000 jobs. The investment will accelerate the energy transition. Infrastructure and environmental projects are also part of the package (GIZ, 2021).

The experience with tracking the greenness of recovery packages provides lessons for climate budgeting. The analysis of the greenness of post COVID-19 stimuli rely on expenditure classification that has much in common with green budget tagging. It has, so far, been used largely for evaluation by independent organisations but there are opportunities to expand climate budgeting to accommodate the analysis of post COVID-19 stimuli as part of government processes.

- There is much in common in the methodological approaches used for climate budgeting and the assessment of the greening of post COVID-19 stimulus. The energy policy tracker approach is pragmatic and adds a useful dimension (i.e., on conditionality) to the mitigation tags typically used in climate budgeting. The greenness index has some similarities (and some differences) with benefits-based approaches to weighting expenditure used in some CCFFs. The IMF green tracker and the green recovery observatory employ taxonomy methods that have similarities with policy-based classification and SDG budgeting. All methods used to assess the greening of post COVID-19 stimulus have a strong focus on climate change mitigation. Climate adaptation is only covered in the IMF green tracker.
- The tracking of post COVID-19 stimuli is happening with frequent updates, in some cases updated several times in one budget year. This creates opportunities for influencing annual budgets which go beyond evaluations undertaken every few years (e.g., as CPEIRs or CCFFs) to influence strategy revisions. But they require substantial technical expertise and, although many governments do have some relevant expertise, this is usually in heavy demand with very limited capacity to undertake additional analysis.
- At present, the analysis of post COVID-19 stimuli is applied only to the stimuli. This makes it possible to assess the net impact of the stimuli on climate and nature, which provides valuable evidence for policy debate. However, it does not assess whether the stimuli are more or less green than average public expenditure, which would then provide even more valuable evidence. This could be done by either: a) applying climate budget analysis techniques to the post COVID-19 stimuli; or, b) by applying post COVID-19 stimuli analysis to the whole budget. Both approaches are potentially useful, but the former will have more government ownership. In either case, there are opportunities for building more explicit consistency in methods.

4.9. Climate Responsive Budgeting and the Sustainable Development Goals (SDGs)

Some countries have tried to align their budgeting processes with the SDGs, known as SDG budgeting, although the practice is still in its infancy. This brings into governance systems, ‘a more comprehensive, structured and measurable dimension to national and international development goals to assess public policies’ (UNDP, 2020).

It improves policy coherence, reducing conflict between different development objectives. Given the broad framework of the SDGs which relates to all countries globally, SDG budgeting should ideally require the identification of the most challenging goals or targets for a particular country, e.g., Finland conducted a gap analysis and chose two themes for SDG implementation, one of which is ‘carbon neutral and resource-wise Finland’, the other being ‘a non-discriminating, equal and competent Finland’ (Hege & Brimont, 2018).

Climate change budgeting is one component of SDG budgeting, as climate change action is an integral part of the SDGs, both as the direct focus of SDG 13 (United Nations, 2022) and through at least 6 other SDGs.

Countries have integrated the SDGs into their budget proposals and documents, by including qualitative or at times quantitative reporting on how the budget is linked to the SDGs, e.g., Norway and Sweden. Other countries and sub-national governments have introduced SDG mapping or tagging of their public expenditure, e.g., Nepal, Indian State of Assam, Mexico, and Colombia.

Box 27: Colombia’s experience with SDG budget tagging and INFF

Through the Joint Programme Roadmap for an Integrated National Financing Framework (INFF), with the support of UNDP, Colombia is working on an integrated and medium-term strategy to support the acceleration of SDG implementation.

The project has two expected results: (i) provide clarity regarding financial flows related to the SDGs in Colombia (private, public, national and international) as a basis for decision making related to the allocation of public resources; and, (ii) implementation of a national SDG financing strategy (UNDP, 2022).

An analysis of Colombia’s budget tagging in relation to the SDGs was carried out as part of the project. This provided perspective on how funding is allocated to the different SDGs. It also showed that Colombia has made efforts to strengthen the financing of some climate goals. However, climate action is low when compared to investment in other SDGs. This experience showed that it is possible to generate a more integrated vision of SDGs and climate change issues. Aligning the budget with the SDGs is considered a good way to engage with civil society and communicate more openly on financing (UNDP Colombia, 2022).

The Integrated National Financing Framework (INFF) has been developed to help countries seeking to take a comprehensive view of financing for SDGs (Asia Pacific Development Effectiveness Facility & UNDP, undated). This involves a first phase producing a Development Finance Assessment (DFA), which reviews all existing sources of funding for SDGs. This phase has much in common with CPEIRs, extended to cover all SDGs.

The DFA is then used to develop Integrated Financing Solutions that can accelerate achievement of the SDGs, which is similar to the role of CCFFs for climate change. DFAs have been undertaken or planned in more than 30 countries as shown in Table 4.9, and many of these countries are now planning or undertaking the second phase.

Table 4.9: Overview of development finance assessments

DFA's completed or underway		DFA's under consideration/planned	
Bangladesh	Nepal	Bhutan	Kenya
Cambodia	Papua New Guinea	Cameroon	Liberia
Fiji	Philippines	Cape Verde	Madagascar
The Gambia	Timor-Leste	Comoros	Namibia
Lao PDR	Vietnam	Costa Rica	Samoa
Marshall Islands		Dominican Republic	Tanzania
Mongolia		Honduras	Thailand
Mozambique		Indonesia	Uganda
Myanmar		Ivory Coast	

Source: (Asia Pacific Development Effectiveness Facility & UNDP, undated.)

Increasingly, countries are taking an integrated approach to mainstreaming two cross sectoral SDGs; climate change and gender equality⁴⁹. This has been referred to as gender responsive climate budgeting. It recognises that: (i) climate change impacts on men and women differently; (ii) climate change could exacerbate existing gender inequalities and therefore undermine the achievement of the SDGs; and, (ii) women are important change agents who can help to unlock innovative solutions to the climate crisis (CABRI, IBP, IIED, & UNDP, 2021b).

The entry points for gender responsive climate budgeting span the entire budget cycle. The tools used build on those applied for either climate budgeting or gender budgeting. This is due to the similarities between climate change and gender as both have small, dedicated budgets, while almost all public expenditure will have an impact on them. Budget expenditure tagging has, therefore, been used separately for both, typically using OECD DAC marker principles (CABRI, 2022).

Experience globally with gender responsive climate budgeting is limited. Although country experiences vary, reforms thus far have mainly focused on strategic planning and budget formulation. At least 8 countries have developed joint climate change and gender strategies, or action plans, as shown in Table 4.1.

Several more countries have integrated gender into their climate strategies or plans (e.g., Rwanda, Marshall Islands, Micronesia, Solomon Islands, Costa Rica, and Mexico) or into their gender policies and plans (e.g., Eswatini, Fiji, Vanuatu and Mexico). The Asia-Pacific region has been leading the work in this area, with reforms introduced in Bangladesh, Cambodia, Indonesia, and several Pacific Island countries. One of the major obstacles identified by the latter in progressing the agenda is the lack of capacity on gender mainstreaming in relation to climate change (Pacific Community, 2019).

By strengthening the coordination between climate change and gender, countries could access additional international climate finance. Gender equality and social inclusion have increasingly become key criteria when accessing international climate finance through climate change funds. We, therefore, expect more countries to take a more integrated approach for addressing climate change and social equality.

UNDP recently developed a framework for enhancing the integration of gender and poverty in climate finance. It provides a framework for strengthening gender and poverty dimensions within national climate finance, innovative climate finance and multilateral climate finance (UNDP, 2021b). It was developed in consultation with Bangladesh, Cambodia, Fiji, Indonesia, and Thailand.

49 Gender equality is explicitly addressed under SDG 5 (United Nations, 2022).

Box 28: Country experience with gender responsive climate budgeting

Cambodia: In addition to the Gender and Climate Change Action Plan, climate change is a key area in the Gender Strategic Plan (2014-2018). Likewise, gender is one of the objectives in the Climate Change Strategic Plan (2014-2023).

The country also established a Gender and Climate Change Committee to ensure the mainstreaming of gender in climate change policies and programs. According to the mid-term evaluation on the Climate Change Strategic Plan, given that climate change is a significant issue from a gender perspective, more needs to be done to systematically integrate gender concerns into climate change programs.

It also identified that the knowledge and skills to ‘systematically and holistically’ integrate gender-based vulnerabilities to climate change is limited (National Council for Sustainable Development Cambodia, 2019).

Indonesia: In 2020, a study was completed on gender responsive climate budgeting. One of the objectives was to assess the integration of climate change and gender into planning and budgeting processes in selected sectors. The study identified three factors that support the implementation of gender responsive climate budgeting.

The first is regulation on the synchronization of planning and budgeting. This is supported by the planning and budget performance information application called KRISNA. The second factor is the existence of mechanisms and institutions that oversee the implementation of climate budgeting and gender budgeting, in particular the role played in both by the Ministry of Finance and the Ministry of National Development Planning. The third factor is the reward system for the implementation of the Gender Mainstreaming-GRP Strategy, led by the Ministry of Women’s Empowerment and Children’s Protection (Indonesia Ministry of Finance, 2020).

Technical guidance on gender responsive climate budget tagging has been developed and piloted in three sectoral ministries, i.e. Ministry of Energy and Mineral Resources, Ministry of Transportation and Ministry of Environment and Forestry. This supports the tagging of outputs that are relevant to both gender and climate change.

Rwanda: Gender mainstreaming is included in the 2019 Environment and Climate Change Policy. Guidelines for the inclusion of gender and climate change are provided in the planning and budget call circular. An Environment and Climate Change Budget Statement which will include climate change and gender related interventions, will be introduced from 2022/23 (CABRI, 2022).

Mexico: Gender mainstreaming was carried out in the Special Climate Change Program (PECC), which incorporated eight action lines that promote gender equality. Action lines related to climate change have also been included in the National Program for Equal Opportunities and Non-Discrimination against Women 2013-2018 (PROIGUALDAD).

Other climate policy instruments such as the National Climate Change Strategy (ENCC) and Mexico’s Fifth National Communication to the UNFCCC also integrate gender action lines and criteria (Casas, 2017).

The Pacific island countries of **Marshall Islands, Micronesia, Solomon Islands, and Vanuatu** integrate gender into their climate change policies and strategies (Pacific Community, 2019).

While most ‘double mainstreaming’ of climate change and gender focus on integrating gender into climate change policies and programs, **Eswatini, Fiji, Vanuatu, and Mexico** have integrated climate change into their gender policies.

4.10. Climate Responsive Budgeting in the Arab States

The Arab states were not directly part of this review. However, their experience with climate responsive budgeting, applying the framework of the Helsinki Principles, is currently underway as part of a different review by UNDP on, 'Engagement of Ministries of Finance on Climate Change in the Arab States', expected in June 2022. Box 29 summarises some of the preliminary findings.

Box 29: Arab States and Helsinki Principles in focus

Regional Context: The Arab States are among the world's most vulnerable regions to climate change. The region is projected to experience increasing temperatures, water stress, and instances of extreme weather events, with direct consequences for regional food and water security (Sieghart, Betre, & Mizener, 2018).

Evidence collected from the IPCC sixth assessment report confirms the progressive intensification of droughts (hydrologically, ecologically, and agriculturally) and more warming including further aridity and drought (due to less precipitation) and projected significant sea level rise by mid-century in the region (IPCC, 2021). The imperative to address the impacts of climate change is therefore significant, and an increased recognition of its role in enabling resilient and sustainable development is necessary.

- **Helsinki Principle 2:** encourages ministries of finance to review the design, organization, and implementation of climate policy (mitigation, adaptation, and resilience), and the role of the Ministry of Finance therein. Moreover, Ministries of Finance who are member of the Coalition are also expected to share experiences and expertise with each other in order to provide mutual encouragement and promote collective understanding of policies and practices for climate action (Coalition of Finance Ministers for Climate Action, 2022).

In the Arab States, multi-sectoral impacts of climate change have led to a shift from a uni-stakeholder policy agenda to one that is seen as multi-stakeholder. This is partly due to the acknowledgement that climate change is a significant threat to economic development and human security.

When the National Adaptation Plans (NAPs) and the Nationally Determined Contributions (NDCs) became a core part of policy, ministries of finance started participating more actively. In a number of countries, ministries of finance are seen to be a member of the NAP preparation committee.

Among the three countries that have completed their NAPs (Kuwait, Sudan and Palestine), only the NAP of Kuwait outlines a clear public sector financing plan.

- **Helsinki Principle 4:** encourages ministries of finance to develop tools and guides that can facilitate the integration of climate in the policy and budgeting processes, and supporting macro-economic assessment of adaptation, resilience, and mitigation policies, including NDCs.

Mainstreaming climate change mitigation and adaptation policies in macro-fiscal and other relevant policy planning, budgeting, public investment management and public procurement is essential to mitigate the effects of climate change. Some countries have made progress in these areas, building on robust, evidence-based planning and financial management systems.

- **Macro-Economic policy and tools.** It is noted that the region has had limited success in carbon pricing, given the continued presence of energy subsidies, industrial competitiveness, and large state ownership.

A number of Arab countries have adopted regulatory frameworks to introduce tax exemption in the renewable energy sector e.g. Jordan and Djibouti.

Recently, some countries such as the UAE, Qatar, Egypt, and Saudi Arabia have developed multi-billion dollar investment plans in clean technology to move towards a green economy.

To enhance investments towards low-carbon development, ministries of finance in the region may consider providing different fiscal incentives to different climate-related sectors beyond renewable energy.

The integration of climate impacts in the fiscal risk assessment which helps the economy finance the sudden needs caused by climate related events, are not seen in the six Arab states (Iraq, Jordan, Kuwait, Morocco, Sudan, Tunisia and Yemen) as indicated in the Public Expenditure and Financial Accountability (PEFA) report of each country.

- Fiscal Planning. The integration of climate change factors, particularly sectoral climate change adaptation and mitigation priorities in development planning processes is a growing practice.

Currently, eight countries (Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Morocco, Saudi Arabia and Somalia) have adopted long term vision plans which are climate inclusive/climate sensitive to some extent.

For instance, Vision 2020 of Egypt outlines a few climate change related initiatives under its environmental programs 2030, and Saudi Arabia's vision 2030 also includes climate change relevant issues under the environmental component.

- Medium Term Fiscal and Expenditure Framework (MTEF). By the end of 2021, approximately a third of the countries assessed had adopted the MTEF, however initial findings show they do not include an economic assessment of climate change impacts. Likewise, six countries have been engaged on fiscal planning through MTEF, although they likewise do not include budget forecasting based on different climate change scenarios.
- Budgeting. Climate budget tagging which has emerged as a popular practice globally to track climate expenditure, has not yet been introduced in the MENA region. The collection of relevant information from budget circulars is ongoing. However, initial assessments suggest that climate aspirations are not yet visible in the Arab States.

Country specific PEFA reports confirm that budget processes in many MENA countries do not incorporate climate risk.

- Procurement. The initial literature review has illustrated that six Arab countries, Egypt, Jordan, Libya, Morocco, Yemen, and Tunisia, have developed a legal framework for public procurement. Among them, three countries, Morocco, Tunisia and Yemen, encourage green procurement (OECD, 2016).

Morocco issued the decree on public procurement in 2013 to comply with the rules for the protection of the environment.

In Yemen, public contract award criteria must take into account the environmental protection in urban projects underpinned by the procurement law in 2007 and regulation in 2009.

Tunisia also encourages strongly green procurement through the decree on public procurement that has been promulgated in 2014 (OECD, 2016).

- **Helsinki Principle 6:** aims to help members improve their ability to evaluate the macro-fiscal impacts of NDCs and long-term climate strategies, and provide effective guidance to the NDC development process (Coalition of Finance Ministers for Climate Action, 2022).

The process of NDC development and its implementation can vary widely across countries, but they tend to fall within the mandate of environment ministries and in practice, ministries of finance have traditionally been less directly involved in these activities (Coalition of Finance Ministers for Climate Action, 2022).

This is also true for the MENA countries. But at the implementation stage, ministries of finance from some countries of the region, such as Jordan, Lebanon and Sudan have actively engaged with NDC implementation⁵⁰

- **Jordan** has already set up an institutional mechanism for NDC implementation and both Ministry of Finance and Ministry of Planning are actively engaged in advancing the implementation of NDC in the country.
- **Lebanon** has designed a Lebanon Green Investment Facility (LGIF) to support increased financing of climate actions as outlined in the NDC. Both the updated NDC and proposed LGIF are in line with the country's development and economic recovery plans. Moreover, Lebanon has drafted initial partnership frameworks highlighting the priority climate actions in key sectors to support the NDC implementation phase.
- **Sudan's** Ministry of Finance and Economic Planning is the focal point for NDC implementation in the country. The Higher Council for Natural Resources and Environment and the Ministry of Finance and Economic Planning are working together to mainstream climate into key national systems and processes, mobilize funding for climate action, and coordinate national and international efforts to promote low carbon and climate-resilient development.

Source: (UNDP, forthcoming-b)

50 www.ndcpartnership.org

5.

**Summary Conclusions,
Lessons Learnt and
Practical Recommendations
to Strengthen Climate
Responsive Budgeting**

A large number of countries globally, to some extent, have engaged with climate responsive planning, and while some countries have started to integrate climate change into their budget formulation processes, limited progress has been made on downstream PFM processes. Entry points for climate responsive budgeting cover the entire budget cycle, and include other climate policy and PFM interfaces that help to raise and manage public climate finance, and incentivise climate action.

Climate responsive budgeting reforms should respond to country needs and build on existing PFM systems. As articulated at one of the regional consultations, *“there is no need to develop sophisticated tools when the basics are not working”* (participant at the development partners regional consultation, 2022). There are opportunities for climate budgeting to reinforce mainstream budget reforms, notably in the way programs are justified and recorded in the budget.

Although there is limited evidence on the impact of climate budgeting reforms, they are an integral part of a major increase in the priority given to climate change at national and international levels. Climate responsive budgeting is still a new and emerging field globally, with reforms taking place gradually given their politically sensitive nature.

Therefore, it may be too early to measure related impacts. However, there is need for countries to invest in monitoring and evaluation for assessing the socio-economic impact of climate public finance.

Climate responsive budgeting reforms provide the main mechanism by which climate strategies (e.g., NDCs) are implemented, and have created the demand that is leading to rapid progress in work on the costing of NDCs and on the financing options for meeting these costs. They have also begun the process of evolving common approaches that enable country comparisons to be drawn, which is facilitating progress on MRV, both nationally and as part of the UNFCCC.

Given the urgency of the climate change emergency and the call for this to be the decade of climate action, this review provides, based on the stocktake, recommendations for strengthening climate responsive budgeting. Country experiences will vary as they respond to domestic needs and context, but many countries will want to have a fully climate responsive budget within ten years, which will require a marked and sustained increase in the pace of reform and an endpoint when separate climate tools are no longer applied, and climate is fully integrated into routine public financial management and all stages of the budget cycle.

Recommendations on strategic planning and fiscal framework

- (i) **Globally, given that climate responsive budgeting is relatively new, most countries have, therefore, begun by integrating climate change into their national planning frameworks.**

A large number of countries globally have some form of policy, strategy or plan which makes reference to climate change⁵¹.

NDCs have been submitted by 194 countries. Many now include costings, but few also provide significant detail on the likely source of finance linked to macro fiscal frameworks. There has been some early experience with CCFFs, although some have focused on financial management processes, rather than financing gaps and potential sources of financing. Gaps in national planning also persist, when it comes to integrating climate change into macro-fiscal frameworks or medium-term budget frameworks.

Several European countries have successfully integrated climate change into their macro-economic forecasting models; however, due to the complexity of quantifying climate risk and the effectiveness of climate policies and expenditures, only a handful of developing countries have managed to do this and most of the work on macroeconomic impact is still done as part of academic research. Some countries have included qualitative measures of climate risks in the fiscal risk assessment or statement, while they develop capacity for more sophisticated analysis.

⁵¹ While most countries have a dedicated climate change policy, strategy or plan in place, others have integrated climate change into their sectoral policies, strategies or plans in climate sensitive sectors, such as energy, transport and agriculture.

- *Governments should continue to strengthen their NDCs and LTSs, with associated financing scenarios. Climate change strategies (i.e., NDCs and LTSs) should have realistic financing scenarios, linked to the budget and other sources of funding. In addition to positive expenditure, they should include the avoidance of negative expenditure (i.e., spending that increases emissions or leads to maladaptation), which has so far been addressed mainly in the context of independent evaluations of post COVID-19 recovery packages.*
- *Efforts should continue to strengthen knowledge and capacity on integrating climate change into macro-fiscal frameworks, taking into account the potential impact of climate change on economic growth and on trends, sources of revenue and expenditure scenarios.*
- *Climate change should be central to the key priorities in the national development strategy. It should be strategically linked to climate sensitive sectors.*

Recommendations on evaluation and policy review

(ii) Reviews of climate policy, expenditure and institutional roles (e.g., CPEIRs, PCCFAF, CCBII) have proven to be effective at raising awareness about expenditure patterns and influencing budgeting processes, usually indirectly through policy. They have been applied in many African, Asia-Pacific, and Latin America and Caribbean countries. However, many of the reviews were done prior to 2015. Given the pace of reforms, particularly in developing countries, policy review should take place periodically to help governments keep track of the evolving climate institutional and financing landscape.

- *While the ultimate objective should be to put in place the CTB system but wherever not possible the climate expenditure assessments should be done every few years to inform strategies. These should cover trends in expenditure delivering climate change KPIs and the effectiveness of that expenditure. The occasional assessments allow for a more substantive evaluation of the effectiveness of expenditure than is possible simply by monitoring expenditure trends using CBT.*
- *The new PEFA-Climate module and Climate-PIMA will be useful for evaluating whether climate-sensitive budgeting and public investment management processes are in place to ensure that fiscal policies are helping to meet climate objectives.*
- *Evaluation results should be publicly available and where possible, translated into simple language that is easily accessible to civil society and the general public.*

Recommendations on budget preparation

(iii) Increasingly, countries are integrating climate change into their budget formulation processes by requiring spending ministries and agencies to develop, tag and submit climate sensitive budgets. Although the extent of integration varies across countries, at least 25 countries have included climate change in the budget circular or guidelines. Climate sensitive CBA and appraisal options are important tools which could help governments select the best option to meet policy objectives. However, there has been limited experience globally, with only a handful of countries applying related tools when assessing public investments and programs.

- *Ministries of finance should continue to strengthen the inclusion of climate change adaptation and mitigation, in line with NDCs and LTSs, in the national budget, by providing clear guidelines to spending ministries and agencies on developing climate sensitive budgets.*

- *Budget submissions should ensure that the expected benefits of spending programs refer to the objectives in NDCs, LTSs and other climate strategies and to the way in which climate features in the national development strategy.*
- *Climate sensitive CBA and options appraisal tools should be used to ensure that public investment and programs are climate sensitive and that the implications of climate change for program benefits are quantified where they are significant and amenable to quantification.*

Recommendations on budget execution, accounting and reporting

(iv) Given the cross-cutting nature of climate change, there has been increased application of routine CBT which helps governments to classify, tag and track their climate related expenditure. Different approaches to CBT have been taken across countries regarding the definition for climate relevance, the coverage of expenditure, the type of expenditure covered and more. As a result, data from CBT is not comparable across countries. Tagging is usually done by line ministries during the budget formulation process. Very few countries with CBT report on actual expenditure. In addition, the information received from CBT does not seem to systematically inform decision making.

- *Governments who have routine CBT should report on actual expenditure. This would increase transparency and accountability of climate finance. Reports should be publicly available and in easily accessible language and formatting so that it can be used by formal and informal accountability actors.*
- *Whilst CBT provides a useful boost to the profile of climate change in the budget, it should eventually be integrated into the process of program budget reforms that accommodates all cross-sectoral priorities within government (i.e. covering all SDGs) and requires expenditure programs to demonstrate their contribution to all priorities.*
- *Addressing climate change will require a shift in the overall composition of public expenditure, including the reduction in ‘harmful’ expenditure (UNDP, 2015b). Countries should, therefore, consider the pros and cons of tagging negative expenditure and taxation as it can be a good approach for setting the basis for influencing outcomes and increasing pressure on decision makers to deal with harmful expenditure, e.g., negative subsidies.*
- *Global consensus should be developed on the definition of climate finance, practices for avoiding greenwashing and the relationship between tagging and KPIs in NDCs, LTSs and program budgets, with continued coordination by SCF. The UNFCCC New Collective Quantified Goal (NCQG) on climate finance, to be developed by 2025 and replace the previous USD 100 billion annual commitment, will provide a strong incentive to agree on definitions and improve monitoring, reporting and verification.*

(v) Green public procurement or sustainable procurement can be used to achieve climate-related objectives. Leading in this area are EU countries which all apply green procurement on a voluntary basis. Substantial progress has also been made in Latin America and Caribbean with the application of sustainable procurement.

- *Countries should integrate climate change or environmental criteria into their public procurement cycle. Reforms should be done in collaboration with the public procurement agency who are responsible for procurement policy, regulation, and technical support for procurement entities.*

Recommendations on control and audit

- (vi) **Legislative scrutiny of the budget and strong participation from civil society can help hold governments accountable for climate finance and increase transparency.** However, very little progress has been made globally to date. Legislative scrutiny of climate expenditure is still weak in most countries. Very few countries globally have considered the implications for climate expenditure in interpreting the results of ex-post audits on public expenditure. Civil society engagement is limited due to a lack of data and capacity on climate responsive budgeting. There has been some progress, with the introduction of climate framework laws that mandate the Executive to periodically report to the Legislature.
- *Climate change framework laws should be adopted more widely. These should set out reporting guidelines for the Executive to the Legislature. They should also stipulate the action that should be taken by the Legislature in the event the Executive fails to comply with obligations.*
 - *Ex-ante legislative scrutiny should consider whether climate change KPIs are given sufficient funds. This would help to ensure that information on climate public expenditure, particularly from CBT, informs budget decision making.*
 - *Supreme audit institutions should develop capacity and tools to undertake audits of climate expenditure. Evidence from ex-post climate performance audits should feed into program and policy revision.*
 - *More opportunities should be created to enable civil society to engage in the budget process. This should be supported by awareness raising and capacity building on climate change. Citizen's climate budgeting guides should be produced to encourage participation from CSOs, the media and general public.*

Recommendations on cross-cutting themes and other climate policy and PFM interfaces

- (vii) **There are many ways in which climate responsive budgeting reforms can be sequenced.** The most appropriate sequencing depends on the severity of climate change risks and opportunities, the nature of fiscal challenges and the relative importance of awareness, capacity, and effectiveness. Many countries now have nearly ten years of experience with climate responsive budget reforms and should be able to plan a phased program of reforms to achieve something close to the full integration of climate change into planning and budget in the next ten years.
- (viii) **The successful implementation of climate responsive budgeting reforms requires leadership from the central finance or where appropriate planning agency.** As a cross-cutting issue, climate change action requires cooperation from a large number of individuals and organisations. Increasingly, the ministries responsible for finance and planning are leading the implementation of reforms. Dedicated climate change units within the ministry of finance/planning have been created, and/or cross-ministerial climate change committees headed in some countries by the President, Prime Minister or central finance or planning agency. These institutions are often formally recognised through legislation.
- *There should be institutional reforms and incentives created for the ministry of finance/ planning to set up climate finance units or cross-ministerial committees. Training should be provided to staff engaged in the process and to members of respective climate change or environment committees, to provide technical assistance for climate budgeting, over time replacing external technical assistance by international organisations.*
 - *Climate responsive budgeting requires active participation from a broad range of actors, strong coordination and communication is, therefore, required across government and with the various climate change bodies to ensure a coherent and unified response.*

- (ix) **Capacity-building at the individual level, across government, was identified for all regions, i.e., Africa, Asia-Pacific, Europe and CIS, and Latin America and Caribbean.** This is an indication that globally climate responsive budgeting is still a new and emerging field. Continuous capacity building for all levels of government was identified as central to the successful introduction and institutionalisation of climate budgeting reforms in Ghana and the Philippines, although it applies to all countries (UNDP & IIED, 2022).
- *There should be continuous capacity building for the central finance agencies leading climate budgeting reforms, ministries of environment who are largely responsible for leading on climate change policy and for line ministries, who are responsible for developing, submitting and implementing climate sensitive programs and activities.*
 - *Initially this capacity building may need to be supported by international organisations and this will require careful harmonisation and coordination.*
 - *In addition, continuous capacity building is required for the legislature, civil society, and the general public, to enable them to better engage with the budgeting process, advocate for increased allocations to climate change adaptation and mitigation, and play their oversight role.*
 - *It should also be recognised that many functions in climate budgeting are best done using external expertise, especially when they require specialist technical expertise and are done only occasionally (e.g., for appraisal and evaluation). Government requires the capacity to manage this external expertise effectively.*
 - *The effectiveness of capacity building, and indeed climate budgeting, generally should be regularly monitored to ensure it is having a real impact on resource allocation and decision-making.*
- (x) **The effectiveness of climate finance can be enhanced by strategically linking climate change with other relevant policy areas such as the gender, disaster risk management, poverty reduction, and even the SDGs as a whole.** Experiences across countries and regions vary with coordinating climate budgeting with other cross-sectoral priorities. For example, Pacific Island countries have taken a more integrated approach to climate change and disaster risk management, given their vulnerability to climate induced disasters. A number of countries in Asia have taken the lead with gender responsive climate budgeting, while others have opted for SDG budgeting. Gender equality and social inclusion have increasingly become criteria for accessing international climate finance.
- *Climate responsive budgeting should be linked with other priority areas based on national contexts and using the existing program budgeting processes. This can improve the effectiveness of climate finance. It can also help countries access additional climate finance through international climate funds.*
- (xi) **Climate change finance should be channelled through the budget process as this ensures the efficient allocation of resources to meet national priorities and intended accountability to the legislature and ultimately to citizens.** Currently a significant amount of international climate finance is channelled outside of the budget process. This is usually delivered through a projects-based approach or through national climate change funds. Some domestic climate finance is at times also channelled off budget.
- *Effective PFM requires that international and national climate finance is channelled through the national budget. Where funds are initially channelled through national climate change funds or through a projects-based approach, efforts should still be made to use national PFM processes, such as on-budget approval, implementation, and auditing, which should increase coordination and promote a more comprehensive response to climate change.*

- *Where national climate funds are used, they require a clear strategy that specifies the complementarity nature of their role with the much larger spending on climate within the budget.*

(xii) Sub-national governments play an important role in addressing climate change and funds are more likely to reach them by implementing the Principles for Local Climate Action.

Many of the entry points identified for climate responsive budgeting at the central government are also applicable for sub-national governments. Some sub-national governments have started to integrate climate change into their planning and budgeting processes. However, the complexity of integrating climate change effectively into budgets poses an even greater challenge for local governments. As our analysis focused on the central government budget, further analysis is required to explore the role and challenges faced by sub-national governments.

(xiii) Carbon pricing policies will need to be more ambitious if they are going to make a significant contribution to meeting climate goals.

Carbon prices are increasing in some countries, but they remain significantly lower than the recommended price required to keep global warming to 1.5°C. Proposals for an international carbon price floor for the main global emitters may help to facilitate the move towards carbon prices that are more in line with international climate change goals (Parry et al., 2021). When combined with other climate policies, carbon pricing is an effective tool to help incentivise investment in low carbon development and generate revenue which can further support an equitable and inclusive low carbon transition.

(xiv) The adoption of stimulus recovery packages by countries following the COVID-19 pandemic, offers opportunities for a green and more equitable recovery.

Although there is evidence that, on average, stimulus packages adopted by the largest economies have a net negative effect on the environment (Vivid Economics, 2021), some countries have successfully managed to integrate support for the transition to a low carbon and green economy. Several trackers have been developed to assess the ‘greenness’ of stimulus packages.

- *Countries should integrate climate change considerations into their stimulus packages. Opportunities to expand climate budgeting to accommodate the analysis of post COVID-19 stimuli as part of government processes should be explored. This will make it possible to assess if the stimuli are more or less green than average public expenditure.*
- *In the post COVID-19 environment with high debt levels and limited fiscal space, large scale debt for nature swaps and climate related bonds offer potential for additional climate change finance. Governments and the international lending community should explore related options.*

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Appendix A: Africa Stock-Take Table

Overview of Climate Public Finance for Africa

Country	Strategic planning and policy review							Budget preparation		Budget execution	Other PFM interfaces		
	NDCs/INDCs	CC Act	CC policy/strategy/ plan	CC in national development plan	CC in sector policies/ plans	CPEIR	Sovereign insurance	CC in budget circular	CC in PIM	Climate budget tagging	National CC fund	Green/ Blue bonds	Carbon tax
Algeria	x		x		x								
Angola	x		x	x	x								
Benin	x		x			2017					x	x	
Botswana	x			x	x								
Burkina Faso	x		x	x	x		X	x			x		
Burundi	x		x	x	x			xh					
Cabo Verde	x				x								
Cameroon	x			x									
Central African Republic	x												
Chad	x			x			xf	x					
Comoros	x												
Congo	x			x	x								
Côte d'Ivoire	x		x	x			X					x	xl
Democratic Republic of Congo	x												
Djibouti	x			x									
Egypt	x				x							x	
Equatorial Guinea	x												
Eritrea	x		x	x									
Eswatini	x		x	x	x	2021				xq			
Ethiopia	x		x	x	x	2014b; 2021 PEFA Climate			x		x		
Gabon	x		x										
Gambia	x*		x	x	x		X						
Ghana	x		x	x	x	2015; 2021				x		xm	
Guinea	x		x	x									
Guinea-Bissau	x												
Kenya	x	x	x	x	x	2016	xg	xh	x	x	x	xm	
Lesotho	x	xa	x	x	x			x					
Liberia	x		x		x								
Libya					x								

Overview of Climate Public Finance for Africa

Country	Strategic planning and policy review						Budget preparation		Budget execution	Other PFM interfaces			
	NDCs/ INDCs	CC Act	CC policy/ strategy/ plan	CC in national development plan	CC in sector policies/ plans	CPEIR	Sovereign insurance	CC in budget circular	CC in PIM	Climate budget tagging	National CC fund	Green/ Blue bonds	Carbon tax
Madagascar	x		x		x		X						
Malawi	x	xa	x	x	x		X						
Mali	x		x		x		X				x		
Mauritania	x						X						
Mauritius	x	x	x	x	x	PEER 2016; TPSEE 2018		xh		xk			
Morocco	x		x	x	x	2012						xm	
Mozambique	x		x		x	2012d; 2016e		x			x		
Namibia	x		x	x	x					xq			
Niger	x		x				X						
Nigeria	x	x	x	x	x			x	x	xk		x	
Rwanda	x		x	x		2013		x	x		x		
Sao Tome and Principe	x												
Senegal	x				x		X						xl
Seychelles	x		x	x	x	CPEIR 2018o; BPER 2019				xp		x	
Sierra Leone	x		x	x	x								
Somalia	x		x	x	x								
South Africa	x		x	x	x			x	xi	xk	x		x
South Sudan	x*				x								
Sudan	x				x		X						
Tanzania	x	xa	x		x	2013			xj				
Togo	x		x		x		x						
Tunisia	x			x	x								
Uganda	x	x	x	x	x	2013		x	xj	xk			
Zambia	x	x (forests)	x	x	x		x						
Zimbabwe	x	xa	x		x		x						

Notes: CC is climate change, CPEIR is climate public expenditure and institutional review, PIM is public investment management. PEER is public environment expenditure review, TPSEE is tracking of public sector environment expenditure, BPER is a biodiversity public expenditure review.

x* is second NDCs, xa is for environment act, 2014^p is partial CPEIR, 2012^d is environment public expenditure review, 2016^e CPEIR pending validation by the government, x^f previously had cover for the period 2019/20, x^g previously had cover for the period 2014-2016, x^h budget circular refers to the environment, xⁱ for the energy sector, x^j focus is mainly on the environment, x^k climate budget tracking piloting phase, x^l carbon tax under consideration, x^m preparatory measures made, 2018^o is for the CPEIR that was undertaken in 2018/19 under the GCCA+ project however it was unsuccessful due to problems with the consultants, x^p support for climate finance tracking in the energy sector which will be expanded in the future to other sectors, ^q is under development (design phase).

Appendix B: Asia-Pacific Stock-Take Table

Overview of Climate Public Finance for Asia and Pacific

Country	Strategic planning and policy review										Budget preparation		Budget execution	Control and audit			Other PFM interfaces			
	NDC/ INDCs	CC act	CC policy/ strategy/ plan	CC in national development plan	CC in sector policy/ plans	Joint CC & DRR strategy/ plan	Joint CC & Gender strategy/ plan	CPEIR/ CCFF/ CFFr/ PCCFA/ PEFA-C/ CCBII	CC & macro fiscal framework	Sovereign insurance	CC in budget circular	CC in PIM	Climate budget tagging	Green audits	CC budget reports	CC citizen's budget	National CC fund	Green/ Blue bonds	Carbon tax	ETS
Afghanistan	x				x			CCFF 2016												
Armenia	x				x															
Australia	x	x	x		x															x ^w
Azerbaijan	x																			
Bangladesh	x	x	x	x	x		x	CFFr ^c 2014; 2020; CCBII	x ^y		x		x	x	x	x				
Bhutan	x*	x	x					EPEIR ^d 2014												
Brunei Darussalam	x		x		x														x ^t	
Cambodia	x		x	x	x	x	x	CPEIR 2012; 2020; CCFF 2015; CCBII	x		x	x ^k	x			x				
China	x		x		x			CPEIR 2015								x ^o	x			x
Cook Islands	x		x	x	x	x				x										
Fiji	x	x	x	x	x		x ^x	CPEIR 2014		x ^j		x ^k				x	x			
Georgia	x		x		x															
India	x		x		x			CCFF ^e 2015; 2016					x ^l							
Indonesia	x		x	x	x			CPEIR ^f 2015; CFFr 2012; 2021 ^g ; CCBII			x		x		x		x	x ^s		x ^v
Iran			x		x															
Iraq	x	x ^a																		
Japan	x	x	x		x														x	x ^u
Kazakhstan	x																			x
Kiribati	x		x	x	x	x		PCCFAF 2018												
Korea, North	x	x ^a																		
Kyrgyzstan	x		x	x	x															
Lao PDR	x		x		x					x										
Lebanon	x				x															

Overview of Climate Public Finance for Asia and Pacific

Country	Strategic planning and policy review										Budget preparation		Budget execution	Control and audit			Other PFM interfaces			
	NDC/ INDCs	CC act	CC policy/ strategy/ plan	CC in national development plan	CC in sector policy/ plans	Joint CC & DRR strategy/ plan	Joint CC & Gender strategy/ plan	CPEIR/ CCFF/ CFFr/ PCCFA/ PEFA-C/ CCBII	CC & macro fiscal framework	Sovereign insurance	CC in budget circular	CC in PIM	Climate budget tagging	Green audits	CC budget reports	CC citizen's budget	National CC fund	Green/ Blue bonds	Carbon tax	ETS
Malaysia	x		x		x															x ^v
Maldives	x	x ^a	x		x	x										x				
Marshall Islands	x*		x		x	x		PCCFAF 2014		x ^j										
Micronesia	x	x	x		x	x		PCCFAF 2018								x				
Mongolia	x		x	x	x															
Myanmar	x		x	x	x															
Nauru	x		x	x	x	x		PCCFAF 2013												
Nepal	x*	x ^a	x		x	x		CPEIR ⁹ 2011; 2016; CCFF 2016; CCBII 2015; 2017				x	x	x	x ^m	x	x			
New Zealand	x	x	x		x															x
Niue	x	x ^a	x		x	x														
Pakistan	x	x	x		x			CPEIR ⁿ 2015; 2017; CCFF 2017; CCBII 2015				x		x						x ^v
Palau	x		x		x			PCCFAF 2017								x				
Palestine	x				x															
Papua New Guinea	x*	x	x		x			PCCFAF ^l 2018												
Philippines	x	x	x		x			CPEIR 2012				x		x		x				
Republic of Korea	x	x ^a	x		x															x
Samoa	x*	x ^a	x	x	x			CPEIR 2012; PEFA-C 2021		x		x		x ⁿ						
Singapore	x	x ^a	x																x	
Solomon Islands	x		x	x	x			PCCFAF 2016												
Sri Lanka	x		x		x															

Overview of Climate Public Finance for Asia and Pacific

Country	Strategic planning and policy review										Budget preparation		Budget execution	Control and audit			Other PFM interfaces			
	NDC/ INDCs	CC act	CC policy/ strategy/ plan	CC in national development plan	CC in sector policy/ plans	Joint CC & DRR strategy/ plan	Joint CC & Gender strategy/ plan	CPEIR/ CCFF/ CFFr/ PCCFA/ PEFA-C/ CCBI	CC & macro fiscal framework	Sovereign insurance	CC in budget circular	CC in PIM	Climate budget tagging	Green audits	CC budget reports	CC citizen's budget	National CC fund	Green/ Blue bonds	Carbon tax	ETS
Syria	x																		x ^t	
Tajikistan	x		x																	
Thailand	x	x ^a	x	x	x			CPEIR 2012; CCBI; CCFF 2022 ^z			x	x	x				x ^p	x		x ^v
Timor-Leste	x			x																
Tonga	x*	x ^a	x		x	x		PCCFAF 2015; CCBI 2021	x							x				
Turkmenistan	x		x																	
Tuvalu	x	x ^a	x		x	x										x				
Uzbekistan	x				x															
Vanuatu	x	x	x		x	x		CPEIR 2014; PCCFAF 2017	x ^l							x ^q				
Vietnam	x		x		x			CPEIR 2015; 2022				x		x		x	x ^r			x ^v

Notes: CC is climate change, DRR is disaster risk reduction, CPEIR is climate public expenditure and institutional review, CCFF is climate change financing framework, CFFr is climate fiscal framework, PCCFA is the Pacific climate change finance assessment framework, PEFA-C is the PEFA Climate module, PIM is public investment management.

x* is second NDC, x^a is environment act, CFF^c is CFF was updated in 2020, EPEIR^d is environment PEIR, CPEIR^e is CPEIR in India was limited to the states of Bihar, Chhattisgarh and Kerala, CPEIR^f is CPEIR was at the provincial level, CPEIR^g is 2016 CPEIR was at the district level, CPEIR^h is CPEIR was updated, PCCFAFⁱ is partial use of the framework, x^l is previously held a policy, x^k is public investment management focus on the environment, x^l is climate budget tracking in selected states, x^m is independent green audits for selected programs, xⁿ is only for projects under ministry of environment, x^o the fund is for air pollution, x^p the fund is focused on energy, x^q the fund is focused on green energy, x^r intent to issue green bonds, x^s carbon tax scheduled, x^t carbon tax is under consideration, x^u ETS for Tokyo, x^v ETS under consideration, x^w ETS abolished, x^x climate change is include in the national gender policy, x^y ongoing as it is still being developed, z is under final review.

Appendix C: Europe and CIS Stock-Take Table

Overview of Climate Public Finance for Europe, CIS and USA

Country	Strategic planning and policy review									Budget preparation		Budget execution			Control and audit			Other PFM interfaces / enabling		
	NDCs	CC acts *	CC policy/ strategy/ plan	CC in national dev. plan	CC in sector policies/ plans	NDCFF	Joint CC & Gender strategy/ plan	Expenditure assessments	CC & econ models	CC: in budget circular	CC in PIM	Climate budget tagging	Tracking features	GP/SP	Green audits	CC budget reports	Citizens' roles / science experts, non-gov	Green bonds / green sukuk	Carbon tax	ETS
Armenia	x	- / 2			x			CPEIR, CCBII												
Austria	x	x / 6	x						x	x					x	x ^e		D		x
Azerbaijan	x			x	x			CCBII (D)		D										
Belarus	x			x	x ^b															
Bulgaria	x	x / 8	x		x															x
Denmark	x	x / 11	x	x	x				x	x	x		x	x	x	x ^f	x	x	x	x
EU	x	x	x	x	x				x	x			x						x	x
- EU SIF									x		x	M+A			x					
Finland	x	x / 12	x	x	x ^b					x ^a		x	+ neg.	x	x	x ^g	x	x	x	x
France	x	x / 13	x	x	x					x		x	+ neg.	x	x	x ^h	x	x	x	x
Germany	x	x / 19	x		x ^b									x		X ⁱ	x			
Georgia	x	- / 6	x		x			CPEIR(D)				D								
Hungary	x	x / 8			x ^b									x					x	x
Iceland	x		x		x ^b									x					x	x
Ireland	x	x / 12	x	x	x ^b				x	x ^b	x	x	M+A	x	x	X ⁱ	x	x	x	x
Italy	x	-/14	x		x ^b					x		x	+ neg							
Kazakhstan	x				x ^b															x
Kyrgyzstan	x		x	x	x	D	D	PPEIR						D	D					D
Lichtenstein	x	x / 5																	x	x
Malta	x	x / 3	x		x ^b									x				D	D	x
Moldova	x	- / 4		x	x							D								
Netherlands	x	x/8	x	x	x				x	x				x	x				x	x
N Macedonia	x	-/2			x ^b	D						D							D	
Norway	x	x / 13	x	x	x ^b				x	x		x		x	x				x	x
Spain	x	x / 11	x	x	x ^b									x					x	x
Sweden	x	x/9	x	x	x ^b					x				x		x ^k			x	x
Switzerland	x	1/5	x		x				x					x					x	x
Tajikistan	x	- / 3	x																	

Overview of Climate Public Finance for Europe, CIS and USA

Country	Strategic planning and policy review									Budget preparation		Budget execution			Control and audit			Other PFM interfaces / enabling		
	NDCs	CC acts *	CC policy/ strategy/ plan	CC in national dev. plan	CC in sector policies/ plans	NDCFF	Joint CC & Gender strategy/ plan	Expenditure assessments	CC & econ models	CC: in budget circular	CC in PIM	Climate budget tagging	Tracking features	GP/SP	Green audits	CC budget reports	Citizens' roles / science experts, non-gov	Green bonds / green sukuk	Carbon tax	ETS
UK	x	1/19	x	x	x				x	x				x	x	X ^l	x			x
Ukraine	x	1/15	x		x ^b				x					D			x	x		D
USA	x	-/14	x		x			FCCERC CCARFF	x					x			x		D	x
Uzbekistan	x	- / 1		x	x											CB (D)	D			

Notes: Abbreviations (listed in alphabetic order): CB is citizens' budget; CC is climate change, CCARFF is Climate Change: Analysis of Reported Federal Funding (2018, by US Government Accountability Office), CCBII is climate change budget integration index; CPEIR is climate public expenditure and institutional review, D is draft / being developed; DRR is disaster risk reduction, EU SIF is European Structural and Investment Funds (2014-2020), FCCERC is Federal Climate Change Expenditure Review to Congress (2013, USA), M+A – tagging does not separate mitigation from adaptation, NDC – Nationally Determined Contribution, NDCFF – NDC financial framework, PIM - public investment management. PPEIR is Public and Private Environmental Expenditure review (Kyrgyz Republic), + neg is also negative expenditure is tracked,

x^a - the Ministry of Finance issues an instruction letter to ministries on how to include an analysis of their appropriations and connections with sustainable development in their proposal x^b - CC primarily in energy sector policies only, x^c - as part of climate tracking process the climate action unit at the Department of Public Expenditure and Reform DPER gives very clear indications to line ministries; x^e – Austria's Climate Council (Klimarat), x^f- Denmark's Climate Assembly (Borgerting på klimaområdet), x^g - Finland's Citizens' jury on climate actions, x^h - France Citizens' convention on climate (La Convention Citoyenne Pour Le Climat) xⁱ- German Citizens' Assembly on Climate (Bürgerat klima), x^j- Ireland's Citizens Assembly x^k - Sweden's Climate Policy Council - an independent, interdisciplinary expert body tasked with evaluating how well the Government's overall policy is aligned with the climate goal of no net greenhouse gas emissions by 2045, x^l-Climate Assembly UK and Scotland's climate assembly.

* x/# or -/# the numerator displays whether the country has adopted a specific climate law obliging it to meet specific climate targets in line with its international commitments and the denominator reflects the total of # climate laws, regulations, decrees other legislation.

Appendix D: Latin America and Caribbean Stock-Take Table

Overview of Climate Public Finance for Latin America and the Caribbean

Country	Strategic planning and policy review									Budget preparation			Budget execution		Control and audit			Other PFM interfaces / Enabling Environment							
	NDCs/ INDCs	CC Act	CC policy/ strategy/ plan	CC in national dev. plan	CC in sector policy/ plan	Joint CC & gender strategy/ plan	CC in post-Covid recovery	CPEIR	CCFS	Sovereign insurance	CC in budget circular	Green / SDGs budgeting	CC in PIM	Climate budget tagging	GPP / SPP	MRV climate finance	Ratified Escazu Agreement	Transparency & oversight (Citizens, parliament)	National CC fund	Debt for climate swaps	Carbon pricing / taxes	Green bonds	ETS	Inter-agency coord. entity	MoF global coalition
Antigua y Barbuda	x	x ^a		x	x					x						x									
Argentina	x*	x	x	x	x									x		x		x		x	x				x
Bahamas	x			x	x					x				x											x
Barbados	x			x	x					x							x				x				
Belize	x			x	x					x				x											
Bolivia	x	x ^a	x	x	x											x									
Brazil	x	x		x	x									x				x			x				
Chile	x*	D	x	x	x		x	x 2016	x 2019			x		x	x		x			x	x		x		x
Colombia	x	x	x	x	x			x 2018	x 2017			x		x	x					x	x		x		x
Costa Rica	x	D	x	x	x						x	x		x					x		x				x
Cuba	x			x	x	x																			
Dominica	x	x		x	x	x				x															
Ecuador	x	x ^a	x	x	x			x 2017	x 2020		x			x	x		x		x			x		x	x
El Salvador	x		x	x	x			x 2018						x					x					x	
Grenada	x*			x	x																				
Guatemala	x	x	x	x	x					x 2018				x							x				
Guyana	x			x	x									x		x		x							
Haiti	x			x	x									x											

Overview of Climate Public Finance for Latin America and the Caribbean

Country	Strategic planning and policy review									Budget preparation			Budget execution		Control and audit			Other PFM interfaces / Enabling Environment							
	NDCs/ INDCs	CC Act	CC policy/ strategy/ plan	CC in national dev. plan	CC in sector policy/ plan	Joint CC & gender strategy/ plan	CC in post-Covid recovery	CPEIR	CCFS	Sovereign insurance	CC in budget circular	Green / SDGs budgeting	CC in PIM	Climate budget tagging	GPP / SPP	MRV climate finance	Ratified Escazu Agreement	Transparency & oversight (Citizens, parliament)	National CC fund	Debt for climate swaps	Carbon pricing / taxes	Green bonds	ETS	Inter-agency coord. entity	MoF global coalition
Honduras	x	x	x	x	x			x 2016			x			x	x									x	
Jamaica	x			x	x									x											x
México	x	x	x	x	x						x	x	x	x	x	x	x				x	x	x	x	x
Nicaragua	x	D	x	x	x			x 2015			x			x	x		x								
Panamá	x		x	x	x	x								x		x									x
Paraguay	x	x	x	x	x									x											x
Perú	x	x	x	x	x	x			x 2021				x	x	x	x		x							x
República Dominicana	x		x	x	x									x											x
San Vicente y las Granadinas	x			x	x												x								
Santa Lucía	x			x	x												x								
Suriname	x*			x	x									x											
Trinidad y Tobago	x			x	x									x											
Uruguay	x		x	x	x									x			x								x
Venezuela	x		x	x	x																				

Abbreviations (listed in alphabetical order):

CC is climate change; CCFF is Climate Change Financing Strategy; CPEIR is Climate Public Expenditure and Institutional Review; D is draft or under development ETS is Emission Trading Systems; GPP is Green Public Procurement, NDC is Nationally Determined Contribution; PFM is Public Financial Management, PIM is Public Investment Management; MRV is Monitoring, Reporting and Verification; MoF is Minister of Finance; SDG is Sustainable Development Goals, SPP is Sustainable Public Procurement; . x* is second NDC; x^a is environment act.

Appendix E: Key Guiding Questions Covering the Budget Cycle

Strategic Planning and Fiscal Framework	
	Actions Taken (e.g., NDCFF/CCFF, CPEIR, CEGIM ...)
country experience and lessons	<u>Climate change objectives and targets</u> <ul style="list-style-type: none"> • Do national development strategies and plans incorporate climate related targets and objectives (informed by NDCs and climate relevant SDGs)? • Are plans updated periodically as NDCs are revised?
	<u>Climate responsive macro-fiscal framework</u> <ul style="list-style-type: none"> • Does macro-fiscal forecasting and modelling include climate change? Does this inform the preparation of the fiscal strategy and budget? • Are climate change targets incorporated in the mid-term expenditure framework? • Are fiscal risks estimated such as (i) uncertainty of the costs associated with mitigation and the global transition towards a low-carbon economy (ii) potential costs of adaptation? Do these inform the fiscal strategy and medium-term budget frameworks? Any of the budget documents (fiscal risk statement)? Is it linked to debt management? • Are climate risk management strategies in place? (This can include contingencies for natural disasters, provisioning, insurance, etc).
	<u>Long term fiscal sustainability analysis</u> <ul style="list-style-type: none"> • Is climate change factored into long term fiscal sustainability analysis? • Are fiscal rules flexible enough to respond to a climate related emergency? (e.g., escape clauses)
	<u>Financing</u> <ul style="list-style-type: none"> • Do climate change strategies (e.g., NDCs) have clear CCFF? • What measures are in place for climate related domestic resource mobilization? • Is there the systemic weigh-on of all sources of finance (loans, grants, debt swaps, national and international climate funds, carbon markets, green bonds and insurance instruments)? • Is the main interest on new climate finance? • Does the country have any experience with innovative financing? • If there is a national climate fund, does it have a clear role?
	Possible Recommendations

Budget Preparation and Approval	
	Actions Taken (e.g., budget docs, CCIA ...)
country experience and lessons	<u>Climate change impact appraisal and cost benefit analysis</u> <ul style="list-style-type: none"> • Is climate change impact appraisal or cost benefit analysis used to assess new policy measures? Are they required in budget guidelines? • Is climate change impact appraisal or cost benefit analysis used to inform the process for the appraisal and selection of public investment projects? • Is evidence from climate science used?
	<u>Climate change in the budget circular</u> <ul style="list-style-type: none"> • Is climate change included in the budget circular?
	<u>Climate responsive program budgeting</u> <ul style="list-style-type: none"> • Is climate responsive budgeting mainstreamed into program and performance budgeting processes? • Is there an explicit connection with SDG budgeting?
	<u>Budget negotiation and approval</u> <ul style="list-style-type: none"> • Do line ministries see climate change as a chance to gain more priority? • Does cabinet consider climate change in budget negotiation? • Does parliament consider climate change in budget approval? • Is there any public engagement in climate budgeting?
	Possible Recommendations
Budget Execution and Accounting	
	Actions Taken (e.g., CBT, climate accounts ...)
country experience and lessons	<u>Classifying, tagging and tracking climate expenditure</u> <ul style="list-style-type: none"> • Is climate budget tagging used during budget formulation and execution? • Is climate budget tagging integrated in the IFMIS? • Does reporting allow for the direct comparison between budgeted and actual expenditure? • Are governments satisfied with OECD/DAC markers? If not, what plans do they have to add value?
	<u>Climate performance monitoring</u> <ul style="list-style-type: none"> • Are there any internal or external practices to monitor climate change expenditure? • Were any major climate related reallocations or supplementary budget issued? • How has government dealt with years of low climate change spend?
	<u>Green public procurement</u> <ul style="list-style-type: none"> • Do procurement guidelines include climate change or environmental criteria? • Are there targets set for green procurement?
	Possible Recommendations

Control and Audit	
	Actions Taken (e.g., audits of climate expenditure)
country experience and lessons	<u>Ex post climate change audits</u> <ul style="list-style-type: none"> • Are ex post evaluations or audits of the impact and effectiveness of climate-related policies, carried out by the government or supreme audit institution (SAI)? Do these assess if the impacts (e.g., GHG reductions) are in line with the stipulated climate goals in NDC and development plans? • Do performance audits, which try to specifically assess the link between policy outcomes/ outputs include climate change considerations?
	<u>Climate watchdogs</u> <ul style="list-style-type: none"> • Are there any dedicated independent bodies supporting the oversight of climate policies (e.g., a national climate change council, committee, or panel)? Do they have a formal mandate?
	<u>Parliamentary oversight and public participation</u> <ul style="list-style-type: none"> • Does parliament examine reports from SAI and evaluation reports on green or climate strategies? Has any corrective action been requested? • Is there political pressure on government to address CC? • What is the level of public concern/interest in CC? • How active are CSOs in climate change mainstreaming? • Do CSOs have the capacity to be more active?
	Possible Recommendations
Cross Cutting	
	<u>Country experience and lessons</u> <ul style="list-style-type: none"> • Is the role of the Ministry of Environment clear and respected? • What is the capacity of officials and is there over-dependence on consultants (esp. international)? • Are MDBs/consultants over-optimistic in claiming government ownership of actions/ reforms? • Level of engagement by vulnerable groups/women • Has there been any learning from GBT and DRB? • Any 'double-mainstreaming' (gender, DRM)?
	Possible Recommendations

Appendix F: List of Guides for Climate Responsive Budgeting

<p>UNDP. (2015). <i>Methodological Guidebook: Climate Public Expenditure and Institutional Review (CPEIR)</i>. Retrieved from https://www.asia-pacific.undp.org/content/rbap/en/home/library/democratic_governance/cpeir-methodological-guidebook.html</p>
<p>UNDP. (2018). <i>Hard Choices – Integrated Approaches: A Guidance Note on Climate Change Financing Frameworks</i>. Retrieved from https://www.asia-pacific.undp.org/content/rbap/en/home/library/democratic_governance/hard-choices-integrated-approaches.html</p>
<p>UNDP. (2019). <i>Knowing What You Spend: A Guidance Note for Governments to Track Climate Change Finance in their Budgets</i>. Retrieved from https://www.undp.org/publications/knowning-what-you-spend-guidance-note-governments-track-climate-change-finance-their</p>
<p>UNDP. (2020). <i>Budgeting for the Sustainable Development Goals: Aligning Domestic Budgets with the SDGs. Guidebook</i>. Retrieved from https://sdgfinance.undp.org/sites/default/files/UNDP%20Budgeting%20for%20the%20SDGs%20-%20Guidebook_Nov%202020.pdf</p>
<p>UNDP. (2021). <i>Budgeting For Climate Change: A Guidance Note for Governments to Integrate Climate Change into Budgeting</i>. Retrieved from https://www.undp.org/publications/budgeting-climate-change-guidance-note-governments-integrate-climate-change-budgeting</p>
<p>Menzies, N., Almuzaini, A., Annandsingh-Rattia, D. C., Averchenkova, A., Fozzard, A., & Kirchofer, X. V. (2021). <i>World Bank Reference Guide to Climate Change Framework Legislation</i>. Retrieved from Washington, D.C: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/267111608646003221/world-bank-reference-guide-to-climate-change-framework-legislation</p>
<p>UNEP. (2019). <i>Changing Course: A Comprehensive Investor Guide to Scenario-Based Methods for Climate Risk Assessment in Response to the TCFD</i>. Retrieved from https://www.unepfi.org/wordpress/wp-content/uploads/2019/05/TCFD-Changing-Course-Oct-19.pdf</p>
<p>OECD. (2021). <i>Green Budget Tagging: Introductory Guidance & Principles</i>. Retrieved from https://www.oecd-ilibrary.org/content/publication/fe7bfcc4-en</p>
<p>UNEP. (2021). <i>Sustainable Public Procurement: How to Wake the Sleeping Giant! Introducing the United Nations Environment Programme’s Approach</i>. Retrieved from https://www.unep.org/resources/publication/second-edition-uneps-sustainable-public-procurement-guidelines</p>
<p>Commonwealth Parliamentary Association. (2020). <i>Climate Change and Small States: Parliamentarian’s Toolkit. A Guide for Effective Climate Change Action</i>. Retrieved from London: https://www.cpahq.org/media/hnpdzwpq/cpa-small-branches-climate-change-toolkit-feb-2020-online-single.pdf</p>
<p>Guzman, S. (2022). <i>A Guide to Analyzing the Public Budget for Climate Action : A Citizen’s Proposal</i>. Retrieved from https://internationalbudget.org/wp-content/uploads/publicbudget-09-02-22.pdf</p>
<p>Flynn, C. (2011). <i>Blending Climate Finance through National Climate Funds: A Guidebook for the Design and Establishment of National Funds to Achieve Climate Change Priorities</i>. Retrieved from New York: https://ndcpartnership.org/toolbox/blending-climate-finance-through-national-climate-funds-guidebook-design-and-establishment</p>
<p>WEDO, & CDKN. (2021). <i>Guide to Strengthening Gender Integration in Climate Finance Projects</i>. Retrieved from New York: https://cdkn.org/resource/guide-strengthening-gender-integration-in-climate-finance-projects/?loclang=en_gb</p>

Appendix G: Overview of National Climate Funds in Developing Countries

	National Climate Fund	Established	Source	Host	Scope	Accreditation	Legislation	Source
Africa								
Algeria	Renewable Energy National Fund	2009	Tax	Ministry of Finance, trust account	Renewable energy		National Fund for Energy Management established in 2000, amended in 2015 by decree	Domestic
Benin	National Fund for Environment and Climate (FNEC)	2013	Eco-tax, annual grants, intl donors	Independent fund	Climate and environment	GCF/AF	94-009 law	Domestic and External
Burkina Faso	Le Fonds d'Intervention pour l'Environnement (FIE)	2015	Budget and external aid	Ministry of Environment and Ministry of Finance	Climate, environmental degradation, economic development, poverty reduction		Decree No 2015-883/PRES-TRANS/PM/MEF/MERH	Domestic and External
Chad	Special Fund for the Environment (Fonds Spécial pour l'Environnement)	2013	Domestic taxes	Ministry of Environment and Fisheries	Protection and enhancement of the environment	GCF	Law N 014/PR/98	Domestic
Cote d'Ivoire	Fonds Interprofessionnel pour la Recherche et le Conseil Agricoles (FIRCA)	2003	Budget and external	Independent entity	Agriculture, climate change	AF	Law No 2001-635, Decree No 2002-520	Domestic and External
Democratic Republic of Congo	National REDD+ Fund (FONAREDD)	2012	External aid	Multi-Partner Trust Fund Office	REDD+		National REDD+ Strategy	External
Ethiopia	Climate Resilient Green Economy Facility	2012	External aid	Ministry of Finance and Economic Cooperation and MPTF	Climate change	AF/GCF*	CRGE Strategy and Vision	External

	National Climate Fund	Established	Source	Host	Scope	Accreditation	Legislation	Source
Kenya	Country Climate Change Funds (national climate change fund is still in development)	2018	Budget and external aid		Climate change (research and innovation)			Domestic and External
Mali	Mali Climate Fund	2014	Budget and external aid	Ministers of Environment and Sanitation, Foreign Affairs and Finance	Climate change strategy and action plan	GEF		Domestic and External
Mozambique	National Sustainable Development Fund (FNDS) replaces Fund for the Environment (FUNAB)	2016			Rural development		Decree No. 6/2016	Domestic and external
Namibia	Environment Investment Fund	2001	Budget	Ministry of Mines and Energy	Sustainable economic development	GCF	EIF: Act 13 of 2001	Domestic and External
Namibia	Revolving Solar Fund	1996	Budget	Ministry of Mines and Energy	Deploy solar to off-grid areas			Domestic
Rwanda	FONERWA	2005	Budget and external	Independent legal entity	Environment and climate change		N39/2017 - Law establishing the fund; Minister of Environment establishes eligibility of activities	Domestic and External
Senegal	Centre de Suivi Écologique (CSE)	1986	Budget and external	Independent legal entity	Environment, natural resource management, impact assessments	AF/GCF*		Domestic and External
South Africa	South African Green Fund	2012	Budget and external	Department of Environmental Affairs; DBSA	low carbon, climate resilient development	AF/GCF*	National Environmental Management Biodiversity Act 10/2004	Domestic and External

	National Climate Fund	Established	Source	Host	Scope	Accreditation	Legislation	Source
South Africa	South Africa National Biodiversity Institute (SANBI)	2004	Budget and external	Independent entity	Biodiversity, climate change			Domestic and external
Tunisia	Energy Transition Fund	2005	Budget	National Energy Conservation Agency	Energy efficiency, co-generation, solar		Law 2005-82 on Energy Efficiency Fund	Domestic
Zambia	Rural Electrification Fund	2003	Budget and external	Rural Energy Authority	Solar, wind, hydro, grid		Rural Electrification Act 2003	Domestic and External
Asia-Pacific								
Bangladesh	Bangladesh Climate Change Trust Fund	2010	Budget	Ministry of Environment	Climate change		BCCTF Act	Domestic
Bangladesh	Bangladesh Climate Change Resilience Fund	2010	External	Ministry of Environment and Forests	Climate change			External
Bhutan	Bhutan Trust Fund for Environmental Conservation	1992	Budget	Independent fund	Forests, water, biodiversity	GCF	Royal Charter of the Bhutan Trust Fund for Environmental Conservation-1996	Domestic and External
Cambodia	Cambodia Climate Change Alliance Trust Fund	2010	External aid	National Climate Change Committee	Strengthening capacity of National Climate Change Committee		Cambodia Climate Change Strategic Plan formulated after CCCA was launched	External
China	Clean Development Mechanism Fund	2007	Revenue from Certified Emissions Reductions	Ministry of Finance	Low carbon growth and climate resilience	GCF	13th Five Year Plan for Controlling Greenhouse Gas Emissions	Domestic
Fiji	Climate Relocation and Displaced Peoples Trust Fund	2019	Levy fees and external aid		Climate change adaptation and natural disasters			Domestic and External

	National Climate Fund	Established	Source	Host	Scope	Accreditation	Legislation	Source
India	National Clean Energy and Environment Fund	2010	Budget	Ministry of Finance	Environment		NAF announced as a part of the budget speech in 2014; NCEF through a finance bill 2010-1	Domestic
India	National Adaptation Fund	2015	Budget and External	NABARD for NAF	Clean energy, environment, adaptation	AF/GCF		Domestic and External
Indonesia	Indonesia Climate Change Trust Fund	2009	Budget and external aid	BAPPENAS	Climate change, includes marine		Presidential Regulation 80/2011	Domestic and External
Indonesia	Environment Fund	2019	Budget and external aid	Ministry of Environment and Forests	Environment			Domestic and External
Iran	National Environmental Fund	2015	Budget and external aid	Independent legal entity	Reduce pollution, protect natural resources, biodiversity		Law of the Fourth Five-Year Plan of Development	Domestic and External
Jordan	Jordan Renewable Energy Efficiency Fund	2012	Budget and external aid	Ministry of Energy and Mineral Resources	Deployment of renewable energy, energy efficiency		Energy Efficiency and Renewable Energy Law N13/2012	Domestic and external
Lao PDR	Environmental Protection Fund	2005	Budget and external aid	Independent entity	Environment management, protection and conservation		No. 146/PM	Domestic and external
Maldives	Maldives Climate Change Resilient Fund (Maldives CCTF)	2009	External	World Bank	Climate change strategy and action plan			External
Micronesia	Micronesia Conservation Trust Fund	2002	External and budget	Independent legal entity	Biodiversity conservation and sustainable development	AF/GCF		Domestic and External
Nepal	National Trust for Nature Conservation	1982	Budget and external	Independent legal entity	Biodiversity, protected areas, climate change	GCF	National Trust for Nature Conservation Act 1982	Domestic and External

	National Climate Fund	Established	Source	Host	Scope	Accreditation	Legislation	Source
Pakistan	National Energy Conservation Centre (ENERCON)	2002	External	Independent corporate body	Energy conservation		National Energy Efficiency and Conservation Act 2016	External and domestic
Palau	Protected Areas Network Fund		Levy fees and external aid					Domestic and External
Philippines	People's Survival Fund	2012	Budget and external	National Treasury	Climate adaptation, sub-national		Republic Act 10174 of 2012	Domestic and External
Thailand	Energy Efficiency Revolving Fund	2003	Budget	Department of Alternative Energy Development and Efficiency	Energy efficiency, renewable energy		Low interest loans from commercial banks	Domestic
Tonga	Climate Change Trust Fund	2017	Budget and external aid		Climate change adaptation and mitigation			Domestic and External
Tuvalu	Tuvalu Trust Fund	1987	Budget and external	Tuvalu Trust Fund	Broad, includes non-climate		International Trust Fund for Tuvalu Agreement	Domestic and External
Vanuatu	Green Energy Fund	2016	Budget and external aid		Sustainable energy	GCF		Domestic and external
Vietnam	Financial Mechanism	2010	Budget					Domestic
Latin America and Caribbean								
Antigua and Barbuda	Sustainable Island Resource Fund	2015	Fees	Department of Environment	Environment, climate mitigation and adaptation	GCF*	Environmental Protection and Management Act 2019	Domestic and External
Argentina	Argentinian Carbon Fund	2005	External	Environment Secretariat	Investments in clean technology for CC mitigation		Decree 1070/2005	Domestic and external
Belize	Protected Areas Conservation Trust	1995	Fees, investment income, donations	Independent trust	Natural and cultural resources		Protected Areas Conservation Trust Act of 1995	Domestic and External

	National Climate Fund	Established	Source	Host	Scope	Accreditation	Legislation	Source
Brazil	National Fund on Climate Change (Fundo Clima)	2009	Tax, donations	MMA	Climate change		Law 12144 2009	Domestic and External
Brazil	Amazon Fund	2008	Results-based payments, donations	BNDES	Deforestation and forest degradation	GCF	Decree 6, 527 2008	Domestic and External
Brazil	Funbio	2009	Budget and external aid	Independent entity	Biodiversity and climate	GCF		Domestic and External
Costa Rica	FONAFIFO	1996	Budget, credit sales, capital income	independent legal status	Forest management, agroforestry, environmental services		Forest Law N 7575	Domestic and External
Guatemala	National Climate Change Fund (FONCC)	2013	Budget and external aid	Ministry of Environment and Natural Resources	Climate change		N7-2013 - Framework law to regulate vulnerability, adaptation and mitigation	Domestic and External
Guyana	Guyana REDD+ Investment Fund	2010	External aid	Inter-American Development Bank	REDD+			External
Mexico	Fondo Mexicano para la Conservación de la Naturaleza A.C.	1994	Budget and external	Independent legal entity	Climate adaptation, mitigation	GCF*		Domestic and External
Peru	Peruvian Trust Fund for National Parks and Protected Areas (PROFONANPE)	1992	External	Independent legal entity	Biodiversity, environmental liabilities, and climate change	AF/GCF*	Decree Law No. 26154	External
Trinidad and Tobago	Green Fund	2013	Markets, fuel taxes, intl aviation levies, and taxing research	Ministry of Planning and Development	Environment		Miscellaneous Taxes Act	Domestic and External

Notes: *indicates that the accredited entity has received funding from the GCF, NA-GCF indicates that the fund is not an accredited entity but is implementing a GCF project, GCFx2 indicates that the fund is implementing two GCF projects, BNDES and Funbio are accredited entities for Brazil.

Source: Data is from (Bhandary, 2022). This was extended with data for Kenya (V-LED, 2009), Mali (UNDP, 2014), Mozambique (ECOLEX, 2022), Fiji (Pacific Community, 2019), Palau (Pacific Community, 2019; PAN Fund, 2022), Tonga (UNFCCC, 2022b), Vanuatu (GGGI, 2022), Argentina (Secretaria de Ambiente, 2015).

