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A Guidance Note on Climate Change Financing Frameworks

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Charting New Territory: A Stock Take of Climate Change Financing Frameworks in Asia-Pacific

UNDP Partners with people at all levels of society to help build nations that can withstand crisis, and drive and sustain the kind of growth that improves the quality of life for everyone. On the ground in more than 170 countries and territories, we offer global perspective and local insight to help empower lives and build resilient nations.

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Foreword

The impacts of climate change are being felt deeply across the world and threaten to undermine decades of hard won development gains.

Beyond the threat to lives and livelihoods, the economic impacts are staggering. For example, it is estimated that by 2050 climate change could reduce GDP growth in some countries throughout South and South East Asia by up to 4% per annum.

UNDP is actively supporting governments to put in place integrated, transformative development approaches that are sustainable, resilient, and inclusive.

Increasing the effectiveness, efficiency, and equity of how climate finance is delivered will play a key role in how people and countries can move towards realising the Paris Agreement, the Sendai Framework for Disaster Reduction, and the 2030 Agenda for Sustainable Development Goals.

This Guidance Note serves as an introductory guide for stakeholders on how to create or refine a Climate Change Financing Framework (CCFF) – a strategic, whole-of-government plan to better manage, mobilize and target climate finance.

By providing guidance on how the core elements, processes and outputs involved in a Climate Change Financing Framework fit together, this Note will assist countries to create more effective, practical, and integrated financing responses.

This Guidance Note places emphasis on the pivotal role of domestic finance and state budgets as a vehicle to achieve climate-compatible sustainable development. Indeed, a CCFF process could culminate in a strategic financing plan linked to a medium-term budget policy document.

This emphasis on domestic finance reflects the imperative for a paradigm shift toward "blended finance" approaches to climate action, as well as the greater importance of partnerships and government co-financing for achieving the SDGs.

As domestic financing for climate change increases, UNDP, with decades of experience in over 170 countries and territories around the world, is in a unique position to build capacities to resource "zero carbon" development.

This focus on providing guidance to governments underscores how UNDP is moving from a traditional donor to an advisor and provider of development services.

Emerging from bottom-up experiences of working directly with governments in the Asia Pacific, this guidance note has developed processes and strategies that are globally applicable and scaleable throughout other countries, areas and regions.

UNDP aims to improve how development financing can secure optimal benefits for the poor and vulnerable. Looking forward, climate financing strategies and CCFFs also present unique opportunities to integrate gender equality and other social development concerns to the mutual benefit of all agendas. Subsequent updates to this Note and accompanying technical briefs will reflect such innovative approaches.

In summary, while the challenges posed by climate change are daunting and time is short, country-driven responses—as leveraged by CCFFs and their climate finance readiness plans—also present an opportunity. Namely: how to make public services and investments work better for the poorest and most vulnerable, and how to deliver them to where they are most needed to build resilience.

This Guidance Note moves countries another step toward seizing that opportunity.

Jo Scheuer
Director for Climate Change
and Disaster Risk Reduction,
UNDP's Bureau for Policy and
Programme Support

How to Navigate the Guidance Note

This Note outlines the core elements, processes, workflows, and outputs of a CCFF. This is achieved by reviewing the roles and value-added aspects that a CCFF plays in facilitating a whole of government response to the challenges presented by climate change.

Tailored Advice: How to best read this Guidance Note

Guidance and practical tips throughout the note are tailored along the lines of the key stakeholders (i.e. the "archetypal" institutions most typically involved in CCFF formulation). This allows the reader to follow the process and workflows most relevant to their institution. Readers from these institutions can follow the text by scanning the guidance note for the relevant colour coding system below. These colours will occur **in the text and at the side of page margins (see the left side of this page for example), marking which pages are relevant for which bodies.**

- **The Climate Change Policy Body (CCPB)** is responsible for integrated climate change governance including developing, monitoring and coordinating a national climate policy. This role is typically played either by a ministry of environment (MoE) operating independently or as the Secretariat of an inter-ministerial climate change council. In a few countries, a unit of the Ministry of Finance plays this role, or a dedicated ministry or authority has been set up.
- **The Ministry of Finance (MoF)** takes responsibility for public revenue and expenditure and for coordinating the budget process.
- **The Ministry of Planning and Investment (MOP)** takes responsibility for coordinating long-term national development planning and issuing guidelines for ensuring that service delivery and investment contributes to improved livelihoods and economic opportunities for all. They can also play a key role in developing targeted programs and policies to attract green investment.
- **Line Ministries (LMs) and Investment Agencies** are responsible for the design and implementation of sectoral policy and for mainstreaming climate change into their sector plans and budgets. Investment agencies can be set up to facilitate PPPs and state-owned enterprises with a particular sectoral scope that is climate-relevant (e.g., renewable energy).
- **Accountability Actors (AAs)** are responsible to hold governments to account for their policies, actions, and budget allocation decisions related to climate change. AAs can come from within and outside government. These include parliamentarians, CSOs, the media and national audit institutions. Depending on the governance practices in each country, their role to play in the CCFF process can vary.

AA's
LM's
MoP
MoF
CCPB

Following Sections of the Guidance Note

Section 2 outlines how data on climate impacts including risk and vulnerability assessments and economic analyses of associated damages can be used to build a better understanding of the effectiveness and targeting of past and current climate related expenditure.

It then provides guidance on how to maintain and utilise this data; gives options for identifying, classifying and tracking climate-related expenditures; and, finally, illustrates how to develop a financing plan for a Climate Change Strategy and Action Plan. This is particularly relevant for **Climate Change Policy Bodies (CCPBs)** though it also refers to responsibilities for Ministries of Finance and Line Ministries.

Section 3 outlines how countries can adjust their budget processes to ensure that their national climate response plans are delivered more systematically. This requires an understanding of how climate change can be integrated into planning and public financial management across sectors and levels of government.

This section also articulates how to develop financing scenarios; how to formulate budget guidance to better integrate climate change elements into budget formulation processes and formats; and how to strengthen budget negotiations and allocations to better direct climate spending. **The chapter is particularly relevant for Ministries of Finance and Accountability Actors,** though it refers to the roles of other institutions.

Section 4 provides more in-depth guidance to assist **Line Ministries** integrate climate change into their planning and budgeting processes. Section 4 illustrates how investment screening and appraisal tools can better include climate change; provides guidance on raising the profile of climate in budget submissions; and provides guidance on how external funding proposals for climate finance can be strengthened. Overall, the section provides an overview of how these measures can lead to improved access to budget finance and new sources of climate finance for Line Ministries. This chapter is **primarily designed for Line Ministries,** but should be of interest to other institutions.

Section 5 reviews how existing frameworks for monitoring climate change actions can benefit from CCFFs. This monitoring is normally coordinated by the Climate Change Policy Body, but much of the information is generated by **Line Ministries.** As such, this section is particularly **relevant for both Climate Change Policy Bodies and Line Ministries.**

Section 6 provides suggestions for how institutions can better coordinate an approach to the key components of a CCFF. It highlights how CCFFs can be tailored to each countries' needs. **This chapter is particularly relevant for the Climate Change Policy Body (CCPB) and Accountability Actors.**

AA's
LM's
MoP
MoF
CCPB

Abbreviations

ADB	Asian Development Bank
AF	Adaptation Fund
BCR	Benefit Cost Ratio
CBA	Cost Benefit Analysis
CC	Climate change
CCAR	CC Annual Report
CCBA	CC Benefits Analysis
CCFF	CC Financing Framework
CCSA	CC Screening and Appraisal
CCSAP	CC Strategy and Action Plan
CPEIR	CC Public Expenditure and Institutional Review
CSR	Corporate Social Responsibility
CTF	Climate Trust Fund
DRR	Disaster Risk Reduction
eCBA	Extended Cost Benefit Analysis
EIA	Environmental Impact Assessment
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse Gas
LAPA	Local Adaptation Plan of Action
M&E	Monitoring and Evaluation
MCA	Multi-Criteria Analysis
MoF	Ministry of Finance
MoP	Ministry of Planning
MTEF	Medium Term Expenditure Framework
NAF	National Adaptation Fund
NAP	National Adaptation Plan
NAPA	National Adaptation Programme of Action
NCF	National Climate Fund
OBA	Objectives Based Approach
ODA	Official Development Assistance
PCCFAF	Pacific CC Finance Assessment Framework
PPP	Public Private Partnership
RoI	Return on Investment
SNA	Sub National Authorities
tCO2e	Tons carbon dioxide equivalent emissions
UNDP	United Nations Development Programme

1 Introduction

This Note is designed for governments and institutions to guide them through the process of creating or refining a Climate Change Financing Framework (CCFF). It provides an overview of the core elements, processes and outputs involved in a CCFF and how these fit together to create an effective, practical framework. The CCFF process will culminate in a whole-of-government strategic financing plan. Accompanying technical notes will follow this Guidance Note and will provide more detailed, step-by-step methodological advice.

For instructions on how to best make use of this guide, please see the breakout box at the end of this section.

This introduction will explain what a CCFF is, their benefits and rationale, where they have been carried out to date and lastly, it will outline of the contents of the Note.

The Challenge of Climate Change

The impacts of climate change – including increased droughts and more severe storms – are threatening lives and livelihoods across the globe. These impacts have an especially strong effect on the poor and marginalized who are more likely to suffer from rising food costs, damage to agriculture, the spread of tropical diseases and other effects of climate change.

Climate change also threatens to undermine or reverse decades of development gains. The economic effects associated with climate change could reduce GDP growth in some countries throughout South and South East Asia by up to 4% per annum by 2050 (see Figure 3). For many developing countries in Africa and Asia, evidence suggests that their GDP in 2050 could be at least 25% below what it would be without climate change.

These effects also increase maintenance or reconstruction costs for infrastructure, add new health burdens on the labour force, and reduce the productivity of natural resources and ecosystems.

This is a distinct threat to the stability and prosperity of the region - one compounded by the fact that countries' systems and capacities, particularly those for planning and budgeting, are often ill equipped to deal with this.

However, these challenges also represent opportunities if climate adaptation and mitigation finance efforts are managed effectively. In realigning development goals, promoting the green economy, and fostering more sustainable growth, follow-on social benefits beyond climate action can be accrued far into the future.

Climate Change Financing Frameworks

To address the grave challenges posed by climate change, domestic and international finance flows are increasingly being mobilized and directed towards climate adaptation and mitigation goals. Looking at international climate finance, for example, in 2014 multilateral and bilateral donors allocated $22 billion for adaptation activities alone. With these increasing flows comes a need for stronger systems and structures to track and manage them. At the same time, developing countries are becoming increasingly aware that both investor and donor confidence can be boosted through more transparent, risk-informed plans and budgets.

Climate Change Financing Frameworks are designed to respond to this challenge.

A comprehensive CCFF can be understood as a voluntary, whole-of-government process to structure a more strategic approach toward the ***mobilization, management and targeting*** of climate change finance. The process and workflows associated with a CCFF serve to align a country's climate policy framework with its budget process and to integrate climate finance into its existing public economic and financial management systems. This alignment will support the overarching goal of making financing flows more consistent with low-carbon, climate-reslient development pathways.

CCFFs can serve as a key pillar to support the implementation strategies and action plans associated with national climate change and related green growth policies in developing countries. At the same time, they can be used as tool to support countries in setting and monitoring the delivery of their voluntary international commitments and unconditional targets articulated in their Nationally Determined Contributions (NDCs) under the Paris Agreement, the UN Sustainable Development Goals (SDGs) in particular, goal #13 on Climate Change as well key as results expected from the Addis Ababa Accords on Finance for Sustainable Development, and the Sendai Framework on Disaster Risk Reduction.

The outcomes from these processes abet more strategic and dependable implementation of climate actions and plans—whether at the national or the sub-national level. As a generic framework, a CCFF is "agnostic" to mitigation/adaptation objectives. A country could orient its CCFF to support actions that reduce long-term climate change itself (through mitigation), or to those that can unlock new economic opportunities presented by its effects, while reducing the fiscal burden linked to them (through adaptation). Ideally it would look at both in a holistic and integrated manner.

CCFF processes engage a variety of government stakeholders and accountability actors. The process would ordinarily culminate in a formal, government issued 'master plan for financing a climate change response'—called either a financial or fiscal framework—associated with a key budget or economic policy document, such as a Medium-Term Expenditure Framework (MTEF) or National Economic Plan. In some instances, an outcome in the sense of the latter understanding of a CCFF is an immediate action point (e.g., Cambodia, Bangladesh), whereas in other countries the Ministry of Finance elaborating a distinct framework document is a second-level goal achieved over time after a policy process initiating various reforms has been instituted and components of the interlinked CCFF process are further realised and embedded into routine public economic and financial management processes.

Once short and medium-term needs and shortfalls have been identified, the framework can then chart out ways to close the climate financing gap through policies, activities, and measures that are best placed to deliver results. Broadly, three overarching principles would underlie an approach to these CCFF driven outcomes and tools:

Effectiveness

Ensuring that funding flows are guided toward actions that make genuine contributions to mitigation or adaptation results, based on evidence and metrics that look at how effective they are. For mitigation, effectiveness is generally measured by the extent to which an action reduces GHG emissions at a set cost (see section 4.1). In the case of adaptation, programmes can be evaluated based on their ability to reduce the projected economic value of expected losses. In some cases, similar projects or precursor pilots can be used as a benchmark. Climate change screening and appraisal (CCSA) is used in conjunction with these analyses (see section 4.1), which in turn guides climate expenditure classification and tracking (see sections 2.2 and 2.3).

Efficiency

Prioritising climate actions can also be guided by efficiency metrics to ensure an optimal return on public investment. Efficiency is generally determined by dividing the effectiveness of an action by its costs. The efficiency of climate mitigation actions is expressed as a function of the cost of reducing a unit of GHG emissions (i.e., the marginal abatement cost or MAC); this is usually expressed in terms of a CO2 equivalent unit cost ratio ($/tCO2e). For adaptation, efficiency can also be thought of as a ratio (see section 4.1) that measures how damage or loss expressed as economic 'units' could be reduced for a given amount of money or as a share of GDP.

Equity

Climate finance should be targeted more equitably to address imbalances in the effects and costs of climate change on different population groups, geographies, and sectors. As climate change vulnerability tends to exacerbate existing inequality and social exclusion, it is important that decisions on allocating climate funds reflect a need to reach communities that are already poor or gender unequal. Quantifying these dimensions of risk and impacts in economic terms provides a basis for setting priorities and targets in each sector, which can further guide the budget process. CCFF tools can support budget and proposal prioritization among various options and response programmes based on where funding can simultaneously address both climate and long-term development goals, such as reducing social inequality (see section 4.1). In this way, an optimal and fairer allocation of expenditure can be made (see section 2.5).

CCFFs would normally consider financial planning and gaps both in the medium as well as in the longer term. For most countries, budget and fiscal policy planning processes cover short-term (i.e. annual) or medium-term (i.e. three to five year) time scales. CCFFs could, for example, aim to align with the time parameters of a country's MTEF (normally covering 3 to 5 years). At the same time, due to the long-term nature and economic consequences of global climate change, it is also important that planning and finance ministries begin the process of translating these into long-term action plans and development policy frameworks for today.

Longer-term actions could be aimed to align to international timeframes as set by various fora including the SDG process, which aims at goals to be achieved by 2030, and the Paris Agreement, which sets various dates for global reporting and stocktaking (e.g., the first expected global stock take in 2023). Since in most cases only a small portion of international climate funds will come from donors, it is vitally important that government budgeting and financing mechanisms are geared appropriately to address climate change, including developing clear fiscal incentives for private sector engagement.

A CCFF includes (but is not restricted to) the following elements:

- Building integrated climate governance, including through improved inter-ministerial coordination mechanisms, the engagement of new actors, fostering more effective and constructive collaboration between executive and non-executive government actors as well as between the state and CSOs, and other actions to strengthen coherence between climate policy and development.
- Measures and instruments for ensuring accountability over the use of climate finance *vis-à-vis* the public and beneficiaries, particularly those most climate-vulnerable, including legislative and budget tools, participatory action research, public information access and media education.
- Identification of the institutional entry points to bring public (and some private) climate finance (domestic and international) into the national appraisal and prioritisation of the budget.
- A definition of what constitutes climate change related activities in a manner that is robust, nationally-determined, and agreed by concerned stakeholders.
- A costing of planned climate change response actions in the medium and longer-term
- An assessment of the range of current financial flows and an estimation of resources available to address climate change mitigation and/or adaptation goals.

The Benefits of Carrying out a CCFF

In addition to facilitating a more coherent, structured government-wide response to climate change that links budgeting and financing to priority interventions, CCFFs and the process of formulating them, provide many other benefits. These benefits include:

- Informing at a country level the quantification of climate financing "gaps," based on a better picture of current and expected financing flows and a more detailed costing and economic analysis of needs and climate impacts. The 2016 Adaptation Gap Report issued by UN Environment argued that developing countries would require between $140 billion and as much as $300 billion per year in new finance flows by 2030 to address their adaptations needs, as opposed to baseline estimates from 2014.
- Empowering governments to decide how to best use and leverage climate funds to achieve broader long-term sustainable development visions and complementary target objectives outlined in their nationally determined SDGs targets (see section 4.3).
- Institutionalising climate resiliency and long-term greenhouse gas development strategies (including NDC targets) through systemic adjustments to planning and budgeting guidelines and processes (see sections 2.2, 3.2, 3.3 and 4.2) along with the mainstreaming of these strategies in implementing agency work plans and key results areas.
- Enhancing country readiness to secure and deliver international climate finance through the development of strategies for utilising and/or blending it with domestic resources, and by building more trust in its own use of climate finance (see section 4.3).
- Providing greater accountability and performance management *vis-à-vis* line ministries of sector investment and service delivery through more robust tracking and MRV systems that can increase transparency in climate spending (See section 2.4).
- Supporting a more evidence-based case for additional climate financing through the compilation, organisation and use of data sets and budget figures (see section 4).
- Providing stakeholders with tools to identify the economic effectiveness and efficiency of delivering climate actions, as well as to ensure that the poor and vulnerable are being effectively targeted through climate financing to reduce net impacts (see section 4.1).
- Facilitating more coordination, coherence and complementarity in how climate finance is mobilized and channelled, making use of comparative advantages of different sources of climate finance and reducing waste (see section 2.5 and 3.1).
- Informing and facilitating more evidence-based monitoring and evaluation of climate policy targets across sectors, levels of government, and functional processes, (see section 5).
- Attracting investments through more transparency on climate finance and more climate risk-informed planning (see section 3).
- Enhancing general climate finance "readiness" by strengthening in-country analytical capacities, PFM and M&E systems, and climate programme design.
- Finally, by translating evidence on climate risk, vulnerability, and impacts in macroeconomic and fiscal terms via indicators such as lost GDP growth and revenue, a CCFF can drive an increase in political will. In highlighting the scale of the challenge, public policy dialogue can be better informed and additional pressure brought to bear on the accountability of governments to ensure effective climate strategies are integrated into planning and budgeting (see section 5).

CCFF Components

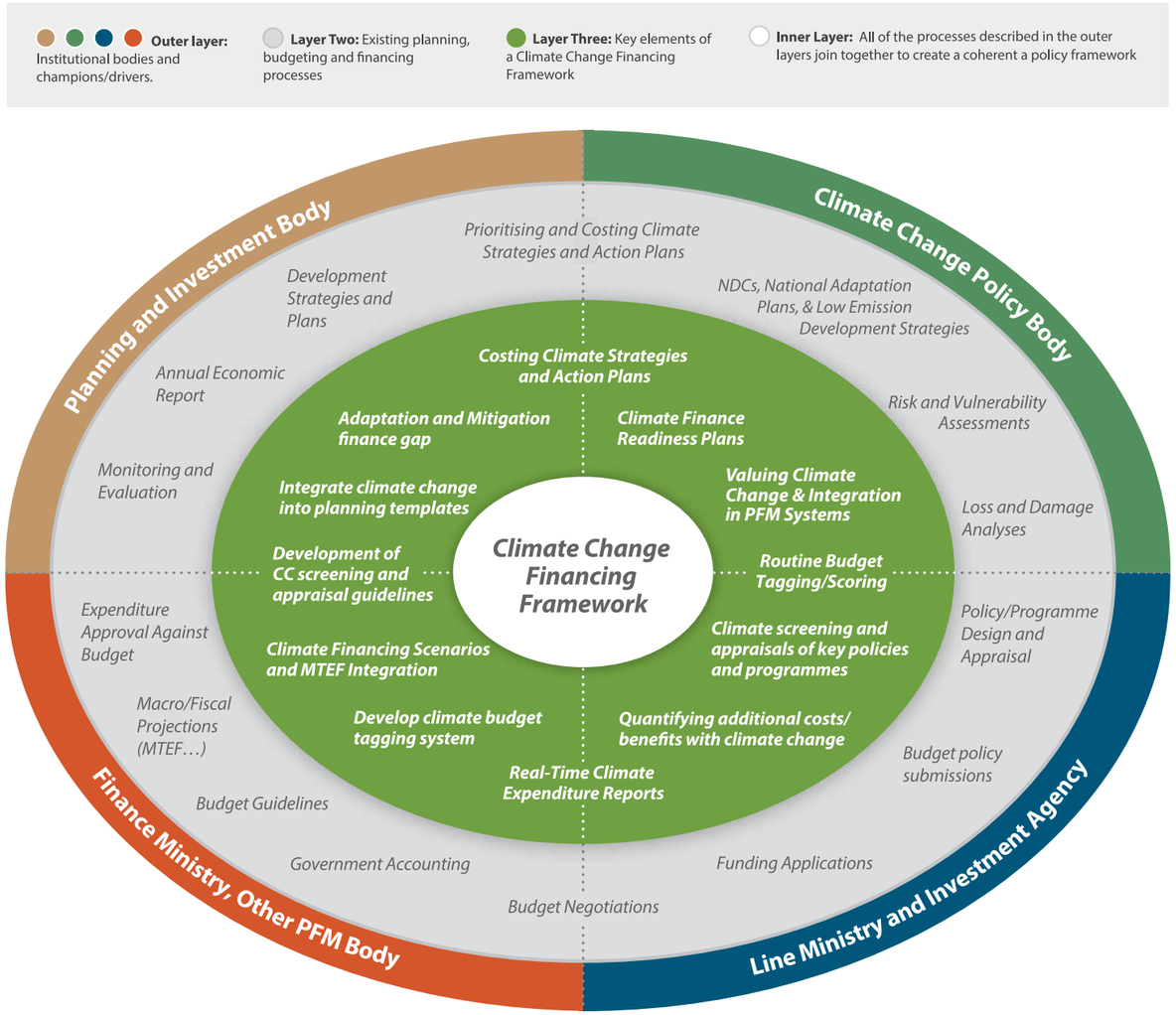
A CCFF can be viewed as a set of interrelated policy processes, components and workflows (see Figure 1) encompassing a range of technical analyses and institutional reforms. There is no standard form that all CCFFs take. Instead each is tailored to every country's needs, strengths and unique challenges.

However, the key core components and associated workflows of CCFFs include:

- *Valuing climate change and integration in PFM systems:* and integrating assessments of climate risk, vulnerability, and associated losses and damages into public financial and economic management.
- *Climate Change Screening and Appraisal (CCSA):* integrating the implications of climate change into overall evaluations of the effectiveness of policies/projects as well as their incremental contribution to adaptation and/or mitigation goals.
- *MTEF Integration and Budget Process Reforms:* instituting climate budget tagging and scoring systems, and using performance monitoring and CCSA to argue for marginal changes in budget allocation.
- *More evidence-based climate funding:* using CCSA and budget analyses to strengthen the cost-effectiveness of fiscal instruments as well as applications for international climate funding.
- *Integrating Climate Change into Planning Templates and Budgeting Annual Economic Reports.*
- *Tracking, including Real-Time Expenditure Reports:* accounting and reporting on the level of public (and potentially private) spending that contributes to adaptation and/or mitigation and mapping how much is being spent and where.
- *Climate Change Financing Scenarios:* estimating future funds available, realigning action plan costings to be consistent with availability, and assessing the gap between needs and availability of finance.
- *Integrating Climate Change Risk/Valuation metrics in M&E guidelines:* reviewing the expected impact of climate action in reducing GHG emissions and/or the economic effects of climate change.

How these CCFF-specific workflows relate to routine policy/planning processes and budgeting cycles is shown in Figure 2. Since the workflows all interrelate and ultimately interconnect in a cycle, there is no single correct "sequencing" approach. Governments may choose which components and entry points to emphasize their efforts, as per their own existing policy priorities, needs, and capacities. Thus, while common and uniform elements of CCFFs exist, countries can and will choose a pathway and different areas of initial focus, under a structured menu approach that reflects their own context.

Figure1 - Government Bodies and Processes that Constitute a CCFF

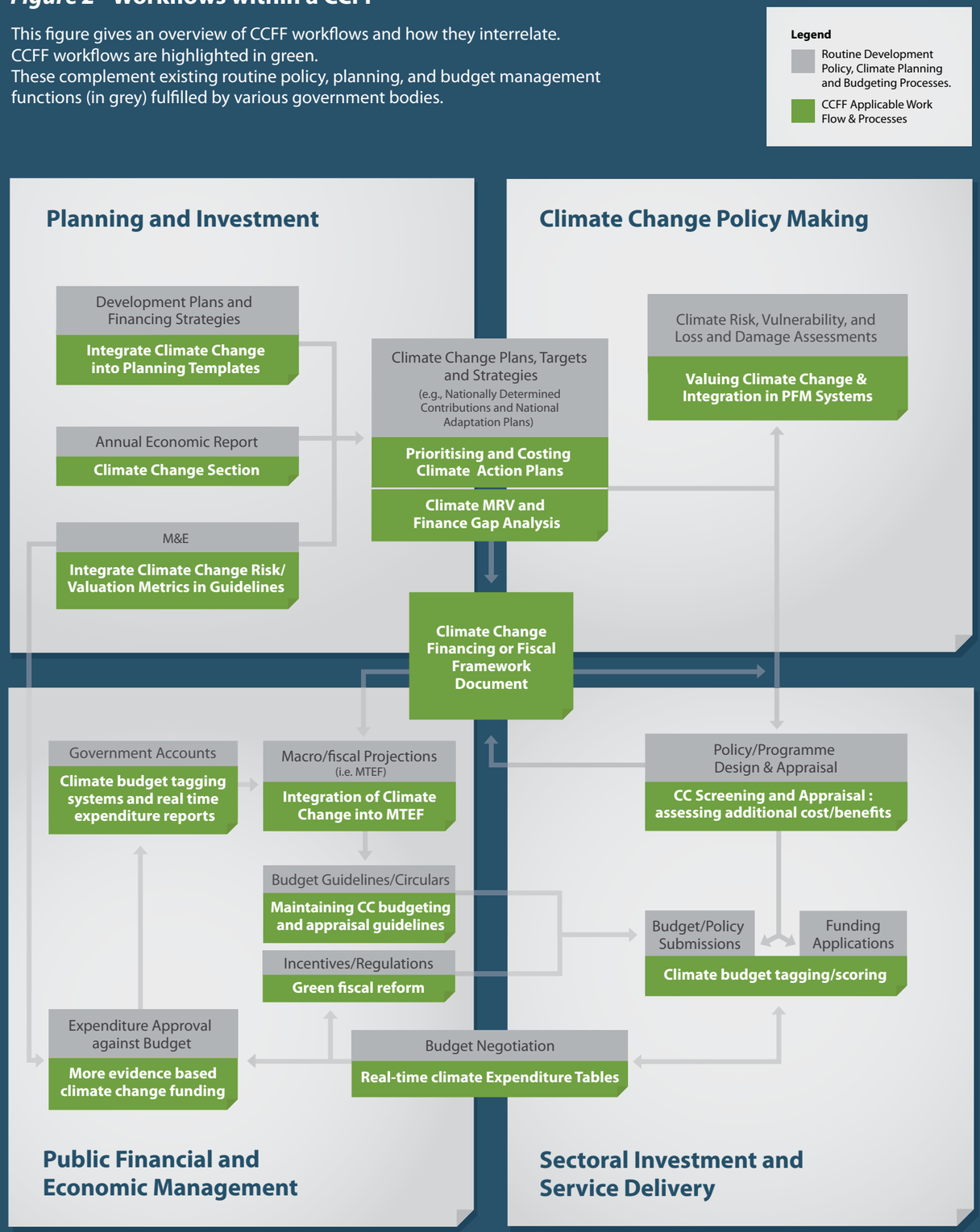


Note that the diagram above represents a stylised/suggested model and is not proscriptive. Different countries will have different models according to their institutional arrangements.

CCPB MoF MoP LM's AA's

Figure 2 - Workflows within a CCFF

This figure gives an overview of CCFF workflows and how they interrelate.
CCFF workflows are highlighted in green.
These complement existing routine policy, planning, and budget management functions (in grey) fulfilled by various government bodies.



Progress with CCFFs

In late 2016, the Governance of Climate Change Financing team (GCCF) in UNDP's Bangkok Regional Hub undertook a stock take of existing and ongoing CCFF work in Asia Pacific. The report, *Charting New Territory: A Stocktake of Climate Change Financing Frameworks in the Asia-Pacific* provides a brief overview of CCFF work to date; a summary of a wider stock take's key findings; and finally lists the main achievements, challenges and priorities of CCFFs by country. It found that CCFF work was completed, or is underway, in at least seven countries (i.e., Afghanistan, Bangladesh, Cambodia, Indonesia, Nepal, and Pakistan) and in several states of India. Other countries have undertaken work on some elements of a CCFF (e.g., Bhutan, Philippines, Thailand, Vietnam and several Pacific Island States).

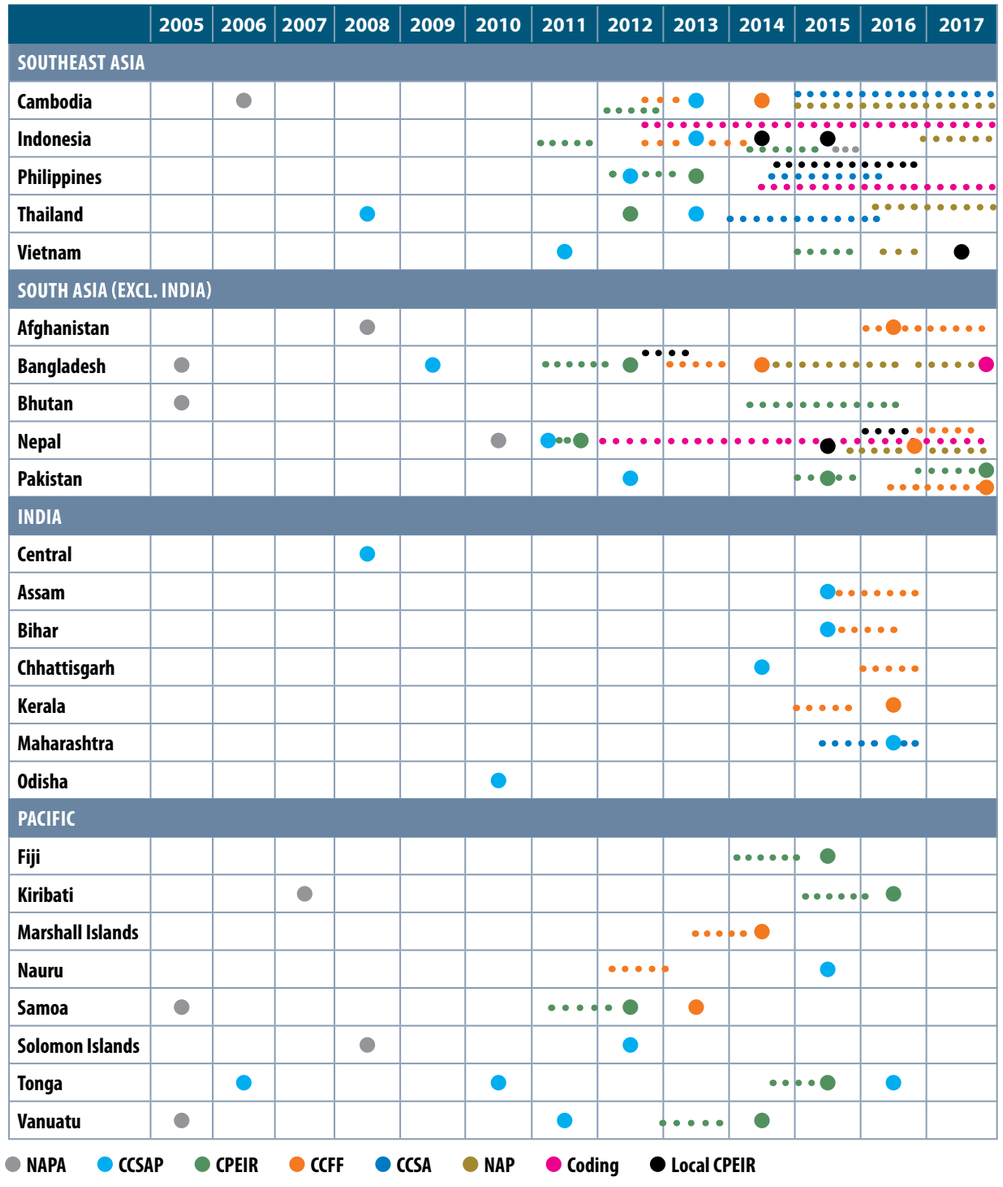
Cambodia's CCFF

Cambodia's Climate Change Financing Framework (CCFF) presents a framework for managing climate change finance across government. The CCFF built on Cambodia's national climate change strategy, the cross-sectoral climate change action planning process and expenditure analysis (using tools such as the CPEIR).

An overview of Cambodia's CCFF can be seen here:
www.climatefinance-developmenteffectiveness.org/publications

Kick-starting a CCFF is often, though not always, informed by first undertaking a Climate Change Public Expenditure and Institutional Review (CPEIR) and using the results to inform a broader and more complex process. In some cases, national adaptation planning exercises (e.g., NAPs or NAPAs) have given rise to CCFF workflows aimed at prioritising key actions and ensuring more consistent financing for them. That's because these processes often serve as the basis for elaborating short and medium-term priorities and integrating them into national and sectoral strategies (e.g., poverty reduction strategic papers (PRSP), national socio-economic development plans, etc.). For more details on how CCFF development has been sequenced with other key climate policy and budgeting activities, refer to Figure 3.

Figure 3 **- Timeline of Work on CCFFs and Related Initiatives in Asia and the Pacific**



CCFFS and related work

1. **Afghanistan** Afghanistan CCFF, underway in 2016
2. **Bangladesh** Bangladesh CCFF, published in 2014
3. **Cambodia** Cambodia CCFF published in 2014, plus related follow-up work with selected line ministries in 2015 and 2016
4. **India** In India, during 2015 and 2016, work on: State Action Plan (SAP) Financing Frameworks (referred to as SAPFIN) in Assam, Bihar, Chhattisgarh and Kerala; and work on the effectiveness of SAP actions in Maharashtra
5. **Indonesia** In Indonesia, work on: budget coding, ongoing and starting in 2013; a Mitigation Fiscal Framework (MFF) published in 2014; a Green Planning and Budgeting (GPB) Strategy, published in 2015; and a Provincial CPEIR for 'Babel' and NTT provinces done in 2015
6. **Pakistan** Pakistan CPEIR (2015, updated 2017), Provincial CCFFs (planned 2018), Pakistan CCFF (Completed 2017)

Other Initiatives, including CPEIRs and CCFAFs

7. **Nepal** Nepal CPEIR (2011); budget coding (ongoing, started in 2013); and planned CCFF (2016)
8. **Bhutan** Bhutan Public Environment Expenditure Review (PEER) published in (2014)
9. **Pacific** Pacific countries have undertaken Climate Change Finance Assessment Frameworks (CCFAFs) since 2013 and CPEIRs in Samoa and Vanuatu
10. **Philippines** Philippines CPEIR (2012), budget tagging complete
11. **Vietnam** Vietnam CPEIR (2015) Mekong sub-region CC & DRR PER (2017)
12. **China** China national CPEIR (2015) and in 2016 in Hebei Province
13. **Thailand** Thailand work on CCBA in 2014/15, CPEIR in 2012

Key Sources for Chapter 1

Overview of CCFF development in Asia. The UNDP CCFF stock take report can be found on the UNDP's Governance of Climate Change Finance website[1] and here[2].

Climate Mainstreaming. UNDP and UN Environment have produced a handbook on mainstreaming poverty, environment and climate change into planning and budgeting at http://www.undp.org/content/ undp/en/home/librarypage/poverty-reduction/mainstreaming-environment-and-climate-for-poverty- reduction-and-.html. OECD have also produced a similar guide at https://www.oecd.org/dac/ environment-development/46905379.pdf.

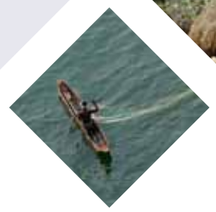
The World Bank has produced a series of 8 guides for different aspects of mainstreaming which are listed at http://www.seachangecop.org/sites/default/files/documents/2012%2001%20World%20Bank%20- %20PSIA-Climate-Change.pdf.http://www.undp.org/content/undp/en/home/librarypage/poverty- reduction/mainstreaming-environment-and-climate-for-poverty-reduction-and-.html.

Related Climate Change Planning Initiatives. UNFCCC maintain a range of online resources, including: a registry of NDCs at http://unfccc.int/focus/ndc_registry/items/9433.php; a website with supporting material on the NAP process at: www4.unfccc.int/nap/Pages/Home.aspx, and a NAPA database at http://unfccc.int/national_reports/napa/items/2719.php

Tools. The UNFCCC has produced a compendium of tools for evaluating the impact of climate change, vulnerability to climate change, and the effectiveness of adaptation to climate change at http://unfccc.int/files/ adaptation/methodologies_for/vulnerability_and_adaptation/application/pdf/ consolidated_version_updated_021204.pdf. This includes many of the tools referred to in other sources in this guideline, as well as detailed lists of sector-specific tools: http://unfccc.int/files/ adaptation/methodologies_for/vulnerability_and_adaptation/application/pdf/ consolidated_version_updated_021204.pdf.

[1] www.cfade.org

[2] https://www.climatefinance- developmenteffectiveness.org/sites/default/files/documents/09_06_16/Charting%20New%20Territory%20- %20A%20Stocktake%20of%20Climate%20Change%20Financing%20Frameworks%20in%20Asia%20Pacific.pdf



2. CCFF Workflows for an Integrated, Evidenced Based Response

This chapter describes how CCFFs can contribute to realising climate change strategies and action plans (CCSAPs) and national climate finance readiness through a stronger evidence-base. CCFF tools and workflows support truly integrated financing strategies, ensuring that actions can be financed in a more prioritized, rational way in line with broader sustainable development goals. This chapter outlines how climate risk and assessments of damages and losses can inform CCSAPs and their monitoring and be better integrated into PFM systems, as well as how a better understanding of climate-related expenditure can inform line ministry budgets. It is particularly relevant for climate change Policy Bodies (CCPBs) though it also refers to responsibilities for MoF and LMs.

2.1 Valuing Climate Change and Integration into PFM Systems:

Climate risk, vulnerability, loss and damage assessments

Most countries have conducted some scientific assessments of their overall level of climate risk and vulnerabilities. This entails cataloguing a wide range of potential effects and impact chains in different sectors associated with extraordinary events, such as severe heatwaves or glacial outburst floods, as well as slow onset changes, such as desertification, sea level rise, and ocean acidification. These scenarios are generally all linked to projected levels of increased concentrations of greenhouse gases in the atmosphere.

Based on such climate risk modelling, vulnerability assessments try to predict the extent of the impacts that would affect the country. They generally look at the potential magnitude of changes (exposure), the characteristics of the system (sensitivity), and the ability of people and ecosystems to cope (adaptive capacities). Capturing all these parameters in a transversal manner across ecological, social, and economic factors can be methodologically challenging.

Related to climate risk assessments, vulnerability indices compare variations within and between countries. These often include or draw upon information compiled through various discrete research studies that focus on different threats, impact chains, or sectors.

Loss and damages can refer to both economic or non-economic harm. This can be incurred as a result of extraordinary events such as weather-related disasters (e.g., cyclones), as well as from slow-onset events (e.g., destruction of farmland by saline intrusion due to gradual sea-level rise). In the disaster management sphere, losses refer to those impacts to tangible assets or wealth impacts that can be marketised. Impacts are generally accounted for and distinguished between direct and indirect impacts. Whereas the former refers to physical damage to properties from direct contact with the hazard, i.e. destruction of infrastructure, inventories, etc., indirect damage refers to interruptions in the flow of goods and services.

Under the Warsaw International Mechanism (WIM), established under the UNFCCC process, the term "Loss and Damage" has been interpreted to refer to the irreparable harm caused by climate impacts that are permanent or irreversible, which can be expressed in economic as well as in non-economic terms. While this is not the meaning ascribed to in this guidebook, some of the methods and tools used to value climate change impacts could be applicable to informing policy discussions under the WIM.

Why is this important in a CCFF context?

While the findings of climate risk and vulnerability assessments are usually summarised in national (or sub-national) CCSAPs, they are rarely comprehensive. They ordinarily attempt to quantify the scale of risks (e.g. area or number of people affected by floods or drought), and analyses of past or expected loss and damages are most often expressed in physical terms (e.g., hectares of crops destroyed or kWh of electric power lost), rather than economic ones.

More comprehensive analyses of the macroeconomic and fiscal cost of climate change have rarely been undertaken in developing countries. Although some countries have established databases for logging and monitoring trends in disaster-related damages and physical losses, few countries have attempted to systematically capture climate-related losses and damages to infrastructure and households. Partly this is due to methodological complexity as well as the political sensitivity of this work, and the limited capacity in place in many developing countries to conduct these more actuarial studies.

Capturing the macro-fiscal implications of climate change, and monetising losses and damages linked to climate impacts is a key building block of a CCFF. For policymakers and planners to take climate change into account in a more convincing way, the threat posed by climate-related hazards to current and future assets must be expressed in economic and financial terms.

This valuation requires analysing historical data to better understand the current impacts of climate-related losses and damages on an economy, as well as modelling this to take likely future impacts into account.

This requires extensive capacity building and educating end-users at various levels on how to use this evidence effectively to make more informed planning, budget allocation, and investment decisions. It also entails more concerted efforts to develop collaboration between government and non-state actors to build up an evidence basis, as well as dedicated state resources to maintain this information in a more systematic, and user-friendly way.

This work stream would inform others related to budget classification and coding (see section 2.2), developing costing and financing scenarios (see section 2.4), screening and appraisal (see section 4.1), and estimating the effectiveness of adaptation actions (see section 5.2). It will also require analysing changes in expenditure patterns, improving climate-proofing through more climate sensitive design and leveraging public finance through regulations and incentives that encourage more private sector finance.

By translating available evidence into economic and/or monetary terms and linking this to public economic and financial management processes, a CCFF takes routine climate policy work one step further. By linking these two normally siloed work streams, a CCFF can help governments elaborate more integrated national financing strategies, including those dedicated to closing the "adaptation gap". That is because the effectiveness of climate finance flows to mitigate the economic impact of specific loss and damage to sectors or sub-regions is an important factor in quantifying this gap (see section 2.4).

Moving forward: Improving Data Collection

In most countries, CCSAPs include a section describing overall national vulnerability and how climate change would affect regions and sectors. A CCFF builds on these assessments to value the implications of projected losses and damages resulting from climate change along the three primary dimensions of sustainable development:

- **Economic:** projecting loss and damage as a function of national or sectoral GDP loss.
- **Social:** quantifying impacts as a function of social vulnerability, e.g., how climate change effects might exacerbate poverty and inequality levels overall or incidence among particular 'at-risk' groups.
- **Environmental:** projecting the economic impact of loss or harm to natural resources, ecosystem services, and biodiversity as a result of climate change.

There is a key role for the CCPB and the MoP to play in stock taking and aggregating various existing research. This requires pulling together the most robust elements from all sources and using expert judgement to fill knowledge gaps. In many cases, pulling information together into a more unified, coherent database will not be the only exigency, but also digitising and translating data into more user-friendly formats.

Overarching guidance for this work is provided in the list of resources. More specific guidance and details regarding how this should be undertaken will be presented in a subsequent technical note. While limited, the body of evidence on valuing climate change impacts is continually growing. Given this very real constraint, countries will often need to compile estimates through a triangulation of data from a variety of sources. These include the following:

- Research studies undertaken by institutes and specialist CSOs that analyse historical evidence over recent decades. These sometimes use a Ricardian approach, relying on differences between locations to act as a proxy for differences over time.
- Project appraisal and evaluation studies, often undertaken by consultants and CSOs. These often rely on research evidence, supplemented by participatory techniques to consult local people.

Very few such studies already deal with this issue in a comprehensive way, but they may fill some gaps. For example, a project that introduces drought-resilient seeds may have evidence on existing loss caused by drought to crops planted with normal seeds.

- Simulation modelling work such as in Integrated Assessment Models (IAMs), using Computable General Equilibrium (CGE) techniques. These range greatly from models of one or two relationships, calibrated through statistical analysis, to highly complex models with hundreds of interrelated variables. These tend to produce projections for at least ten sectors of the economy, with each sector modelled using a variety of variables. The most complex models use inter-related modules, linked to each other, and are normally managed by only a small number of academic institutions globally.
- In addition to these sources, directly devoted to generating evidence, it is often useful to widen research to studies that do not address explicitly valuing damages and losses from climate change, but rather fill gaps on important relationships between key variables that determine effectiveness.

In stock taking available data sets, it should be possible to select sources to combine in data triangulation. For an example of how this was carried out, please see Box 1.

***Box 1* - Example of Data Triangulation**

The Financing Framework for the Chhattisgarh State Action Plan on Climate Change (SAPFIN) estimated that the agriculture sector would incur damage and losses from climate change equal to 24.5% of crop GDP. This was half of agricultural GDP, which made up 16.1% of total GDP. This figure was primarily based on an analysis of average yields over the last 10 years, and assumed that future yield would be best predicated by the two highest yielding years. It also assumed that losses for variable climate in bad years would double by 2050, based on the SREX report (IPCC 2012).

Confidence in this result was supported by triangulation from several sources. An IAM modelling study for South Asia suggested that crop yields in NE India could decline by about 10% (Ahmed and Suphachalasai 2014). Another study that correlated climate data with spatial and temporal variations in recent crop yields concluded that output would be 10% lower by 2040 (Guiteras 2009). These studies both used average temperature and rainfall in their vulnerability analyses, which are threats likely to be at least as important than more variable rainfall. This suggests that the actual economic loss will likely be over 20%, consistent with the figure of assumed in the SAPFIN.

Source: Chhattisgarh SAPFIN Report 2016

Points to Consider

Political Framing

Some countries prefer to frame this analysis in a more positive light as building resilience, rather than reducing vulnerability. They thus consider the baseline development pathway as already incorporating current expected climate change impacts. This focus draws attention to the attributes of adaptation that will ensure positive results, such as contributions to long-term green growth. They will thus screen and appraise various potential adaptation actions using CCSA with an eye toward ensuring that growth and development is more resilient to climate change.

Scope of analysis

Occasionally, climate valuation analysis also considers social and environmental dimensions related to Green GDP. While theoretically consistent with broader principles, it adds a layer of complexity to an already quite complex task. Most CCFF work to date has started by considering a narrow interpretation of economic activity and 'conventional GDP'.

Capturing co-benefits of adaptation

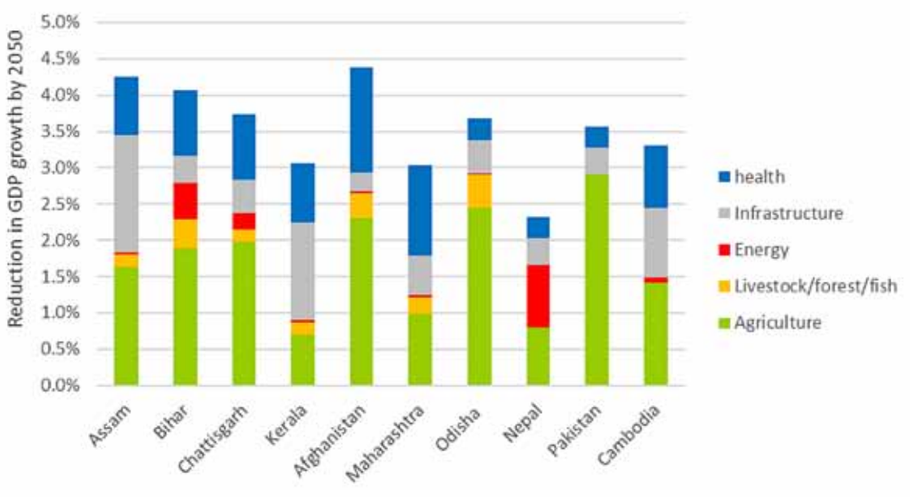
The potential co-benefits of adaptation measures typically isn't taken into account when quantifying the potential economic effects of climate change. While this is not fully accurate, it also allows for the effectiveness of all adaptation actions to be compared with some level of objectivity. Using a metric for approximating climate change relevance (CC%) can be applied to facilitate this comparison (see section 2.2).

Estimating macroeconomic loss

Once reliable sources and figures have been identified and triangulated, the figures must be carefully reported on, as explained in Box 2. For very fast-growing countries, projected GDP could be only 3 or 4 times current levels, instead of 5 or 6 times higher. For countries that have less potential for growth it is likely to mean that growth is impossible after twenty or thirty years. A preliminary study taking into account available information in a handful of countries begins to make such estimates.

This highlights not only the methodological complexity, but also the benefits to a CCFF from having a unified measure of future macro-fiscal losses expressed in economic and monetary terms.

Macro-fiscal losses estimated from CCFF work



Roles and Responsibilities

There is a growing body of evidence on valuing climate effects which comes from a range of sources. ***Much of this evidence comes from the work of specialist CSOs engaged in appraisal and evaluation work.*** The CCFF work funded by UNDP has helped compile and interpret this experience, notably in Cambodia, Indonesia and Thailand. Many countries now have at least some evidence of each type. CCFF work typically involves searching for all sources that can be located within the time and resources available and triangulating amongst them. To ensure that the evidence is compiled and is accessible, ***the CCPB needs to build a library of evidence on expected losses and damage, and to support knowledge management systems that ensure that this library is widely available.***

The CCPB and other non-executive actors can play a strong role in ensuring that evidence on macro-fiscal losses is presented clearly to politicians, government officials, parliamentarians, and the media. CCPBs can play a role in guiding and ensuring quality control of vulnerability assessments and macro-fiscal losses in their sector *vis-à-vis* Line Ministries. For example, they can assist in defining appropriate targets and using them to guide expenditure allocations and programme revision. ***LMs need to continually improve the estimates of macro-fiscal losses in their sector, as new evidence becomes available.***

Box 2 - Reporting on Macro-Fiscal Losses

Studies that review Macro-Fiscal Losses often report the results in ambiguous ways, typically quoting figures of between 1% and 5% of GDP in 2050, but failing to state clearly what the figures refer to.

The meaning of these figures depends on the analytical approach and this is not always obvious from the reports. Key sources of evidence include: the IPCC Third Assessment Report (Mendelsohn, Morrison et al. 1998, Nordhaus and Boyer 2000, IPCC 2001, Tol 2002); the Stern Report (Stern 2006); the IPCC Fourth and Fifth Assessment Reports (IPCC 2007) (IPCC 2014); the World Bank work on the economic impact of climate change (World Bank 2010, World Bank 2013); the ADB modeling work for S and SE Asia (Ahmed and Suphachalasai 2014) (ADB 2009); and a variety of sectoral analysis (UNFCCC online) (IPCC 2014) using simulation models (Parry 2004, Nelson, Rosegrant et al. 2010, FAO undated), historical evidence (IPCC 2014) and Ricardian techniques (Seo and Mendelsohn 2007, Passel, Massette et al. 2012). Further details are provided in a separate technical note.

In most cases, the headline figure appears to refer to the reduction in economic growth in 2050. The impact of climate change on absolute GDP in 2050 is determined by the following key principles: a) there is already some macro-fiscal losses associated with current climate and this is acting as a brake on current growth; b) the losses will grow gradually as climate change worsens; and c) although losses from climate change starts small, the impact is cumulative, and for some threats, could become larger in the mid to long term.

2.2 Classifying Climate Change Expenditure: ensuring consistent definitions

Why is this important in a CCFF scenario

Classifying expenditure per climate change relevance is a central component of CCFF work and one of the biggest challenges as there are no universally accepted definitions or standards. Classification is required to monitor trends in expenditure (see section 2.4) and, because it is based on an analysis of how climate change affects expenditure, it also provides the incentive for incorporating climate change into the design of programmes.

Moving Forward

Climate expenditure typically falls into several different categories or typologies. Most are constituted as part of the routine delivery of goods and services as they have other primary social and economic objectives. There are some large expenditures that have only small climate relevance (e.g. primary health and roads). Simply adding the expenditure of all climate related efforts means that the overall trends are dominated by a few large items that may not be the most relevant or important climate actions. This problem is addressed by classifying the climate expenditure into different degrees of climate relevance.

Past work on classifying past climate expenditure[3] has shown that typically at least 150 separate expenditure items have some degree of climate relevance. Some county analyses have as many as 1,000. Although, many items are often similar and can be classified as a group.

Three main approaches have been used in classifying climate related expenditure, which can be considered as complementary, rather than as alternatives.

- **Binomial:** The most basic approach uses an initial 'yes/no' classification such that all expenditure judged to reduce GHG emissions and/or macro-fiscal losses is classified as climate finance. This system is used for most international climate finance monitoring, such as that by WRI, CPI and ODI (Bodnar, Brown et al. 2015). It is also used in some government CCFF work (e.g. in Odisha).
- **Objective-based:** The yes/no approach to climate expenditure classification can be made more robust by distinguishing levels of relevancy, typically on the basis of an activity's explicit or implicit objectives; for example: high, mid, low and no relevance. This approach has been used for the OECD/DAC climate markers, in most early CPEIRs and in the countries where pilot budget markers have been introduced (i.e., Nepal and Indonesia). In CPEIR work, the high/mid/low categories were associated with weights (e.g. 75%/50%/25% respectively) which were used to give a single measure of total weighted expenditure.

[3] Of interest here is work by UNStats: https://unstats.un.org/unsd/environment/climatechange.html and the comparitive analysis of definitions used, by UNFCCC http://unfccc.int/files/cooperation_and_support/financial_mechanism/standing_committee/application/pdf/2016_ba_technical_report.pdf

- **Estimating co-benefits:** This approach aims to roughly estimate the share of activity financing that can provide direct climate change co-benefits using climate change sensitive appraisal (CCSA - see section 4.1). This may be done in a rapid and qualitative way or in a more detailed and quantitative way. The experience with CCSA has been compiled into a table that gives typical default ranges for the scores which can be used for rapid classification. While this approach is the most robust or objective, it also requires the greatest level of capacity.

These methods are all useful and play different roles. Most countries have started an overview of all expenditure items, including a yes/no classification, as a screening exercise and to build awareness, and then adding an assessment of high/mid/low relevance, based on objectives. This first overview is usually undertaken by a small team of experts, with some consultation with government. In a few cases, the experts have done a rapid desk study to build awareness within government before moving on to consultation.

As this work evolves, demand for more structured and mature methods of scoring are often created. These can be based on CCSA, using whatever level of detail is appropriate for the country and type of expenditure. Where weights are used, the basis for the weighting should be clarified and, if the system of weighting is changed, then adjustments need to be made to map one set of weights to another and ensure that the trends in weighted expenditure are based on consistent methods. One option is to start directly with some more detailed classification, applying CCSA methods to a small pilot sample of actions (examples of this approach include Thailand and Maharashtra).

Example of Project Typologies for Climate-Relevant Weighting used in Thailand

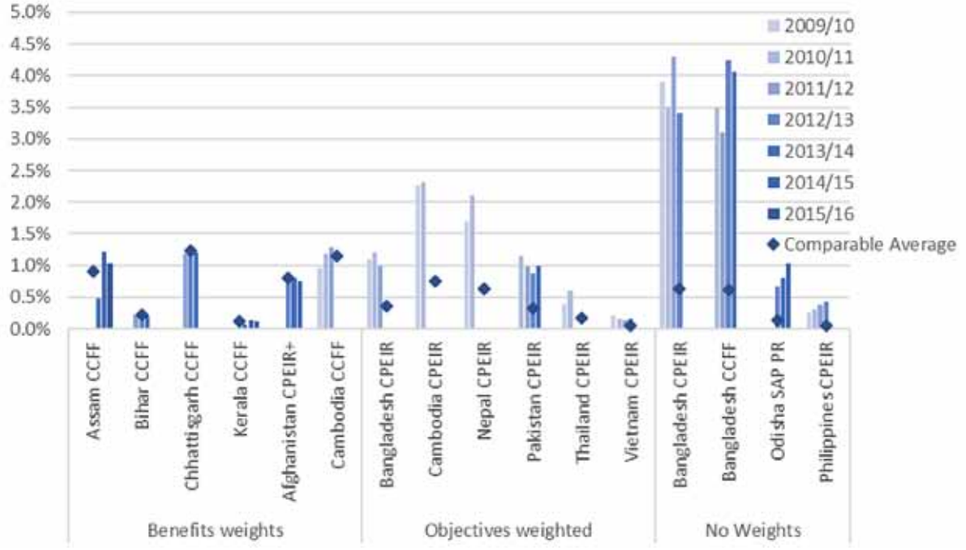
Type	Adaptation Projects	Mitigation Projects
High CC Benefits	• Vulnerability analysis • Community resilience planning • Protection for floods and sea level rise • Drought resistant crop varieties • Flood proofing roads, irrigation etc.	• Research on cost effectiveness of reducing GHG emissions • Studies of loss and damages from not reducing GHG emissions • Public awareness of GHG emissions
Mixed CC and sustainable development benefits	• Biodiversity corridors • Irrigation Schemes • Community forestry • Untargeted water/sanitation • Forward plans to tackle CC diseases • Urban plans to reduce vulnerability	• Renewable energy • Reforestation • Energy efficiency • Public transport
Negative CC Benefits[1]	• Unsustainable groundwater use • Promoting water intensive crops	• Roads that increase deforestation • Fossil fuel subsidies

[1] Negative CC Benefits occur if CC reduces the performance of projects either because of higher loss and damageor because of high GHG emissions. Such projects should normally be generating high social development benefits or should not be considered for funding.

The analysis needs to happen at a level of expenditure where each unit of expenditure contains activities that are all similarly affected by climate change. For development expenditures, this might be at a project level. For recurrent expenditure, it is likely to be two or three levels below a ministry (if the PFM system provides data at that level).

***Figure 4* - Trends in Climate Change Expenditure**

The figure below presents trends in climate change expenditure as a % of GDP based on data generated by CCFF and CPEIR work in Asia. It groups results into the three different approaches to classification outlined above. The diamonds compare the various sources, after dividing the objectives-weighted approach results by three and the unweighted results by six. These reflect a rough average conversion factor, taken across all the countries, since the most appropriate conversion will depend on the composition of expenditure and on judgements taken in assigning scores. The results suggest that Assam, Bangladesh, Cambodia and Nepal have relatively higher levels of climate expenditures, compared to Thailand, Vietnam and the Philippines. This potentially reflects the higher stage of economic and private sector development in the latter set of countries.



Source: CPEIR and CCFF Reports

There can be large disparity in the results of climate expenditure reviews, based on different approaches and methods taken to classify. Results from an objectives-based or binomial weighted approach is typically 3 to 6 times larger respectively than an approach that directly tries to quantify co-benefits. Given the risk of over-inflating climate related expenditures through the classification process if all costs are added without gauging them by relative importance, complementary methods can be utilised. This avoids less relevant, costly actions being outweighed in genuine importance.

To date, CCFF work has focused on broad trends and patterns and there has been little distinction between budget and actual data. In future, there may be some value in distinguishing between budget and actual expenditure, especially if this throws light on options for managing uncertain revenue and expenditure that is related to climate change and the use of contingencies and supplementary budget.

Finally, although most CCFF effort to date has focused on public expenditure, there has been growing interest in climate change actions that may have revenue implications (e.g. regulations and incentives). These can be considered as 'negative expenditure' and, when this Guidance Note refers to climate change expenditure, it should be born in mind that this may include negative expenditure.

Roles and Responsibilities

Responsibility for classification of expenditure will normally be devolved to the Line Ministries responsible for the spending, as they would best understand the underlying activities and their relative benefits. Moreover, this practice would build ownership and embed practices. Line Ministries may benefit from involving CSOs, who often have new and innovative appreciation of similar programmes. This will help broaden capacity and awareness.

To ensure that the classification is comparable, the CCPB could consider defining a standard national approach to classifying climate change expenditure and produce country specific guidelines for this approach. It should then provide technical support to Line Ministries and manage a system for providing quality control.

2.3 Options for Expanding the Scope of Expenditures Covered in a CCFF

What is the scope of climate change expenditure covered?

Most CCFF work to date has focused on public expenditure at a central and provincial or state level, usually including on and off budget expenditure from domestic and international sources. Private investments, local public investments, regulatory expenditure and expenditures with negative impacts on adaptation or mitigation have generally been excluded.

Why is this important in a CCFF context?

While the initial focus of CCFFs on central and provincial or state levels has been effective, it is a framework that could be equally effectively applied to other levels of government. Local governments also manage large programmes of expenditure.

Moving Forward:

Options for widening the scope of CCFF work includes:

- **Local Government:** In many countries, most climate expenditure is incurred at local levels, because this is where natural resources are managed. Some CCFFs have already made efforts to classify and estimate trends in climate change expenditure at local levels. In particular, there is interest in possibilities for changing transfers to give incentives to report on climate change related activities at the local level. Most CPEIRs also address challenges and opportunities to better track climate finance at the local level, and in some countries (e.g., Indonesia, Nepal, Pakistan, Vietnam) CPEIRs have been conducted for local governments.
- **Revenue, Regulations and Incentives:** There is growing global interest and recognition that the state plays a critical role in engaging the private sector to mobilize new and additional climate finance through new regulations, incentives and fiscal policies. Public funding for these, including required enforcement mechanisms, is generally reflected in the state budget, either as fiscal transfers by the MOF to private financial institutions or as 'negative expenditure' associated with reduced tax revenue. While the focus of these fiscal policy reforms has been mainly on climate mitigation, there has been increased appetite to develop schemes suitable for adaptation goals (e.g., through state subsidies to weather-risk insurance schemes for farmers or providing tax breaks to businesses that invest in supply chain management with positive adaptation benefits). A key focus for future CCFF work streams is likely to be on expenditure associated with these policies as reflected in budgets for line ministries and investment agencies.
- **Parastatals and Agencies:** Many parastatals and agencies are involved in work that is affected by climate change, including those that work in water, energy, waste, environment, agriculture and some aspects of rural development and welfare. The response of these parastatals to climate change will have implications for their profitability and may therefore affect public finance, either through changes in investment requirements, or through subsidies and taxes.

- **Private Sector:** Although there is great interest in the potential role of the private sector in responding to climate change, comprehensively tracking and reporting private sector climate finance has been limited, globally. Under the Low-Emission Capacity Building partnership led by UNDP, a methodology for undertaking a private climate finance public expenditure review (PCEIR) was elaborated in 2015. This is being piloted in a number of countries, including Thailand and Vietnam. The scope of these is often limited to only the most climate-relevant sectors, due to lack of data availability or access. The OECD has also established a collaborative research group to develop methodological guidance on these issues.

  To the extent that data is available, the scope mainly focuses on mitigation-oriented climate finance. For example, the annual Bloomberg New Energy Finance Global Trends in Renewable Energy Finance report is one excellent resource. The Climate Policy Initiative (CPI) likewise includes private climate finance in their annual 'Climate Finance Landscape' report. However, the methodology relies upon information from financial sector activities, which is generally hard to obtain in the developing and middle-income countries where CCFFs have been undertaken. Thus, including private capital flows in CCFFs has been limited to illustrative work, that looks at: a) details of private sector investment including in national accounts; and b) evidence on leveraging ratios (i.e. the extent to which public expenditure of different types leads to private expenditure).

***Box 3* - Example of Private Sector Finance in CCFFs**

Indonesia. The Indonesia Green Planning and Budgeting (GPB) Strategy considered the extent to which different types of fiscal policy could 'leverage' private expenditure on related climate actions (MoF 2014). It explored how to close climate financing gaps by adopting a phased strategy of moving from direct expenditure to transfers and, ultimately, to regulations. Building on comparative international research in the Green Investment Report and by IFC and WRI, it assumed that direct public expenditure had leverage ratios of less than 1:1 (i.e., 1 unit of public expenditure triggered less than 1 unit of private expenditure). Policies involving public transfers (e.g. tax incentives and subsidies) had ratios of 2 to 4 and engaging the financial sector in policies (e.g. loanable funds, interest rate subsidies and loan guarantees) increased the ratio to between 3 and 5. Relying on regulations could lead to much higher ratios of around 10.

Bangladesh. The Climate Fiscal Framework (2014) sketched out options to drive investment in low-carbon infrastructure. These included introducing a carbon tax, modifying electricity tariffs, and removing fossil-fuel subsidies. It also reviewed mechanisms and models for crowding-in private investment through the development of new green banking operations at Bangladesh Bank.

Cambodia. Cambodia's CCFF reviewed the potential leveraging effects of a range of policies, including those linked promoting CDM and REDD+ investment. It also briefly assessed potential private sector interest in solar power and industrial energy efficiency investment.

China. China's Green Finance Initiative, promoted at the 2016 G20 summit is a joint venture between the state and the People's Bank of China. It focuses on establishing both regulatory policies and fiscal guidelines such as subsidies and state guarantees to green the financial system and encourage greater private investment in climate-friendly projects. The initiative outlines a series of reforms expected to increase market opportunities for a range of green financial instruments, including climate bonds.

Maharashtra. As part of related CCFF initiatives, the state government of Maharashtra identified 15 different models and typical areas for potential private sector engagement in climate action, including: innovative financial instruments; channelling Corporate Social Responsibility funds; making supply chains more resilient; corporate mitigation targets; and investment opportunities for mitigation and adaptation, including in information services. The analysis has not yet led to an integrated assessment of the potential financial implications.

UK. The UK Carbon Plan contains no explicit public expenditure commitments as government expected the entire cost to be borne by the private sector. However, the U.K. government subsidized a Green Investment Bank, which has in turn provided concessional finance and catalysed several successful low-carbon market transformation activities to the point where it is now at the stage of being fully privatized. Several developing countries are looking to this model to set up green banks or national climate funds.

Points to Consider

"Localising" of CCFF work. The level of detail and quality of public finance data is varied at the local level and officials are usually less used to formal analysis. However, local officials may be well informed about evidence on recent climate change and may already be taking these changes into account.

Including Parastatals and Agencies. Parastatals are often significant sources of climate-related public expenditure, particularly in middle income countries. While important, it is often not easy to analyse the implications of climate investment at this level, as many do not provide detailed accounts and have little interest in discussing their profitability more than necessary.

Maladaptation and 'Mal-mitigation'. The political sensitivities regarding maladaptation and 'mal-mitigation' can be handled, to some extent, by taking a constructive approach to defining complementary activities that can offset any maladaptation and mal-mitigation effects.

Private Investment. Public finance and spending are important means to crowd-in private capital flows required to achieve climate strategies in all countries. Developing countries, however, require even more significant resources to catalyse smarter financial instruments, including resources to develop workable fiscal reforms and hybrid funding models like the U.K. Green Investment Bank as well as to build capacity to monitor and enforce new regulations.

Roles and Responsibilities

Once the classification of public expenditure is secure the CCPB can provide leadership and build consensus around how to expand the scope of CCFF work and thereby ensure more comprehensive or integrated planning. This needs to be done in a way that is achievable, given the resources available and the political sensitivities. In practice, this may mean that new areas of work are added gradually, to avoid overloading scarce capacity and ensure that institutional changes are sustained.

2.4 Expenditure Tracking: monitoring past and future trends

What is Expenditure Tracking?

Expenditure Tracking is the analysis of past expenditure and shows changes in the extent to which governments have prioritised climate change related work while providing a sense of whether climate related spending is increasing or decreasing.

Why is this important in a CCFF context?

Analysis of past expenditure patterns is highlights the status of programmes and how they are influencing the underlying trend. The analysis of past expenditure also provides the baseline for future scenarios (see section 3.1).

Moving Forward

In most countries, analysing past expenditure trends has been done as part of a CPEIR before moving on to CCFF work, although some countries (Afghanistan, India) have combined elements of the two. Most CCFF work to date has focused on public expenditure, but there is growing interest in extending the work to other areas, including negative expenditures and private climate finance (see section 2.3). The analysis of expenditure may rely on budget figures or on accounts figures, depending largely on which is most easily available and on the practical role of the budget in the PFM practices.

The challenges with presenting expenditure trends are mostly associated with classification and coding, as described in the previous section. The coding of the budget might include a yes/no tag, a high-mid-low relevance category or a score. In practice, most countries will want to rely on only one system. If scoring systems are changed (e.g. when moving from a system based on objectives to one based on CCSA) then the data from the old system will need to be adjusted to use the new scores, to ensure that the trends are consistent.

Once the tags and/or scores have been defined, it is a simple matter to apply these to budget and accounts data, and so to produce virtual budget tables of past expenditure trends and future budget allocations, to assess whether climate change related expenditure has been increasing and is continuing to increase.

For example, in Nepal, annex 16 of the budget statement includes climate change expenditure assessments according to function and divided into high, mid and low climate change relevance. No trends are presented in this table and it is compiled once the budget has been agreed, rather than during negotiations.

Points to Consider

In addition to the virtual budget tables on climate related expenditure in the budget/ accounts, it may be useful to have specific tables that report on expenditure on actions defined in climate targets and strategies (e.g., NDCs). This might form part of the budget or be included in annual reports devoted to the progress of reaching those targets (see section 5.1).

Most countries will want to pilot the approach by using spreadsheet analysis, applied to tables produced by the PFM system. Once they are confident in the coding system to be used, then it may be useful to consider including the code in the budget software. This should mean that virtual budget tables of climate change expenditure can be produced automatically, in real time, as the budget is being negotiated and discussed in parliament.

Parliaments should play an important role in approving budgets and accounts. Although the parliamentary budget debate will often involve a simple approval of the budget, governments will often have to ensure, in advance, that they have the support of parliament, so discussions with key members and committees of parliament will usually happen in advance of the formal budget debate. These discussions should be informed by the presentation of climate change expenditure virtual budget tables showing parliament how the budget proposals will impact on climate change.

Many countries now welcome wider public debate in the budget as part of wider validation of the political choices. This can be facilitated by 'people's budgets' presented in easily accessible formats (e.g. wide use of infographics) and language without jargon. These budgets should include reference to trends in climate expenditure.

Roles and Responsibilities

The MoF is responsible for deciding how to introduce coding into the budget process, including what programme of piloting is appropriate and whether to introduce a budget marker or code into the budget software. The MoF is also responsible for producing virtual budget tables of climate relevant expenditure, both during budget negotiations (ideally in real-time) and in public accounts. To encourage consideration of climate change in the preparation of budget submissions, ***Line Ministries should present climate expenditure trends as part of their submissions.***

To enable the parliament and the wider public to check and question the climate sensitivity of the budget, ***climate change virtual budget tables should be part of the document that is approved by the parliament and should be available for public comment by CSOs.***

2.5 Financing Plans: matching aspirations to means

What is a Climate Financing Plan?

A Climate Financing Plan ensures climate change actions are planned with a realistic assessment of the likely level of available resources. They draw on scenarios of total financing (see section 3.1) and on the scale of the challenge faced by sectors and projects, as described in section 2.1. They may include direct expenditure and policies that incur negative expenditure (i.e. reduction in revenue).

Why is this important in a CCFF context?

Sustainable financing plans are critical to ensure CCFFs remain realistic and achievable. Climate change actions within Action Plans are often 'costed' through a 'bottom-up' process that considers the resources needed to implement the action at an ideal scale.

Moving Forward

Most national climate strategies aim to be comprehensive, listing all the most important actions. This bottom up costing approach is valuable because it ***requires LMs to analyse the relationship between the level of expenditure and the benefits generated.*** However, it typically results in total costs that are much higher than the resources that are likely to be available

Most climate change actions can be undertaken at widely varying scales. This clearly applies to recurrent costs (e.g. extension, regulatory enforcement, health care, information and incentives) but it also applies to investments, including in infrastructure and institutions.

For some actions, there may be critical thresholds that must first be reached to establish viability. Most actions, however, are viable at different scales. ***Line Ministries therefore require a system for deciding how to define costs so that available resources are prioritised*** in line with needs (see section 3.1). A CCFF can encompass tools and mechanisms to use evidence to guide the allocation of expenditure to sectors and for actions, as follows.

- Sectoral allocations can be guided by analyses of the share of economic impact expected in each sector. They may take into account scenarios for private investment flows and the extent to which government is confident in fiscal policies designed to leverage private sector expenditure toward climate objectives.
- Estimates for how effective public expenditure may be on adaptation in the sector can also be used to inform sector allocations.
- The allocation of funding is guided by the expected effectiveness of each of the actions in reducing the cost of climate change, along with the sustainability of the action. This is assessed using the techniques of Climate Change Screening and Appraisal (see section 4.1).

Points to Consider

Phasing Expenditure

In practice, reducing ideal costs to fit a realistic climate change financing plan is often best done by phasing ideal expenditure, so that the least urgent is deferred until the mid or longer term. MoPs could consider several issues in this work process:

- Since climate change happens slowly, it can be argued that some adaptation can be left until the impact of climate change is more severe. This would mean that the balance between development and climate change funding would have to shift rapidly after 10 or 20 years, which would be difficult to achieve in practice.
- Where one action is dependent on another (e.g. a regulation requires institutional capacity building to ensure enforcement), then it is normal good practice to take this into account in phasing expenditure.
- Some actions take at least 10 years to deliver full results (e.g. long term research and complex institution building). These may need to be started immediately in order to address more serious climate risks in the future.
- For infrastructure projects, the costs of retrofitting adaptation design can be much higher that the costs of building it into the original design. Distinguishing Between 'Hard' and 'Soft' Expenditure

It can be useful to distinguish between 'hard' expenditure that provides direct benefits to people and ecosystems (e.g. services, investment, regulations and incentives), and 'soft' expenditure that provides supporting activities (e.g. research, information and capacity building).

Hard expenditure is easier to analyse because the benefits should be clear and relate to protection of sustainable development from climate change risks. In contrast, the benefits from soft expenditure are indirect and often extend across a variety of programmes. Although there are challenges in assessing the benefits from soft programmes, there may still be some value in taking an overview of the balance between soft and hard expenditure. For example, it might be justifiable to accept that a relatively high share of total climate expenditure (e.g. 30% to 50%) is devoted to soft expenditure in the short term, while institutions and policies are being built, and then to aim to reduce this, as the policies and institutions reach maturity and more resources can be focused safely on actions that deliver direct benefits. Distinguishing between soft and hard actions can be helpful in matching different types of action to different sources of funds. For example, in some sectors bilateral partners may have a comparative advantage in soft actions.

This CCFF component may draw upon complementary tools and approaches such as UNDP's I&FF work (see Box 4). These explore the implications of various alternative expenditure plans, taking into account other changes in the sector, such as trends in private investment and wider government policies.

Box 4 - UNDP's I&FF Work

UNDP has developed a methodology for assessing Investment and Financial Flows (I&FF) to address climate change, building on earlier work by UNFCCC that used the same title (UNDP 2009). I&FF assessments are a tool for financial planning looking at potential sources of investment funding for specific climate actions that have been costed, as well as their potential timing and likely magnitude.

With UNDP support, about 20 countries have used the I&FF work tool for both mitigation and adaptation finance covering a variety of sectors, including: energy, transport, forestry, agriculture, water, health, tourism, biodiversity and fisheries. The tool has mainly been applied to illustrate the possible scenarios for future expenditure on actions, compared with a baseline scenario that ignores climate change.

The I&FF methodology aims to cover both government expenditure and private expenditure (including households and corporations) in a way that avoids double counting. The methodology distinguishes between expenditure that affects physical assets (i.e. investment), expenditure on services and incentives (i.e. financial flows) and expenditure on operation and maintenance. Scenarios of future expenditure were not determined explicitly by macro-level climate finance scenarios (as described in section 3.1).

The NEEDS project, which assessed the climate needs of 11 countries, also has relevant methods.[7] The identification of mitigation and adaptation measures relies on national planning documents, such as NAPAs, CCSAPs and National Communications to the UNFCCC. There is no method for scoring the degree of relevance.

There are several options for describing the baseline scenario, including: a sectoral simulation model (which may be part of a national model), showing how the composition of the sector is expected to evolve; a sectoral plan, if one already exists; and historical projections of recent trends in the sector. It may be useful to triangulate between some or all of them. The climate change scenario is then based on the expected additional climate actions for mitigation and adaptation, based on the climate change action plans that exist. Once an initial climate change scenario has been determined, governments then revisit their climate change action plans and revise the priorities and expectations in the plans. There is no attempt to estimate quantitatively the benefits of climate actions and so there is also no estimate of the mitigation or adaptation gap.

Roles and Responsibilities

The CCPB usually has limited authority to request LMs to reduce their bottom-up costings, but the CCFF approach provides a system that gives some objective orientation to help government prepare rational financing plans.

[7] http://unfccc.int/cooperation_and_support/financial_mechanism/items/5630.php

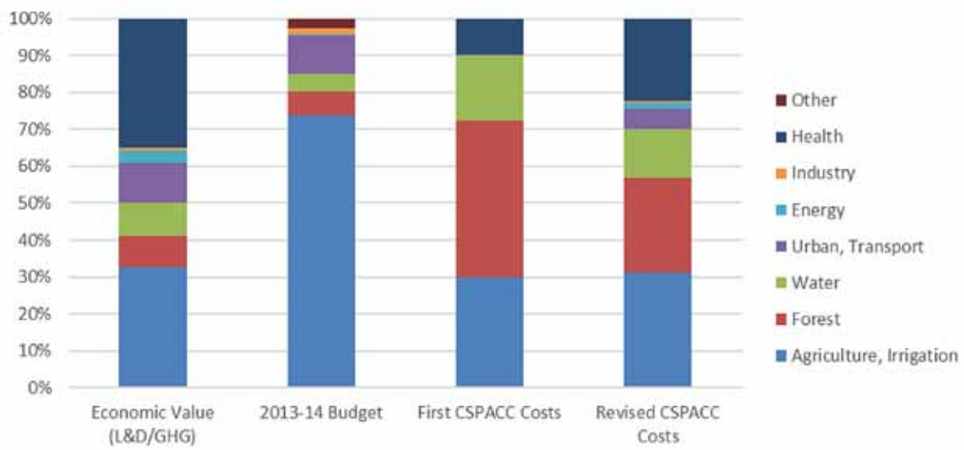
Climate Change Policy Bodies can provide guidance on how to justify the scale of expenditure by relating it to the level of avoided damage and losses. The guidance can include some principles for phasing expenditure.

LMs can use CCSA to justify allocations and phasing strategies in their financing plans for priority actions, following guidelines provided by the CCPB and/or MoPs. This will to ensure that financial allocations are balanced, and do not favour some actions at the expense of more important ones.

CCPBs should provide guidance on the ideal balance between hard and soft actions (including whether this is likely to change over the mid to long term and whether different sources of finance have a comparative advantage). ***LMs should implement the guidance when drawing up the financing allocations for specific climate policy targets and actions.***

Figure 5 - Balance between Sectoral Shares of Macro-Fiscal Losses and CCSAP Costings

The graph below compares the value of marcro-fiscal losses and of GHG emissions by sector with climate budget allocations in Chhattisgarh State of India. It looks at the original SAPCC costing and a proposed revised costing. The analysis suggests that climate expenditure is high for agriculture and roughly appropriate for forestry, water and urban development. In the initial costing of SAPCC actions, forestry was given a very high allocation and water a high share. Agriculture was roughly appropriate and health was underfunded. The proposed revision in SAPCC costing attempted to rebalance the expenditure in line with the value of macro-fiscal losses and GHG emissions. The analysis put a spotlight on some of the assumptions behind the figures, especially for the health sector, which should help to refine those assumptions.



Key Sources for Chapter 2

Risk and Vulnerability Assessments. The Maplecroft Climate Change Vulnerability Index is widely quoted and covers exposure, sensitivity and adaptability (https://maplecroft.com/about/news/ccvi.html). The GermanWatch Climate Risk Indicator is also widely quoted and focuses on exposure to extreme weather events (https://germanwatch.org/ fr/download/13503.pdf).

EM-DAT also maintain a valuable international database of natural disasters (http://www.emdat.be/).

SEI's Climate and Regional Economic of Development Vulnerability Index is based on a complex Integrated Assessment Model (http://sei-us.org/publications/id/363).

DARA's Climate Vulnerability Monitor (http://daraint.org/climate-vulnerability-monitor/climate- vulnerability-monitor-2012/) provides a good data portal and infographics on a wide range of sources of climate impacts and vulnerability indices.

UNDP have raised the profile of the impact of climate change on health and productivity in a new review at http://www.undp.org/content/undp/en/home/librarypage/climate-and-disaster-resilience-/tackling- challenges-of-climate-change-and-workplace-heat-for-dev.html. https://maplecroft.com/about/news/ccvi.html.

UNSTATS have a useful regional and international data resource at: https://unstats.un.org/unsd/environment/interlinks.htm#ClimateChange

Economic Impact of Climate Change. A key reference on the cost of climate change is the Stern Review http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/sternreview_index.htm. ADB have produced two papers on the economic impact of climate change on South and South East Asia, based on Integrated Assessment Models, at https://www.adb.org/publications/economics-climate-change-southeast-asia-regional-review and https://www.adb.org/sites/default/files/publication/42811/ assessing-costs-climate-change-and-adaptation-south-asia.pdf. http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/sternreview_index.htm.

The work plan and technical working groups set up under the Executive Committee of the Warsaw International Mechanism to address loss and damage are outlined here: http://unfccc.int/adaptation/groups_committees/loss_and_damage_executive_committee/ite ms/7543.php

Integrating Climate Change into Macro-Fiscal Projections
See recent IMF discussion note: https://www.imf.org/external/pubs/ft/sdn/2016/sdn1601.pdf

Costing and Financial Planning for Low-Carbon and Adaptation Investment. Several countries have applied UNDP's Investment and Financial Flows (I&FF) methodology for financial planning adaptation strategies in various sectors. This work involves modelling the changing sectoral composition of the economy. http://www.undpcc.org/en/financial-analysis/methodology
An I&FF methodology guidebook is available at: http://www.undpcc.org/docs/Investment%20and%20Financial%20flows/Methodology/UNDP_IFF%20methodlogy.pdf.

UNDP's Financing Solutions for Sustainable Development Platform. Under Goal 13 of this platform UNDP lists financing solutions that could be effective in the context of climate change (http://www.undp.org/content/sdfinance/en/home/sdg/goal-13--climate-action.html)

An approach to valuing climate change by estimating the global cost of adaptation, which is used in UN Environment's annual Adaptation Gap Report, at http://web.unep.org/adaptationgapreport/2016.

The World Bank managed a programme of studies on the costs of Adaptation to avoid climate change losses and damages. http://www.worldbank.org/en/news/feature/ 2011/06/06/economics-adaptation-climate-change.

Public Expenditure Reviews. The CPEIR work builds on traditions with Public Expenditure Reviews. The WB have produced a guidance note on PERs at www1.worldbank.org/publicsector/pe/ perguidelines3701.doc and maintain a website on PERs, as part of the open budgets portal at http://wbi.worldbank.org/boost/tools-resources/public-expenditure-review.

3. CCFF Workflows for Budget Mainstreaming

This section of the guidance note outlines how to adjust the budget process to ensure a climate change response is delivered systematically across government. Section 3.1 outlines how to develop financing scenarios to guide the prioritisation of climate related expenditures; Section 3.2 articulates how the budget circular and budget guidance can be used to integrate climate change into budget formulation; and Section 3.3 provides guidance as to how budget negotiations can be strengthened through assessment of the climate dimensions of budget submissions. ***The chapter is particularly relevant for MoFs****, though it also refers to the roles of other institutions.*

MoF

3.1 Financing Scenarios: constraints to financial allocations

What are Financing Scenarios?

Financing scenarios indicate the level of resources (both domestic and international) likely to be available for climate change responses. These allow financing plans to be realistic and achievable (see section 2.5).

Why is this important in a CCFF context?

Rational planning of the government response to climate change requires some indication of available resources. There is still much uncertainty about the future of climate finance, including both dedicated climate funds and development expenditure that contributes to adaptation and mitigation. This applies to both domestic and international sources of funding.

International funding purely dedicated to climate change, such as the Adaptation Fund or Special Climate Change Fund, is quite limited. And even with a funding base topping $10 billion, the Green Climate Fund will split its commitments evenly between mitigation and adaption, and these funds will be disbursed over many years.

It is therefore appropriate that MoPs in developing countries construct more detailed and realistic scenarios of their funding gap at national and sub-national levels. These assessments of future financing are not 'projections'. Using scenarios makes it explicit that numbers are indicative and need constant revision and updating.

Developing financing scenarios also makes it possible to start assessing the potential scale of climate action and impacts in reducing climate-related losses and damages to close these gaps (see section 5).

Moving Forward

Domestic ceilings should be guided by the existing revenue and expenditure projections of government, as contained in the Medium-Term Expenditure Framework (MTEF) or equivalent. A 'realistic' scenario might typically assume that the share of domestic expenditure in the development and recurrent budget that contributes to adaptation and/or mitigation remains constant (i.e. that climate change retains the current level of priority in government policy).

This would be supplemented by estimates of spending from new domestic funds that are dedicated to climate change, if these are financed from sources other than the recurrent and development budget (e.g. through or from foreign sources of finance). A higher scenario might then assume that the growth in domestic climate finance increases by 50% more than in the realistic scenario (e.g. that governments are aiming to increase the priority given to climate change).

A more sophisticated basis for defining scenarios might consider the share of climate funding in discretionary expenditure (i.e. after accounting for legal obligations in spending on debt, pensions etc.), rather than total expenditure, because this determines the 'fiscal space' to pursue new policy priorities. CCFFs have been used to help governments refine a policy that specifies how much of the fiscal space will be used for adaptation and mitigation (Bihar and Chhattisgarh).

Box 5 - Climate Change Implications for Macroeconomic Projections

In most countries, a Medium-Term Expenditure Framework (MTEF) is the basis for estimating budget ceilings over the next three years. An MTEF is usually done on a rolling basis, updated every year. It typically starts with revenue estimates based on: a) sectoral growth projections, which provide the tax base; b) any changes in tax rates; and c) improvement in tax collection. This provides the projections of overall revenue and is then combined with policies that determine how the overall revenue will be allocated amongst the various forms of non- discretionary expenditure (e.g. statutory obligations, interest) and discretionary expenditure (or 'fiscal space').

MoP

The impact of climate change on revenue may start small, but is cumulative. For example, for vulnerable developing countries, the impact of climate change on total GDP is likely to be about 0.1% in the next year and then rise by 0.1% each year. This means that, after three years, GDP will be 0.6% lower than if MTEF projections ignored climate change.

Impacts will also be felt unevenly over sectors. Various analyses suggest that the relative burden of the economic impact of climate change falls heaviest on the agriculture, forestry, and health sectors, as opposed to energy, for example.

This is a small difference but fiscal space is typically limited to 2% to 3% of GDP, so climate change has a significant impact. Analyses of the economic effect of climate change included in a CCFF can encourage MoFs to incorporate these into macroeconomic growth and fiscal projects in the medium term.

The overall ceiling for climate expenditure needs to be allocated to each Line Ministry, so that they can use this guidance in budget submissions.

Ideally, the projections of climate relevant development assistance (ODA) will be determined by consultation with international development partners, including on their expected total levels of ODA and on the extent to which the sectoral and programme focus will lead to a change in the climate change relevance of their portfolio. In rapid CCFFs, when there is insufficient time to consult with international partners, it may be sufficient to use international projections for ODA and to adjust for any expected change in the country share of ODA and the expected shift towards climate relevant programmes.

For expected inflows of international climate funds, different scenarios could be constructed taking advantage of various independent projections at the global level. For example, an optimistic scenario might first assume that the global target under the Paris Agreement is reached (i.e. a total of $100bn by 2020). Then, a country's share of this could be estimated as a function of different factors, such as the ratio of its current share of ODA, foreign direct investment, and degree of climate vulnerability as a reflection of its degree of global prioritisation for support.

Other independent reports and statistics on available and projected resources of international climate funds as well as their rates of execution could also be used. Finally, several countries are developing Country Program Documents for the Green Climate Fund which could inform scenarios of future expected climate finance.

Points to Consider

In general, most MoFs will be concerned about financing scenarios that show a strong increase in climate expenditure. Their concerns may be partly addressed by focusing on actions that involve the 'climate change smartening' of existing expenditure. It may also be possible to identify policies that create savings (e.g. subsidy reforms) or additional revenue (e.g. taxes and fees) that offset additional expenditure. However, MoFs will focus on reserving any savings or revenue for climate change expenditure, as they will normally want to put these resources into the central pot, to be prioritised through the normal budget process.

Given that funds each have different eligibility and allocation criteria it would be wiser for countries to adopt conservative, rather than optimistic, scenarios in their planning. According to WRI, public international climate funds are accessed for most countries through multilateral development banks (MDBs) and UN agencies. Statistics on co-financing rates from previously approved projects of these funds, the average amount of new project approval by fund, as well as average time for accreditation of intermediaries or national implementing agencies can also be used as input to scenarios of likely future climate funding.

As a rule, policy makers generally find it difficult to absorb more than two scenarios. So it is normally best to limit the analysis to a 'realistic' and an 'optimistic' scenario. The realistic scenario is the one considered most likely and the optimistic one provides the basis for allowing Line Ministries to plan to be more aspirational in their objectives. The climate finance scenarios should not be confused with the scenarios for climate change itself, such as those defined in the IPCC climate change projections.

Roles and Responsibilities

In order to ensure that macroeconomic planning takes climate change into account, *MoPs could adjust growth projections and calculations of investment needs as part of national economic plans. Similar work could also happen at the LM level to value climate change impacts in each critically affected sector.* ***On this basis, the MOF could generate guidance on climate budget ceilings for each sector, taking into account estimates of the total resources available as well as available evidence on the diverse sectoral and beneficiary incidence of climate change impacts.*** It can also undertake performance-budget reviews and other measures to ensure that Line Ministries budget and execute financial allocations to agreed climate actions in a consistent manner.

To inform that process, the ***Climate Change Policy Body can support these actors by providing more coherent and robust analysis of the economic impact of climate change for different geographies, demographic groups, and sectors. This information can support in determining a more equitable allocation of total available climate finance.*** To further broaden awareness and improve the quality of the analysis, ***CSOs with experience in climate change and economics should be consulted.***

A CCFF needs some estimate of the likely future access to international climate finance and ***the Ministry of Finance should be responsible for providing this estimate, in consultation with the Climate Change Policy Body*** and international funders.

Figure 6 **- Examples Climate Financing Scenario from the Cambodia CCFF**

The table below presents the first of two climate finance scenarios prepared for the Cambodia CCFF. Global funds were estimated on the basis of projected global totals and Cambodia's share of ODA flows. Dedicated in-country funds were based on an assumed growth rate, after consulting with key donors. For integrated funds, the estimates were based on assumed growth rates.

Scenarios	Total climate finance			(a) Dedicated/global funds			(b) Dedicated/in-country			(c) Integrated/in-country		
	Miti.	Adapt.	Total	Miti.	Adapt.	Total	Miti.	Adapt.	Total	Miti.	Adapt.	Total
(0) Current/ Baseline (2013)	9	176	185	3	22	25	2	78	80	4	76	80
				Global CC Finance flow: $12 Bln Cambodia thru int'l CC inst.: $25m or 0.2% of global flow			In-country donors: $75m Regional projects: US$5m			CC weights Low relevance: 3% ($30m) Mid-relevance 25% ($50m)		
			[$70m up]			[$15m up]			[$25m up]			[$30m up]
(1) 5-Year Low-Increase (By 2018)	19	236	255	7	33	40	4	101	105	8	102	110
				Global target: $40 Bln, Achieve 50%: $20 Bln Cambodia share holds. 0.2%			30% increase from baseline			CC weights hold ODA: 25% increase (4.6% p.a) Domestic finance: 9-10% up p.a.		

Source: Cambodia CCFF

3.2 Adjusting Budget Guidance to Include Climate Change

What are key budget guidance documents?

Annual budget cycles typically start with a policy directive in the form of a Budget Strategy Paper. This lays out the broad principles for the upcoming budget, including current political priorities and the latest updates on development policies. A Budget Circular further outlines detailed instructions to guide line ministries on how to prepare their budget to align to these. The Budget Circular, prepared either separately or in conjunction with the Budget Strategy Paper, typically provides guidance on sectoral expenditure ceilings. It will also provide Line Ministries with the forms to use in submitting their budget proposals.

Why is this important in a CCFF context?

Since facilitating the integration of climate change into plans and budgets is at the heart of the CCFF, it is critical that these budget guidance documents consider how to reflect climate change and climate finance as a core macro-fiscal issue. A CCFF process requires that MOFs and other budget institutions understand the importance of more evidence-based appraisal of climate change expenditure (see section 4.1) and are accountable for the sound management of state resources through the budget negotiation process (see section 2).

Moving Forward

To help boost attention to climate change, MOFs could include a fixed paragraph or section on climate change in their key budget guidance documents. This approach has been adopted as part of CCFFs in both Nepal and Pakistan. Once fully mainstreamed into budgeting processes, a separate thematic section could eventually be omitted.

Suggested target levels or ceilings for each ministry with respect to climate spending could also be indicated. Guidance documents on how to classify and weight climate expenditure and on how to undertake climate screening and investment appraisals would need to be cross-referenced in these documents.

Points to Consider

As budget circulars typically change only marginally from year to year—except during periods of major reforms—the forms embedded in the guidance documents could be revised over time to include more and more climate budget information as awareness and institutional capacity matures. For example, some countries have added a field for classification and/or scoring the degree of climate change relevance of each organisational budget unit or programme, along with some brief notes on the basis for the assessment.

MOFs must carefully consider how negative expenditure is treated in the Budget Circular. Climate actions may be proposed and managed by Line Ministries that could lead toward negative revenue performance at a central level, yet not reflected in respective Line Ministry budget allocations or budget performance metrics.

Roles and Responsibilities

To ensure that Line Ministries reflect climate change and climate finance when preparing their budget submissions, the ***MoF should include a section on the importance of climate change in the Budget Strategy Paper for at least a few years***. ***It may seek advice of the CCPB on what to include in this section, so that it refers to the scale of the challenge and the approach taken by government in addressing the challenge, including the way in which CCSAPs are being managed. Legislators and CSOs might also be consulted in the process of integrating climate change into budget guidance documents to build public ownership and accountability.***

To help Line Ministries take climate change into account when preparing budget submissions, ***MoF could set expenditure ceilings or suggest a target for each sector based on desirable levels of climate spending.*** ***The MoP could propose guidelines and adjust planning templates for LMs and support capacity on how this box is to be filled in. Together with the CCPB it could work with MoF to revise budget submission forms to reflect the results and evidence of Climate Change Screening and Appraisal, typically undertaken at sector level.***

Climate actions that will impact on fiscal revenue (e.g. regulations and tax incentives) will require close policy collaboration between the ***relevant LM*** and ***the MoF*** in the budget formulation process.

3.3 Budget Negotiation and Approval: respecting climate change benefits

What is Budget Negotiation and Approval?

Budget negotiations start with submissions by Line Ministries, following the instructions in the budget circular (see section 2). This is usually followed by a first round of discussions to ensure that the instructions have been properly followed and to pick up on any problematic submissions. When all submissions meet the required standards, there is a negotiation over which budget proposals are to be approved.

Why is this important in a CCFF context?

Budget negotiations and decisions should be informed by evidence on resource flows that will best promote climate compatible sustainable development. CCFF tools and related processes can build capacity and the evidence base for such decisions to be informed by climate change risks, costs and benefits.

Moving Forward

The first round of discussions following LM budget submissions should include an assessment of the quality of the way that LMs have filled in the section in the forms that deal with climate change issues, including any proposed tagging and/or scoring (see section 2.2).

Negotiations should be informed by virtual budget tables that show the sectoral and total climate change expenditure that would be undertaken, if the budget proposals were accepted. These tables should inform the overall budget negotiations. A CCFF can apply tools and approaches informed by other thematic approaches to virtual budgeting (see Box 6 below).

Box 6 - CCFF work and other virtual budget initiatives

There is a long tradition of gender budgeting, which is based on assessing whether the benefits to women are higher than average. Gender budgeting seeks to provide policy makers with evidence on whether the policy choices they are making within the budget are narrowing the gender welfare gap. The experience with gender budgeting also extends to accountability actors (i.e. audit, legislature, civil society and media), including both a change in systems to welcome their participation and providing information and capacity amongst those accountability actors to take that role.

During the 1990s, international efforts to make macroeconomic policy more poverty sensitive led to the requirement for all countries with IMF programmes to have Poverty Reduction Strategy Papers (PRSPs). However, there was increasing concern that these strategies were too general and not rooted sufficiently in evidence. As a result, PRSPs were often supplemented by Poverty and Social Impact Analysis (PSIA) that adopted methods of beneficiary incidence analysis to estimate the extent to which key policies benefited poor households. PSIAs were then used to guide the refinement of PRSP programmes.

Using similar methods to a CPEIR, UNICEF is promoting countries to undertake child-focused expenditure reviews, covering both expenditure patterns and institutional processes. The approach includes developing budget markers, scores and "virtual budget tables" in the information systems, in real-time. The reviews adopt weights based on beneficiary incidence analyses. These tools aim to facilitate budget negotiation and allocations processes.

BIOFIN, a global partnership coordinated by UNDP is addressing the biodiversity finance gap in a similar, comprehensive manner. Like CCFFs, it supports countries to review institutional responsibilities and recent expenditure related to biodiversity. The classification and scoring scheme it applies relates mainly to the share of total programme expenditure devoted to biodiversity and thus most closely matches the objectives-approach. BIOFIN also considers the potential costs of implementing biodiversity action plans and possible financing sources.

Points to Consider

In most countries, the budget approved by cabinet then needs to be ***debated in parliament, though the powers of parliament to change the budget are variable. Parliamentary Climate Change Committees have a responsibility to check whether Line Ministries meet their Climate Change expenditure ceilings/targets and can challenge the assumptions, if they suspect that climate relevance is overstated, without full justification. CSOs and the media can play a useful role in challenging the assumptions on climate change relevance, if required.***

Roles and Responsibilities

The budget process will already be well established and is often under a constant programme of evolution. Climate sensitive budgeting does not involve radical changes to the responsibilities. To ensure that Line Ministries provide budget proposals that treat climate change in a consistent manner, in line with the guidelines, ***the Climate Change Policy Body should check the quality of the submissions in the parts of the submission form that deal with climate change (including the Line Ministry proposals for classification and coding, if appropriate) and require further work if necessary. Line Ministries should ensure that they respond to the comments. MoF should ensure that any tagging or coding submitted by Line Ministries, and approved by the Climate Change Policy Body, is reflected in the way budgets are entered in the budget software or are included in additional spreadsheet analysis*** (see section 2.2)

During the first phase of the budget negotiation process, ***MoF can require Line Ministries to explain why their total climate change expenditure is above or below the ceiling/target provided in the budget circular.*** If the explanation for any deviation is not sufficiently clear, then ***Line Ministries will be required to strengthen or revise their submissions.***

Once the MoF is satisfied that the budget proposals meet the standards and guidelines described in the budget circular, the budget proposals are then submitted to the cabinet for final negotiations and approval by government. Where a budget coding system is in operation, with up-to-date 'real-time' scores, ***MoF should ensure that the submission to cabinet includes virtual budget tables of climate expenditure, using the budget coding/ scoring included in the budget software.***

Key Sources for Chapter 3

Climate Finance Sources. Key sources on climate finance include: a site maintained by ODI and Heinrich Böll Foundation on all climate funds at www.climatefundsupdate.org/; the CPI Climate Finance Landscape annual reports at https://climatepolicyinitiative.org/publication/global-landscape-of-climate- finance-2015/ which include private sector as well as public sector finance; a UNFCCC website at http://unfccc.int/focus/climate_finance/items/7001.php that covers the FSF, GEF, AF, LDCF, SCCF and GCF; the World Bank website on CIF at www-cif.climateinvestmentfunds.org/, which covers the CTF, FIP, PPCR and SREP. a WRI report and presentation on long-term climate international climate financing is also instructive. http://unfccc.int/files/cooperation_support/financial_mechanism/long- term_finance/application/pdf/wri_ltf_presentation.pdf

Budget Systems. The World Bank has produced a range of useful resources on public finance and budgeting systems, including: the classic handbook describing the principles of public expenditure management at www1.worldbank.org/publicsector/pe/handbook/pem98.pdf; a review of its experience with PERs at www.r4d.org/sites/resultsfordevelopment.org/files/resources/Final-revised-Deolalikar- PER-review.pdf; and a website on latest approaches to PFM reforms at http://www1.worldbank.org/ publicsector/pe/StrengthenedApproach/. The IMF also has a useful summary of the budget process at https://www.imf.org/external/pubs/ft/expend/guide3.htm.

Budget Tagging, Scoring and Tracking. There is little public information about climate change tagging and scoring in the budget. UNDP have produced a review of international experience at https://www.climatefinance- development-effectiveness.org/sites/default/files/event/CFSDforum2015/climate/Climate%20Budget%2 0Tagging%20_July%202015_DRAFT.pdf.

A review of the award winning Nepalese experience is at https://www.unpei.org/sites/default/files/ e_library_documents/Nepal_Climate_Change_Budget_Code_Application_Review_2013.pdf

The OECD system of climate markers is described at https://www.oecd.org/dac/stats/48785310.pdf. There is an annual joint MDB report (for WB, AfDB, AsDB, EBRD, EIB, IDB) on tracking climate finance at https://www.adb.org/sites/default/files/institutional-document/189560/mdb-joint-report-2015.pdf.

The EU also has a system for tracking climate change expenditure which relies on the OECD and the MDB Joint Approach at http://www.ieep.eu/assets/1349/Tracking_system_for_climate_expenditure_ in_the_post-2013_EU_budget.pdf. https://www.oecd.org/dac/stats/48785310.pdf.

4. CCFF Workflows to Mobilize Funds

This section provides more in-depth guidance on how climate change can be integrated into budget formulation. Section 4.1 outlines how tools for screening and appraisal of investments can include climate change; Section 4.2 provides guidance on how to raise the profile of climate change in budget submissions; and Section 4.3 provides guidance on how proposals for funding from external sources of international climate finance can be strengthened. The section provides an overview of how, by following these measures, Line Ministries will have improved access to both budget funds and new sources of climate finance. The chapter is primarily designed for Line Ministries, but should be of interest to other institutions.

4.1 Climate Change Screening and Appraisal (CCSA): justifying climate expenditure

What is Climate Change Screening and Appraisal?

At the heart of all planning and budgeting is the appraisal of actions and programmes. Climate Change Screening and Appraisal (CCSA) consists of a series of steps to first filter investment options by their level or degree of risk to climate change and or the sensitivity of their bankability to the impacts of climate change. It then uses standard risk and economic evaluation tools to ensure that incremental risks, costs, and benefits associated with climate change are included in the appraisal for the most relevant projects or investments. This ensures that resources for more complex and detailed studies are directed to those cases where climate change is a "material" factor from the vantage point of either the beneficiary or the investor (e.g, the Treasury, State Development Bank).

The primary role of CCSA is to ensure that those responsible for designing and managing actions take account of climate change in their work, so that expenditure is as effective as possible, and that equity and pro-poor targeting considerations are taken into account at the design phase of an investment programme.

Why is this Important in a CCFF context?

Climate Screening and Appraisal is an essential component of CCFF work processes. It provides additional evidence to guide the prioritization and targeting of climate actions, and linking that to actual budget allocations (see section 2.5).

Moving Forward

This Guidance Note gives an overview of the general principles behind Climate Screening and Appraisal. More specific guidance and details regarding how this should be undertaken will be presented in a subsequent technical note.

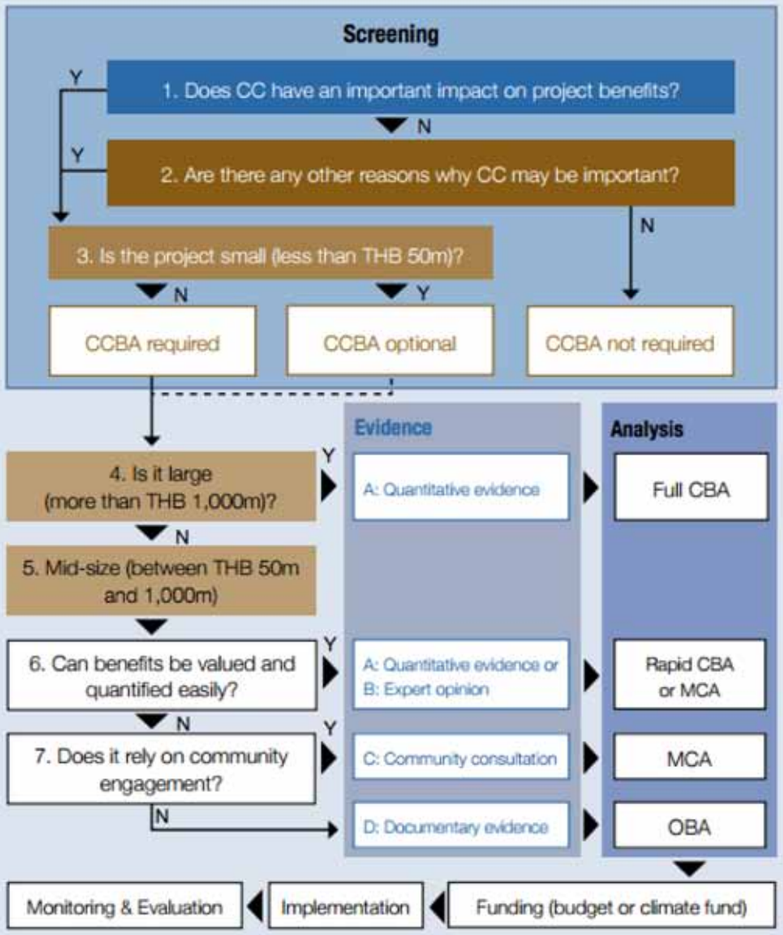
The key steps underlying Climate Screening and Appraisal include:

- Climate Screening and Appraisal will normally start with screening to determine whether the appraisal should take climate change into account. This will typically be determined by: a) the level of expenditure involved in the service or investment; and b) the extent to which the benefits of the action are affected by climate change, especially where critical thresholds may be reached. For a practical example of a work flow process to help filter where CCSA should be undertaken, see figure 7 below.

- If climate change is to be included in the appraisal, then it should be based on an assessment of the performance of the action without climate change, compared with the benefits with climate change. This general principle allows actions of various types to be included in a common measure of climate change relevance, represented as the CC%. It can be applied to both mitigation and adaptation and can include actions that involve some modification (i.e. proofing) as well as actions that simply become more important, without any change in design.

- In some cases, efforts to integrate climate change into appraisal have been combined with efforts to strengthen routine development appraisal.

Figure 7 **- Example of a CCSA flow chart (Developed for the Government of Thailand)**



Points to consider

- Maladaptation and 'Mal-mitigation': Most CCFF work to date does not explicitly address the issue of discouraging maladaptation, or using CCSA or other planning guidelines to dissuade additional new investment that could serve to exacerbate existing climate vulnerability over time, nor 'mal-mitigation,' or discouraging new public investment in ways that would increase GHG emissions over time, including through negative expenditures. An example of maladaptation would be expanding low-income housing developments in lowland coastal areas prone to storm surges or at risk of destruction from land erosion. Mainly this has been due to lack of time, given that tracking adaptation and mitigation spending is already a complex task and some aspects of maladaptation and mal-mitigation are difficult to estimate. Moreover, as institutional capacities need to be built over time to carry out this work, and it is politically more sensitive, these classifications have typically been omitted.

- The methods for assessing performance can be those routinely used for similar actions in the appraisal of development actions. In many cases, these will be rapid and qualitative for smaller actions and more rigorous for larger actions. The rapid approach might include, for example, a form of multi-criteria analysis whilst the more detailed analysis might attempt to quantify benefits (e.g. in a cost benefit analysis). There has been increasing interest in CCFF work in the 'hybrid' grey area between multi-criteria analysis and cost benefit analysis which recognises that detailed cost benefit analysis is not practical but that multi-criteria analysis is problematic unless it is carefully structured. These hybrid initiatives aim to ensure that the criteria in the multi-criteria analysis relate to the expected benefits in the cost benefit analysis and that they can be scored using a range of evidence, from beneficiary consultation to expert opinion to more quantitative sources.

- The assessment of performance needs to pay specific attention to the distribution of benefits and to the extent to which a climate change action reduces inequality and social exclusion. This is achieved by recognising the reduction in inequality as a specific criteria or benefit in the appraisal.

Roles and Responsibilities

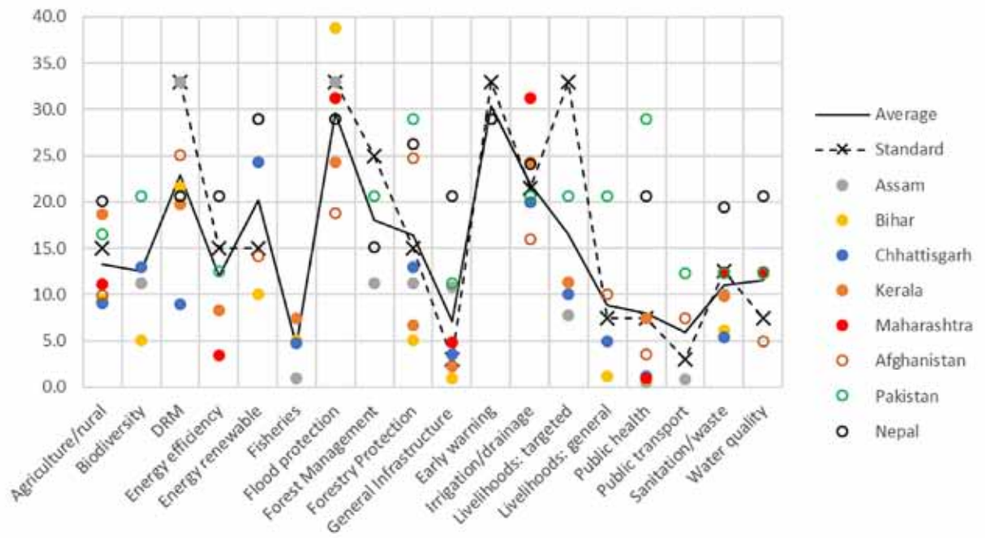
In most planning systems, ***Line Ministries are responsible for undertaking appraisals.*** ***CSOs may also play an important role, either in undertaking independent appraisal or in providing advice to Line Ministries as part of stakeholder consultation and expert opinion.*** ***MoF provides guidance and quality control on routine development appraisal.*** For climate-related appraisal, the central economic ministries need support from the ***CCPB in the form of guidance on how to integrate climate change into the appraisal and check the quality of how this guidance has been applied.***

Box 7 - Regional Experiences with Climate Screening and Appraisal

CCSA work as an adjunct to climate planning and budgeting has been undertaken throughout Asia and with specific CCFF-relevancy in Afghanistan, Cambodia, India, Indonesia and Thailand. Analyses used national evidence, wherever possible, supplemented by international studies.

- In **Thailand**, guidelines specific to the national context were developed and CCSA analysis was undertaken by UNDP in partnership with the Ministry of Agriculture and Cooperatives (MOAC). Five case studies were analysed. The work aimed to bring clarity on the nature and extent of the climate impact on MOAC activities in five thematic areas, and to help refine their design. It also strengthened the case *vis-à-vis* the Bureau of Budget that MOAC priority actions were increasingly reflecting climate risk in a rational manner as part of budget negotiations.
- In **Cambodia**, initial CCSA analyses used standard international default ranges, informed by conventional Cost Benefit Analysis (CBA). Working groups in line ministries were consulted in the process. A second phase has involved more extensive CCSA in selected pilot ministries. These have played a strong role in informing reforms to climate budgeting guidelines at central level adopted by the Ministry of Economy and Finance.
- In **India**, CCSA work was led by the Departments of Environment Forestry and Climate Change in each state. Four states undertook a rapid classification using the standard international default ranges, with the actual values within the ranges based on knowledge of the degree of vulnerability. In Maharashtra, the government chose to use a detailed CBA to help assess priorities and identify the most important actions. Assam and Bihar are using hybrid MCA/BCA approaches.
- In **Indonesia**, MOF led the work. Climate benefits were estimated both as part of the Mitigation Fiscal Framework (using CBA methods) and the Green Planning and Budgeting Strategy (using a structured qualitative approach).
- In **Afghanistan**, MoF likewise led the analysis and it also relied on standard international default ranges. This also used subjective assessments of the actual values within the ranges based on the nature of vulnerability in Afghanistan.

Figure 8 - Examples of Sectoral Climate Change Relevance in CCFF Work



Source: CCFF work in South Asia under the UNDP and ACT programmes

Box 8 - Valuing Climate Mitigation

It is common practice to use carbon markets as an indication of the value of carbon because these reflect the potential financial gains from GHG reduction. Until recently, carbon markets were dominated by the European Trading System (ETS), which initially traded at over $30/tCO2e. However, the ETS has suffered from over-supply and verification problems and prices have dropped to about $5 /tCO2e. The ETS now accounts for only about a third of global carbon trading and there are numerous regional and national schemes, with a very wide variety of prices, covering about 13% of total global GHG emissions (ECOFYS and World Bank 2014). The commitments announced in COP21 in Paris, in 2015, should help to strengthen markets. Taking this more optimistic view of the mid-term prospects for the carbon market, a market price of about $20/tCOe would be reasonable.

The Social Cost of Carbon (SCC) is determined by dividing the total expected loss and damage by the total projected GHG emissions. It gives an approximate indication of the indirect economic cost of global GHG emissions. Various studies have attempted to estimate this figure. The Stern Report suggests that $50/ tCO2e would be a conservative estimate. Other studies suggest a value over $100.

However, these estimates typically view the issue globally. Rarely are nationally or regional-appropriate figures estimated, due to political sensitivities involved as well as limited data on damages and losses at this level. Countries acutely vulnerable to climate change may well justify using a higher SCC when undertaking CCSA and in driving budget allocations toward priority mitigation programmes.

4.2 Budget Submissions: raising the profile of climate change in the budget

What are Budget Submissions?

Budget submissions are a key tool in effective expenditure allocation. A budget process typically begins with a macroeconomic review including taxation and revenue estimates by PFM entities. Based on these economic and fiscal projections, the national budget and permissible public spending is estimated. Ministries then prepare a framework document or sectoral approach paper and in some cases a first version of their budget bids in parallel with the preparation of revenue estimates. These budget submissions are the way in which Line Ministries influence budget negotiations.

Why are these important in a CCFF context?

Pre-budget climate change planning sessions can be used as part of the CCFF process to screen policies, programmes, sub-programmes, and investment activities for climate risk and to generally integrate climate change adaptation and proofing measures into their design.

Moving Forward

The budget submission forms for each organisational budget unit will include a box for declaring the climate change relevance of the budget. This may involve a simple yes/no tag, a high-mid-low relevance classification of a CC% score, using the principles of CCSA and applying the degree of detail appropriate for the nature and scale of the action (see section 2).

Line Ministry budget submissions should also include tables adding up the total proposed expenditure for the Line Ministry, including all organisational budget heads. These tables should include a supplementary virtual budget table showing the total climate expenditure, using the coding and scoring in the budget software. This virtual budget table should show trends over the last 3 years, as well as the proposed budget, and the proposals should be guided by the ceilings/targets proposed by MoF.

CCSA and climate change coding/scoring can typically provide the evidence required to make a rough quantitative estimate of the expected impact of expenditure in reducing or avoiding future costs. The analysis will be illustrative only and provide a broad indication of which expenditure makes the largest contribution. In this way, CCSA can promote more informed decision-making by taking into account how climate change affects activities and sectors differently. It also supports the identification of the conditions that need to be met for the expected impact of response measures to be sustained into the mid and long term.

Points to Consider

In practice, many actions are included in the budget after several years of debate and preparation. CCSA needs to be integrated into the whole of this design phase, rather than bolted on at the end. In the first years of climate sensitive budgeting, Line Ministries will therefore have limited experience with CCSA and the evidence in the climate change box in the budget submission forms will be of mixed quality.

Budget submission forms should request information on the plans for raising funds from other sources. This needs to be guided both by general principles about the comparative advantage of different sources and by some indication from the overall CCFF of how much funding is likely to be available from each source, so that LMs have realistic expectations of their sectoral share of the scenarios of total funds available (see section. 3.1) There is also increasing interest in the possible role of co-financing by the private sector, through public private partnerships (PPPs).

Roles and Responsibilities

As part of their budget submission, ***Line Ministries will need to fill in this box, based on the guidelines provided by Climate Change Policy Body and the latest evidence on the importance of climate change for the budget unit.*** If a budget coding system is in operation, ***Line Ministries should also enter the contents of this box into the coding space in the budget software,*** to make sure this is up-to-date.

In order to demonstrate their growing commitment to responding to climate change, ***Line Ministry budget submissions should present virtual budget tables totalling the climate expenditure in each of their departments, divisions and other organisational budget heads.***

Budget submissions provide an opportunity for Line Ministries to present an estimate of how they expect climate change expenditure under their management to contribute to reducing macro-fiscal losses. To maintain credibility in the climate change planning and budgeting system, ***the Climate Change Policy Body should provide quality control for Line Ministry submissions and provide an estimate of total impact across all Line Ministries. CSOs can play a useful role in reviewing the analysis. In particular, they may comment on the extent to which the conditions for impact are likely to be sustained, especially if or when they involve institutional reform.***

As part of their review of budget integrity, ***the MoF can check whether the claims in Line Ministry budget submissions for expected financing are consistent with the financing scenarios in the CCFF.***

In many countries, policies that aim to influence the private sector involve bodies outside MoF, which may be another ministry (e.g. in charge of investment) and/or an agency dealing with private investment. ***Where Line Ministries are justifying policies and expenditure by claims of leveraging potential private sector co-financing, they need to have consulted closely with the private sector and with the government bodies responsible for coordination with private investment.***

4.3 Increasing Access to International Climate Finance

What is International Climate Finance?

While the public budget remains the primary source of climate finance in many countries, some countries, particularly least developed countries and small island developing states, still rely heavily on international sources of climate finance. In these countries, international climate funds are an important source of finance. These include: the Green Climate Fund (GCF), Global Environment Facility (GEF), Least Developed Countries Fund (LDCF), Special Climate Change Fund (SCCF), Climate Investment Funds (CIFs), Forest Carbon Partnership Facility (FCPF), and various other multilateral and bilateral climate adaptation and mitigation focused funds and facilities such as NAMA Facility. Information on the scope and criteria of these funds can be found in the resources section.

Why is this important in a CCFF context?

A CCFF aims to more strategically inform the mobilization, management, and targeting of all forms of climate finance in an integrated manner. This includes an examination of the potential sources and uses for both international and domestic sources of funding, as well as their areas of comparative advantage. Parties to the Paris Agreement under the United Nations Framework Convention on Climate Change which became international law in November 2016 committed to mobilizing at least US$100 billion of new and additional climate finance per year by 2020.

International climate funds have their own unique rules, practices, guidelines, and selection criteria. Applications commonly have at least one section that demands an assessment of how the proposed expenditure will contribute both to climate adaptation/mitigation and to development. In theory, the guidelines usually request some estimate of the scale of the contribution. In practice, most applications provide this information in a qualitative form and without cross-reference to any national system for assessing the benefits of the expenditure. Much of the information required involves justifying the economic rationale for the action by quantifying the climate and social co-benefits of an activity or investment against the status quo. Other sections require explaining how programme and project outputs will be monitored, reported and/or independently verified which also relate to aspects of a CCFF.

The need to institutionally embed climate change into PFM systems is also accentuated by the increased international climate funding available. To be able to attract more international funding, governments should be able to demonstrate the transparency and effectiveness of their own country systems—including those for budget accountability and macro-fiscal policy management. In developing and implementing CCFF workflows throughout the public and economic management system, greater levels of fiduciary trust and confidence can be built *vis- à-vis* international actors including vertical climate funds and transnational CSOs.

Moving Forward:

As part of the CCFF objective to mobilize climate finance more strategically, CCFF-related workflows can contribute to Readiness Plans by developing new methods for determining the relative scale of the contribution of different programmes which can be used to inform the prioritisation of funding for international climate finance. Checklists and systems of quality control for funding applications could also be developed to strengthen the evidence-base for more prioritised funding.

Points to Consider

Some CCFFs include a section that explicitly identifies the comparative advantage of various funding sources, including international climate finance actors and national climate funds. This is an important strategic step to help governments minimise duplication and ensure that the role and expected scale of operations of each source of funds is clear.

Data generated by climate expenditure reports could be used to help build a case for, and to establish financial baselines for measuring government's financial commitment to proposed policies and measures, for which international funding support is requested. This is also a means by which to establish the credibility of government's own commitment and contribution to climate actions, including Nationally Appropriate Mitigation Actions (NAMAs).

4.4 Accessing Climate Finance through National Funds

What are national climate funds?

National climate funds aim to facilitate the collection, blending, coordination, and accounting of climate finance toward projects and programmes that support the transition toward a zero-carbon economy and/or increase climate resilience. Dedicated funds come in many shapes and sizes; while a common set of services is delivered by most of them, exact financing structures and the components to deliver these vary greatly.

Why is this relevant to CCFFs?

Many countries in Asia-Pacific have already established national climate change funds with regular public funding or concessional finance.

CCFFs can provide a more rational basis for the targeting of national climate fund investment, ensuring that they understand the most effective options for reducing macro-fiscal losses and GHG emission and that the scale of funding matches the level of vulnerability and potential macro-fiscal losses and/or potential contribution to mitigation. It can support prioritisation and more robust applications for smarter investment made by national funds that links to targeted vulnerable groups.

Many countries have one or more national climate funds, which may be funded from the budget, from cesses and other forms of dedicated revenue and/or from international sources. These funds may be operated as competitive grants and loans for new projects, as sources of top-up funding to existing funds or as virtual funds that do not manage expenditure directly but help provide an overview of expenditure trends (see Box 9).

CCFFs can also catalyse thinking around the most efficient capitalization of national funds and their sustainability. It could also encourage the development of criteria and M&E indicators by which domestic financial actors and funding resources can best leverage international climate finance through flagship programmes and partnerships.

Box 9 – National Level Climate Funds

Indonesia established the Indonesia Climate Change Trust Fund in 2010, with funding mainly from donors and management by UNDP. Funding has been for institutional readiness and the moratorium on forest concessions, with some pilot mitigation activities.

Bangladesh has two climate change funds: the climate change Trust Fund (BCCTF) and the climate change Resilience Fund (BCCRF). The Ministry of Environment and Forests provides Secretariat services for both funds. The BCCTF is funded entirely by government whilst the BCCRF is funded by donors. Both funds have been through some challenging periods.

The Cambodia Climate Change Alliance (CCCA) is a donor trust fund providing project finance with management support from UNDP, under the Ministry of Environment, acting as secretariat to the Cambodia Climate Change Council.

The Philippines created a People's Survival Fund (PSF) in 2012, located in the Department of Finance, with wider participation. The PSF is funded from the budget and funds climate change actions at local level. Disbursement has been slow, mainly because of limited local capacity.

Brazil established a National Fund on Climate Change (FNMC) in 2009. The Fund is supervised by the Ministry of Environment, with funding from government, partly from oil industry revenue. The fund covers mitigation and adaptation, including both studies and investments. Projects are implemented by a development banking institutions.

Rwanda established the National Fund for Environment and Climate Change which started in 2013, with funding from government and DFID. The Fund is a challenge programme, inviting proposals from government, NGOs and the private sector.

Vietnam and Pakistan both have also been planning to establish a climate fund. Mexico's new Climate Change General Law refers to the possibility of establishing a Climate Change Fund, but the details of how this will be done have not yet been established. The ASEAN Ministers of Economy and Finance have discussed the possibility of creating a climate fund for the region.

There are also several national funds that address specific sectors of climate change, notably associated with forestry (e.g. in Brazil and Guyana) or energy (e.g. in China and Thailand). In addition, there are a range of donor trust funds that have been developed with government cooperation (e.g. in Ecuador and the Maldives). Pakistan and Tanzania are also now considering a national climate financing mechanism that could work as a virtual fund.

Points to Consider

There are three key ways in which a CCFF can ensure that national climate funds are successful:

- **Integrating Financing Strategies.** A CCFF can help ensure that national climate funds are not used to create parallel funding mechanisms that compete with development funding. Actions critical to broad general development are optimally funded in the development budget. Climate funds can be channelled using top-up funding to cover any additional or incremental climate benefits of routine development projects.
- **Consistent Appraisal.** Most national climate funds approve projects using criteria that include both direct climate benefits and development co-benefits. CCSA techniques can provide a more objective basis for assessing the relative importance of these. This can enhance the targeting of climate funds to actions and beneficiaries (see section 4.1).
- **Financing Scenarios.** Realistic levels of potential support that existing or future national climate funds could provide to priority targets and actions should be incorporated in national climate finance scenarios, so that its relative importance is clear (see section 3.1). It can also take its pipeline into account *vis-à-vis* other flows including private climate capital.

A key to bridging the adaptation finance gap is to incentivize the private sector to invest the business case for investing in mitigation (for example through renewable energy systems or improved energy efficiency) is often more obvious, donor organizations and governments alike can help incentivize private sector investment through (a) ensuring that actionable information on potential climate impacts is accurate, reliable and widely available, (b) promoting systems and mechanisms that reduce risks for private investors (such as risk insurance schemes and other market-based instruments) and (c) leveraging large-scale private investment through public investments in de-risking policies, programmes and mechanisms.

Roles and Responsibilities

National climate funds are typically managed with some degree of independence, but also with some supervision, both financial and technical. ***Technical expertise is coordinated by the CCPB, but may include some specialist sectoral expertise. The MoF will be involved in supervising the financial management of national climate funds, to ensure that standards of accountability and transparency are maintained.*** Both institutions will be involved in supervising the quality of CCSA work. ***LMs are often involved in the design (including CCSA) and the management and monitoring of actions funded by national climate funds.***

Key Sources for Chapter 4

Screening and Appraisal. Many organisations have produced guidelines on screening and appraisal, typically covering CBA and MCA. UNFCCC produced an overview of approaches at http://unfccc.int/ resource/docs/publications/pub_nwp_costs_benefits_adaptation.pdf. OECD's contribution is at http://www.oecd.org/development/environment-development/50012510.pdf. USAID focuses on CBA at https://www.climatelinks.org/resources/methods-economic-analysis-climate-change-adaptation- interventions. ADB have produced a guide that focuses on climate proofing investments at https://www.adb.org/sites/default/files/publication/173454/economic-analysis-climate-proofing- projects.pdf. The World Bank have produced a set of tools that focuses on screening at https://climatescreeningtools.worldbank.org/ and also have another guide that focuses on economic appraisal at http://siteresources.worldbank.org/EXT-TOOLKIT3/Resources/3646250-1250715327143/ GN7.pdf. GIZ have also developed an approach for quantifying the benefits of adaptation, focusing on wealth and health, at http://www.seachangecop.org/node/2773. http://unfccc.int/resource/docs/ publications/pub_nwp_costs_benefits_adaptation.pdf.

Climate Funds. ODI and CPI have compiled various information packs and analyses outlining the resources available from multilateral and bilateral funds. Some CSOs have compiled guidebooks for national actors to improve their access to these various funds. http://www.climatefinancelandscape.org/

Guidance from Climate Funds. The GCF has produced a guide on submitting Concept Notes at http://www.greenclimate.fund/documents/20182/239759/GCF_Concept_Note_User_s_Guide.pdf/ 64866eea-3437-4007-a0e4-01b60e6e463b and a more detailed explanation of their investment criteria at https://www.greenclimate.fund/documents/20182/24949/GCF_B.09_07_- _Further_Development_of_the_Initial_Investment_Framework__Sub-Criteria_ and_Methodology.pdf/18db33f8-a55b-488f-8a6b-5df68f39a137. The Adaptation Fund Guidelines are at www.adaptation-fund.org/wp-content/uploads/2015/03/OPG-ANNEX-4-2-Instructions- Nov2013.pdf. http://www.greenclimate.fund/documents/20182/239759/ GCF_Concept_Note_User_s_Guide.pdf/64866eea-3437-4007-a0e4-01b60e6e463b

5. CCFF Workflows for Monitoring and Evaluation

LM's

CCPB

*This chapter considers how a CCFF adds value to existing frameworks for monitoring climate change actions. It does not consider the monitoring of the CCFF programme of work itself, which is dealt with in section 6. **The monitoring work will normally be coordinated by the Climate Change Policy Body, but with much of the information generated by Line Ministries.***

5.1 Regular Monitoring: indicators to assess expected impact

What are Indicators used to Assess Expected Impact?

Most countries have included targets for GHG emissions in their NDCs, under the Paris Agreement. Many have also included adaptation contributions, usually in the form of their latest commitments to climate change actions. The NDCs are now one of the most powerful policy drivers and monitoring of the CCFF needs to be fully integrated with of NDCs.

Why is this important in a CCFF context?

A CCFF will normally culminate in a "whole of government" strategic financing plan, which could be an annex to, or fully integrated into an MTEF. This would consider whether and the degree to which mitigation and adaptation financing gaps are effectively being closed. It can be also partly based on predictions for how effective planned climate actions would be reducing GHG emissions and macro-fiscal losses. Having robust indicators to monitor changes in the evidence base that determines these results are crucial for this CCFF workflow. For example, the adequacy and effectiveness of existing climate budget expenditure is one such key performance indicator.

Moving Forward

To consolidate monitoring, it is useful for AAs to push for strong political commitment for regular monitoring reports and clear institutional responsibility for producing them.

Most CCFFs call for annual progress reports, produced shortly before the budget cycle to help draw attention to climate change in the budget. Ideally, these annual reports will also be used in conjunction with the measurement, reporting and verification (MRV) on NDCs which are typically compiled by CCPBs. These will include monitoring of expenditure (see section 2.4) and of expected impact, including the following activities:

- A CCFF may improve the understanding of or interpretation of the impacts of annual climate events. Projections of climate change itself rely on evidence from historical trends as well as climate models. For shorter to mid-term projections (i.e. one or two decades), historical trends are at least as informative as models, and the most important contribution of models is for the longer term, when they can pick up possible discontinuities and switching points (e.g. in ocean currents). Historical trends are also the source of evidence most easily understood by the general public and policymakers. It is therefore valuable to monitor annual climate change and show how this affects historical trends (e.g. a hot year will marginally increase a historical upward trend and a cool year will marginally reduce it).

- For mitigation, monitoring of annual changes takes place by monitoring key indicators (e.g. forest cover, industrial output and applying standard emissions factors. These may vary as new practices are introduced (e.g. to make activities more efficient). There are well-established processes for doing this as part of the preparation of GHG inventories and the CCFF adds little value to those processes.

- For adaptation, the impact of climate change expenditure on macro-fiscal losses is unlikely to be observable directly, both because the impact happens only gradually and because it is often highly variable from year to year. The impact can best be inferred by monitoring evidence about the effectiveness of adaptation actions, combined with the evidence on expenditure on those actions. The factors that determine effectiveness are defined through CCSA (see section 4.1) and typically include both physical and institutional indicators. At the national level, these can be aggregated using techniques such as:

  a) Adaptation and mitigation gaps (used in many CCFFs);
  b) More qualitative vulnerability indices (used in vulnerability assessments);
  c) Process indicators, such as UNDP's Climate Change Budgeting Integration Index (UNDP 2015).

***Figure 9* - Indicators to Monitor Change in Effectiveness of Climate Change Actions**

Sector	Indicator
Agriculture	1. Area and yields of drought or flood resistant crop varieties 2. Irrigated area and yields of irrigated crops compared with rain-fed ones 3. Area and yield of land with improved soil moisture management practices 4. Effectiveness and reliability of public institutions and policy in agriculture 5. Clarity of farm/state responsibilities for irrigation O&M, at different scales 6. Absence of institutional blockages (e.g. on land rights, monopolistic markets ...)
Forestry	7. Area of healthy forest 8. Number of climate change threatened forest species, degree of risk and area affected 9. Stability of government policy on licencing and capacity of enforcement 10. Reliability of community forest rights
Water supply	11. Households with drought resilient water supply and level of protection 12. Policies on water pricing 13. Attitudes to managing water use to ensure sustainability of water resources
Energy	14. Energy intensity by sector (industry, agriculture, transport, households, services) 15. Share of renewable energy in total electricity production 16. Share of energy infrastructure climate proofed (hydropower, solar, biomass) 17. Energy pricing and tariff policies 18. Ability to control energy theft
Roads	19. Length of roads with flood resilient design 20. Difference in post flood rehabilitation costs between proofed roads and others 21. Clarity of responsibilities for maintenance between central and local government
Coastal	22. Area protected from sea level rise 23. Community management plans and capacity in coastal areas 24. Incidence rate in climate sensitive diseases 25. Treatment effectiveness rate for climate sensitive diseases 26. Effectiveness of health MIS for responding to changing trends in disease burden
Disaster Management	27. Average lead time (hours) for flood and tidal surge warning 28. Households affected by drought that benefit from weather microinsurance 29. Existence of disaster management institutions

Roles and Responsibilities

The Climate Change Policy Body will typically be responsible for compiling any monitoring reports, including an Annual Progress Report. In fulfilling this responsibility, the Climate Change Policy Body needs to ensure that the monitoring happens in a well-planned manner, covering all the key variables and locations in the country. The Climate Change Policy Body also needs to ensure that funding is available to Line Ministries and CSOs to make the evidence available in a form that is accessible to officials and the wider public, both at national and local levels.

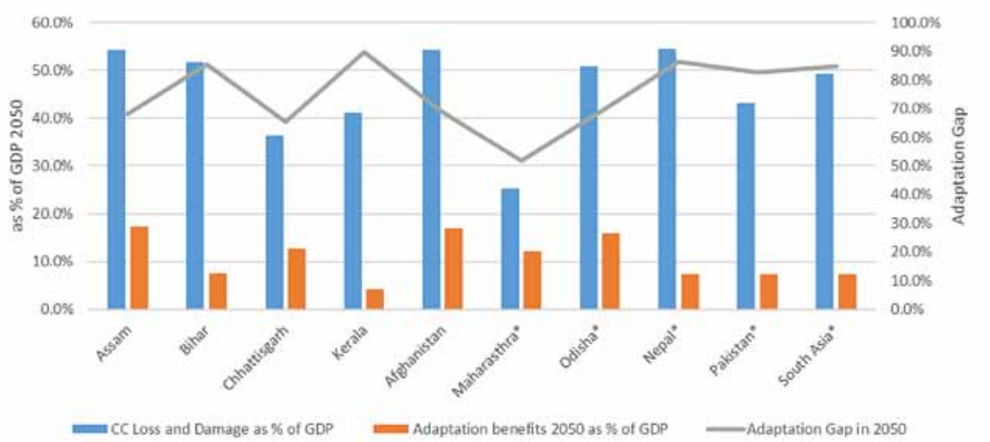
As described in section 2.4, ***MoF generally takes lead responsibility for monitoring expenditure. The government audit institutions also have a role in validating the evidence and some wider public involvement in that monitoring may be possible if budget processes allow for public engagement during negotiations.***

Monitoring and interpreting recent climate data and trends ***will normally be undertaken by specialist government agencies or CSOs involved in climate research***. It may involve some scientific monitoring and could also include participatory research. ***Climate Change Policy Bodies may have a role in ensuring that evidence on individual climate events is interpreted in the context of historical trends.***

The monitoring of indicators that determine expected impact ***will be coordinated by the Climate Change Policy Body and will include the inventory of GHG emissions and the reporting on adaptation expenditure and expected impact.*** This evidence will be used both for national reporting and for submissions to the UNFCCC as the measurement, reporting and verification on NDCs. The nature of NDC reporting on adaptation is still being determined. It is likely to include some form of reporting on the physical progress of climate change actions. The UNFCCC is unlikely to require reporting on effectiveness. ***The reporting on indicators affecting the sustainability of impact will benefit from consultation with CSOs in the sector and from review and support from the parliament.***

Countries may also report separately on the level of international support received and the evidence on the effectiveness of the actions. ***The evidence for this will normally come from MoF, using budget coding/scoring systems, when these are available.***

Figure 10 **- Examples of CCFF Conclusions on the Adaptation Gap**



Source: CCFF work in South Asia

5.2 Evaluation: more in-depth analysis on key issues around impact

What is in-depth Analysis and Evaluation?

Evaluation provides an opportunity for learning lessons and improving the evidence base that can be used to improve the effectiveness of a response.

Why is this important in a CCFF context?

The overall objective of a CCFF is to help governments manage their response to climate change and their ability to protect the country's sustainable development from the risks of macro-fiscal losses from climate change.

At present, the evidence base for this is still weak, especially in developing countries. A CCFF should provide the framework within which to assess priorities for evaluation work and to assess the results.

Moving Forward

The impact of public expenditure on GHG emissions is conceptually straightforward but requires evidence on key variables, like emission factors and marginal abatement costs (MACs). The available evidence on these variables should be regularly updated by occasional evaluation, focusing on the areas where the evidence is considered most important and weakest.

For adaptation, Section 5.1 describes some of the indicators that determine expected impact. In most countries, the evidence on how these indicators can be used to infer expected impact requires research and evaluation is very weak. As such, a sustained effort in ex-post and ex-anti evaluation and research is required to build evidence. This evaluation work raises awareness of the severity of the challenge and the potential solutions and leads to revisions in CCSAPs, to take account of the latest evidence.

Roles and Responsibilities

The Climate Change Policy Body can take the lead in requesting and facilitating evaluation work, ensuring that available resources are allocated to the issues that are most important. The work on evaluating the impact on equity is usually done by CSOs, including research institutes or consulting firms. This ensures independence and government bodies are less able to do the work because it involves occasional activities that are difficult to accommodate within the busy schedules of government institutions. ***CSOs can also play an important role in providing a knowledge management platform and the parliament and media may also play an important role in disseminating the results of evaluation work. Line Ministries are usually responsible for contracting evaluation work*** and ***the Climate Change Policy Body can play a useful role in supporting applications for funding and ensuring that the results of evaluations feed back into strategy revision.***

Key Sources for Chapter 5

Monitoring Climate Change. There are many sources of presenting longer term trends in average rainfall and temperature, such as at http://globalclimatemonitor.org/. The National Centres for Environmental Information (NOAA) presents world maps with 100km grid evidence on recent temperature and precipitation data (including data on rainfall anomalies), updated every month, at https://www.ncdc.noaa.gov/temp-and-precip/global-maps/. This can be used to assess whether rainfall in recent months in a country has conformed with longer term trends and/or projections.

Monitoring Adaptation. SeaChange and UKCIP have produced a review of 16 methods for monitoring and evaluating climate change adaptation at http://www.ukcip.org.uk/wp-content/PDFs/SEA-change- UKCIP-MandE-review.pdf. IIED have produced a system for Tracking Adaptation and Measuring Development (TAMD) which considers both institutional readiness and the effectiveness of expenditure. The system is described at http://www.iied.org/tracking-adaptation-measuring- development-tamd-framework. Save the Children have used the Household Economy Approach to assess changes in vulnerability and have a guide at https://www.savethechildren.org.uk/sites/default/ files/docs/The_Practitioners_Guide_to_HEA_contents_pages_1.pdf. UN Environment have produced a review of the current status of challenges and emerging practice in evaluating climate change adaptation at http://www.unepdtu.org/-/media/Sites/Uneprisoe/Publications%20(Pdfs)/MandE-challenge- guidance-note_01-07-16.ashx?la=da. UNDP have also produced an M&E framework for climate change adaptation at http://www.seachangecop.org/files/documents/ 2007_UNDP_ME_Framework_for_CCA_draft.pdf.

Evaluation. The techniques for evaluation are similar to those for appraisal, although the sources of evidence may be different. A World Bank review of methods for evaluating climate change adaptation projects, with a focus on agriculture and economic evaluation, is at http://documents.worldbank.org/curated/en/354331468176979682/pdf/554700WP0D1CC010Box349454B01PUBLIC1.pdf. OECD have produced a review of methodological approaches to evaluating adaptation at http://www.oecd- ilibrary.org/docserver/download/5jxrclr0ntjd-en.pdf?expires=1482271698&id=id&accname=guest &checksum=95232EA351F36DB2371B2561BFEB9D92. The EU also has a 'BECCA' system for evaluating adaptation, including outcome and process indicators, at http://base-adaptation.eu/sites/ default/files/BASE_Policy_3_June_2015_0.pdf.

6. Coordinating a CCFF Programme of Work

This chapter describes how to coordinate various CCFF components and workflows. It aims to demonstrate that, while there are some common elements to CCFF work, each country will choose a different path to reflect its priorities and practices.

6.1 Managing a Programme of CCFF Work

Most CCFF related work has been led and managed by the institutions that are already responsible for coordinating climate change strategies. As the body responsible for coordinating climate policy, ***the Climate Change Policy Body normally provides oversight to the CCFF process.*** Most Climate Change Policy Bodies are supported by a secretariat, which is usually either a dedicated climate change unit or is the Line Ministry responsible for climate change, which is often the Line Ministry responsible for environment (e.g. Cambodia, Thailand). ***In some countries, the MoF has taken the lead responsibility***, working either largely on its own (e.g. Indonesia) or with other bodies (e.g., Nepal, Afghanistan). ***In other countries, a Line Ministry has been appointed to take the lead, without a Climate Change Policy Body*** (e.g. India). ***Other stakeholders can add weight to their climate financing and budget oversight by engaging the Parliament and the media, building more public awareness and political will.***

Approaches and Sequencing

There have been three broad approaches to managing CCFF workflows to date:

A. The more comprehensive CCFF overview covers all components and involves reasonable levels of consultation and some capacity building, both within government and outside. This approach typically takes at least 9 months, as described in Figure 10. This is the approach taken in Bangladesh, Cambodia and Indonesia. Annex A provides an outline for a ToR for this approach.

B. An overview can also be done more quickly, with less consultation, as an illustrative exercise to build awareness and help plan a more substantial programme of activity. This is the approach taken in most Indian States and in Afghanistan.

C. Some governments have started with a focus on one or two components, without an overview. Usually, this has happened because the institution that is leading on climate change does not yet have wide engagement from other government institutions. For example, in both Thailand and Maharashtra, the focus of the early work has been on improving appraisal, to help justify climate change actions. Similarly, the CCFFs in Assam and Bihar gave more emphasis on rationalising budget allocations to climate actions, using simpler appraisal options.

Many countries have combined the three approaches, starting with an overview, then moving on to more detailed work that would encompass a stronger overall framework as well as more detailed sector analyses with pilot Line Ministries. The most appropriate sequencing will often depend on the status of work on CCSAPs and specific ways that CCFFs can to improve financing plans for them.

Figure 11 **- Example Sequencing of CCFF Activities**

Every country will follow a different sequence of activities, starting first on those that are most important and least well developed and gradually bringing all activities to the same level of completion. The diagram below gives one example of a ten-year programme of bringing all components to 'formalisation'.

	Initial Activities	Piloting	Consolidation	Formalisation	Comment
CC Strategies and Action Plans	Consultation on Vulnerabilty and Options	CCSAPs in Key Sectors	Proposed CCSAP across Sectors	Government Approval	*Usually done before CCFF work, but some refinement on costing during CCFF*
CC Loss and Damage	Qualititative Vulnerability Analysis	Sectoral Economic Impact Analysis	National Level Impact Analysis	Inclusion of Economic Impact in National Development Strategy	*Requires triangulation from all evidence sources*
Effectiveness of Expenditure in Adaptation and/or Mitigation	Awareness and Understanding of CCIA Principles/Options	Case Studies for Key Sectors	Guidelines for CCIA	Instructions to Conduct CCIA as Part of Budget Submissions	*Requires major capacity building in impact analysis useful for development as well as CC*
Past Expenditure Trends	Classification of Expenditure using Standard System	Piloting Budget Codes/Scores in Key Sectors	Guidelines on Budget Coding/Scoring	CC Tables in Real Time Budget Tables and Public Accounts	*Should become simpler with growing international consensus on methods*
Financing Scenarios	Assume Current Patterns are Maintained	Consultation with MoF and Key Funds and Partners	Proposed Financing Scenarios	CC Ceilings/Targets by Sector in Budget Circular	*Needs to integrate with MTEF work, which requires institutional coordination*
Allocation of Resources to CC Actions	Bottom-up Costing with No Resource Constraint	Key Sectors Adjust Costs to Fit Financing Ceilings/Targets	All Sectors Revise Costs of Actions to Fit Financing Targets	Budget Submission Required to Show CC Spending Fitting Target	*Needs clarity over the role of 'costs' and authority to require analysis*
Impact of Actions in Reducing GDP Loss	Qualitative Assessment of How Expenditure Reduces L&D	Key Sectors Use Effectiveness to Estimate Reduced L&D	National Estimates for Reduced L&D	Sector and National Plans Reflect Targets for Adaptation Gap	*Potentially valuable for advocacy*
	Year 1	Year 2	Year 5	Year 10	*Typical progress, though each country follows their own sequence and pace*

Technical Resources

In all cases, the early phases of CCFF work have involved a significant additional burden and so have been contracted out by government. ***While most of the work has been done by consulting firms, some research institutes have been involved, but they have mostly been operating as consulting firms, responding to a terms of reference agreed by the government.*** Additional financing has usually been provided by international institutions. The consulting teams have generally involved a group of national experts, plus one or two international experts. Some wider consultation has taken place, but most of the consultation has been within government.

Maintaining Momentum

Initial CCFF related analyses, coupled with a clear advocacy strategy, often play an important awareness raising role, explaining the scale of the challenge, the breadth of the effort already taking place and giving some indication of the nature of the response. Experience suggests that this does not automatically lead to strong commitment in Line Ministries or in MoF. ***It needs to be followed up by several further phases of work, to build confidence that the response is credible. It can be useful for the Climate Change Policy Body to plan a medium term commitment to several phases of CCFF work and to have realistic expectations of how quickly Line Ministries and MoF will become committed. The more that senior political leadership of the country (i.e. leaders, cabinet, parliament) provides support for the CCFF process, the more robust and effective the resulting outcomes will be. Policy oversight mechanisms could be linked to the implementation of international commitments, such as the INDCs/NDCs.***

The Philippines provides a good example of strong political leadership (see Box 10). The MoF in Indonesia has also played a very active and formative role, over a sustained period. In Nepal, strong support from the MoF has been important, although there is also good interest and initiative across government. In Bangladesh, there has also been sustained political leadership, but this is spread fairly evenly across all government institutions, without the requirement for a leading institution. Cambodia has also benefited from strong and sustained leadership from the National Council for Climate Change, supported by its secretariat, which has led to the widening of interest from other bodies.

Box 10 **- Political Leadership in the Philippines**

Political leadership in the Philippines is provided by a strong Climate Change Commission (CCC), created by a Climate Change Act (2009), chaired by the President and supported by a National Panel of Technical Experts, and Advisory Board (including representation from local government, civil society and the private sector) and a Secretariat (the Climate Change Office).

The budget process is relatively transparent, compared to other countries in the region, according to the Open Budget Index. There are various hubs and portals that enable CSO engagement and the budget is subject to public hearings. There are Climate Change Committees in both houses of parliament. The Commission on Audit provides independent assessments and occasionally reports on climate change related expenditure programmes.

There is a Climate Change Strategy and a National Climate Change Action Plan. A system of Climate Change Expenditure Tags (CCETs) is in use which includes a scoring system. There is widespread public awareness of vulnerability and commitment to national and local climate change strategies and Climate Change legislation and of a national fund (the People's Survival Fund) has helped to ensure active implementation.

Source: A Stocktake of Climate Change Financing Frameworks in Asia Pacific, UNDP, 2016

6.2 Lessons on Coordinating a CCFF Programme of Work

Based on global experiences, some general conclusions can be drawn on how best to coordinate a CCFF programme of work.

1. CCFF work requires collaboration across many government bodies and benefits greatly from an inter-ministerial coordinating body that is dedicated to climate change (i.e. a Climate Change Policy Body). Most CCPBs are supported by a Secretariat, usually the ministry in charge of environment.

2. Progress with elaborating a CCFF is greatly facilitated if supported by the ministries responsible for planning, economic development and finance. Engagement with and support from Parliament and the Cabinet in driving the process can also be a strong mechanism for political buy-in and accountability. However, in some countries these central institutions have been sceptical of climate change and have participated only as observers, at least initially. If a Climate Change Policy Body does not exist and the central bodies are cautious about being engaged, then early leadership may fall to the ministry in charge of environment.

3. Selected Line Ministries (e.g. agriculture, water, forestry, energy, health, housing, urban planning) would ideally be consulted by the coordinating institution to ensure that they were comfortable with the nature and level of their engagement in the CCFF work programme. Typically, this would include the formation of LM working groups and participation in the Climate Change Policy Body.

5. CCFF work normally requires some external expertise to supplement the expertise in government. This includes expertise in climate science and economics, in public finance and in planning, including methods of appraisal and prioritisation. The level of expertise required varies depending on the CCFF process and scope but it is likely to benefit from some international expertise as the approach is still relatively new. The external expertise should work jointly with officials.

6. CCFF work aims to integrate the strategic management of new funding and of existing expenditure within the budget and wider development assistance. In countries that are heavily dependent on international partners, the main interest may be on raising new funds and providing a sound basis for applications to funds. However, even in these countries, CCFF coordination should ensure that new funding is complementary to existing development work, since the largest contributions to mitigation and adaptation usually come from existing development actions.

Despite the complexity of the CCFF process, policymakers can take comfort in the fact that there is a growing cohort of countries that have embarked upon or are refining a CCFF from which to draw practical lessons.

Annex A

Action Points to Consider:

Climate Change Policy Body

- ☑ Advise all government actors and Accountability Actors on how Climate Change Strategies and Action Plans (CCSAPs) will be resourced and what to include in key budget documents.
- ☑ Ensure the quality of risk, vulnerability and loss and damage assessments (Section 2.1).
- ☑ Define a standard national approach to the classification of climate finance, working in collaboration with Planning and Investment Ministries. Give guidelines and technical support to all relevant actors to apply a coherent approach (section 2.2).
- ☑ Estimate total impact of climate spending across all Line Ministries and Investment Agencies, and provide further guidance to them on ways to justify programmes for public funding in relation to CCSAP priorities and avoiding/mitigating future economic impacts (Section 2.5 & Section 4.2).
- ☑ Provide guidance on balance between 'hard' and soft' actions within financing plans. (Section 2.5).
- ☑ Support other actors by providing analysis of the economic impact of climate change and building a library of evidence. Support knowledge management systems to ensure information is widely available (Section 2.1 & 3.1).
- ☑ Provide quality control to Line Ministries submissions for climate change related programmes (including proposals for classification and coding) as part of budget preparation and negotiation cycles. Suggest further work if necessary (Section 3.3 & 4.2).
- ☑ Coordinate monitoring of indicators related to impact of climate spending and financing. This could include cost effectiveness of mitigation strategies and reporting on how well existing adaptation expenditure reduces economic losses and damages in different time scales. This may require providing funding or expertise to Line Ministries and NGOs to generate evidence for monitoring and oversight purposes (Section 5.1).
- ☑ Coordinate technical expertise on increasing access to climate finance as part of routine budget and programme monitoring. Support applications for funding and ensure results of evaluations feed back into strategy revisions (Section 4.3 & 5.2).

Action Points to Consider:

Ministry of Finance (MoF)

- ☑ Include section in budget strategy policy paper highlighting climate change as an economic issue and available data and trends in climate expenditure. (Section 3.2)
- ☑ Determine strategy and entry points for climate budget coding. Oversee pilots to embed routine coding in initial areas and/or sectors, as appropriate. (Section 2.4)
- ☑ Produce climate-relevant expenditure tables and input to guide the setting of sectoral budget ceilings. (section 2.4)
- ☑ Determine level of available international finance along with CPBD. (Section 3.1)
- ☑ Interrogate Line Ministries (as part of initial budget negotiations) whether their climate expenditure is in line with ceilings or targets provided in budget circular. (Section 3.3)
- ☑ Ensure tagging/coding of allocation and expenditures is integrated into relevant budget management software and FMIS. (Section 3.3)
- ☑ Include virtual budget tables of climate expenditure as part of budget submissions to Accountability Actors and Cabinet, using the coding/scoring in budget software. (Section 3.3)
- ☑ Provide advice and/or quality control over CCSA and macro-fiscal impact assessments of key national programmes. (Section 4.1)
- ☑ Check whether expected financing in Line Ministries' budget submissions are consistent with macro-level financing scenarios in the CCFF. (Section 4.2)
- ☑ Supervise the regulation and financial management of national climate funds to maintain high standards of transparency and accountability. (Section 4.3)
- ☑ Monitor expenditures, and when reporting on international support received, provide evidence through coding/scoring systems where available. (Section 5.1)

Action Points to Consider:

Ministry of Planning and Investment

- ☑ Build consensus and lead CCFF workflows designed to ensure integrated national sustainable development plans that fully take low-emission and climate resilient development strategies into account. (Section 2.3)
- ☑ Adjust planning projections and estimates of investment needs as part of national economic plans and priority investment strategies. (Section 3.1)
- ☑ Develop clear process for mandatory climate screening and appraisal for critical investment programmes, based on CCFF policy road map. (Section 3.2)
- ☑ Revise programme planning and budget submission templates/forms to capture information on climate risk screening or preliminary appraisal results. (Section 3.2)
- ☑ Adjust growth projections and investment needs as part of national economic plans. Support development of Financing Scenarios. (Section 3.1)

Action Points to Consider:

Line Ministry and Investment Agency

- ☑ Provide guidance on realistic costing and to Ministries of Finance on allocations needed to reach specific climate policy targets and actions. (Section 2.5)
- ☑ Assume primary responsibility for classifying expenditure and investment appraisals in most systems. (Section 2.2 & 4.1)
- ☑ Present expenditure trends in expenditure tracking submissions. (Section 2.4)
- ☑ Ensure optimal and balanced allocations, and appropriate investment sequencing strategies, through CCSA and financing plans. (Section 2.5)
- ☑ Strengthen or revise submissions during budget negotiations and respond to all queries. (Section 3.3)
- ☑ Complete budget submissions and update budget software based on CCPB guidelines (Section 4.2)
- ☑ Provide virtual budget tables on climate change expenditure for each department, divisions and other organisational budget heads as part of budget submissions (Section 4.2)
- ☑ Establish sector baselines if not yet available to improve national valuation of current and future climate effects. Include evidence of how sectoral programmes would contribute to reducing or avoiding future public spending in budget requests. (Section 2.1 & 4.2)
- ☑ Consult with private sector and Ministries of Planning and Investment justify international co-financing and contribute the design and monitoring of actions funded by national climate funds. (Section 4.2 & 4.3)
- ☑ Contract evaluation work for monitoring and evaluation. (Section 5.2)

Action Points to Consider:

Accountability Actors (AAs)

- ☑ CSOs and non-executive actors advocate for more adequate and predictable climate finance. Ensure evidence is presented clearly to politicians, government officials, parliamentarians and the media. (Section 2.1)
- ☑ CSOs assist Line Ministries with classifying climate change expenditure. (Section 2.2)
- ☑ CSOs given access to climate change virtual budgets for more transparent expenditure tracking. (Section 2.4)
- ☑ Climate change and economics focused CSOs consulted during the creation financing plans. (Section 2.5)
- ☑ Legislators and CSOs consulted on integrating climate change into budget guidance documents. (Section 3.2)
- ☑ Parliamentary Climate Change Committees review whether Line Ministries meet their climate change expenditure ceilings/targets. (Section 3.3)
- ☑ CSOs review government analysis in budget submissions. (Section 4.2)
- ☑ Specialist government agencies or CSOs involved in climate research: continually monitor and review climate data. (Section 5.1)
- ☑ CSOs and parliament: consult on sustainability indicators. (Section 5.1)
- ☑ CSOs: (including research institutes or consulting firms) evaluate impacts on equity. (Section 5.2)
- ☑ CSOs: provide a knowledge management platform to assist with evaluation. (Section 5.2)
- ☑ Parliament and media to disseminate the results of evaluation work. (Section 5.2)

Annex B

Hypothetical Terms of Reference (ToR) for an initial CCFF Review

This annex presents an abbreviated version of ToRs that could be used to initiate a CCFF. It assumes that the country has an existing Climate Change Action Plan, but with imperfect costing of actions. In practice, countries are likely to emphasise some components over others.

Introduction

Description of the development situation and the vulnerability of the country to climate change along with any existing work on climate change strategies and action plans.

Objectives

The wider objectives of the CCFF work is to reduce macro-fiscal losses for people and ecosystems either directly (through adaptation) or indirectly (through mitigation). The immediate objectives are: a) better understanding of the full range of climate change related expenditure; b) better understanding of how climate change affects the performance on public expenditure; c) optimizing resource allocation; and d) changes to planning and budgeting processes.

Activities and Outputs

The work will be divided into 4 phases.

Inception Phase. Some preparatory desk analysis, covering: a) evidence on vulnerability and potential climate change impact; and b) evidence on existing financing. Finalising the work programme and the scope of the CCFF report, in consultation with government.

Phase 1: Initial Scenarios and Consultation. Phase 1 will involve the following activities.

- Review evidence on vulnerability and estimate L&D in terms of the impact on GDP growth for each sector, triangulating from all sources of evidence available. This activity will be done in consultation with CCPB, relevant research institutes, and the LMs responsible for each sector.
- Obtain data on recent expenditure, including on and off budget expenditure for the last 3 years.
- Classify expenditure according to degree of climate change relevance, using the default international ranges as guidance, with the specific CC% for each item reflecting the nature of vulnerability. This classification will include an estimate of the implications of climate change for the benefits provided by each action. This activity will be done in collaboration with the LMs responsible for each action.
- Define two financing scenarios, one realistic and one optimistic, based on the baseline of recent expenditure and assumptions about future trends in that expenditure, plus evidence on expected disbursement from new climate funds and expected country share.
- Review the actions defined in relevant climate policy and strategy documents and compare against the impacts expected to be averted by the actions.
- Provide criteria and evidence for a proposed 'allocation' of resources consistent with overall financing scenarios. The allocations should also include some guidance on the comparative advantage of different sources for each action.

The above work will be compiled into an Interim Report and a workshop should then be held to discuss the initial 'policy neutral' allocations. Line Ministries will be invited to refine the allocations to actions within their responsibility, adjusting the levels and/or the phasing of the actions.

Phase 2: Refinement and Draft Report. The input from Line Ministries will be incorporated into a Draft Report that reflects the priorities and phasing. It will also include refined estimates of potential impact of spending in reducing macro-fiscal losses and/or GHG emissions. It will also include a chapter proposing next steps for institutional management of financing for CCFF implementation.

The Draft Report will be discussed by all relevant government bodies. This may include some refinement of the allocations between Line Ministries to reflect the latest policy priorities.

Phase 3: Final Report. A Draft Final Report will be produced that reflects the input from the central ministries and this will be checked with these institutions. When the Government is happy with the Draft Final Report, it will be presented for validation at a final workshop including Line Ministries. The content of the final reports will be refined during Inception, but may include the following chapters.

1. Background and methodology
2. Vulnerability to climate change and expected loss/damage
3. Full range of climate change actions (existing and options for the future)
4. Financing already provided for climate change (both in the budget and by donors)
5. Effectiveness of climate change actions (climate change relevance)
6. Scenarios for future financing (budget, donors, climate change funds ...)
7. Allocations of available financing to climate change actions
8. Indicative estimates of expected impact climate change financing
9. Institutional arrangements for next steps

Resources and Management

The work will be guided by a Steering Committee including Ministries of Finance, Planning and Environment and the Climate Change Council. The work will be undertaken by four experts.

Team Leader (TL). The TL will provide overall guidance on the management of the CCFF. He/she will take part in the workshops, to explain the importance of the work and how the initiative fits with other work in the region. The TL will be responsible for chapters 1, 6 and 9 of the Report. The TL should have at least 15 years' broad experience in planning and finance in the region.

Public Finance Expert (PFM). The PFM expert will be responsible for relationships with MoF and will ensure that they provide guidance and are fully supportive of the approaches taken. He/she will be responsible for the analysis of recent expenditure and will take the lead on consultation with Line Ministries over resource allocation. He/she will be responsible for chapters 4 and 7 of the Report.

Climate Change Expert (Climate Change). The climate change expert will be responsible for providing the assessment of expected macro-fiscal losses and classifying the climate change relevance of all actions. He/she will lead consultation with LMs and be responsible for chapters 2, 3, 5 and 8 of the Report. The climate change expert should have strong experience of assessing vulnerability to climate change and of government planning in key climate change sectors.

International CCFF Expert (CCFF). The CCFF expert will provide overall support on the methodology. He/she will also assist in the final compilation of the report to ensure that it matches best practice from CCFF work in other countries. The CCFF expert should have at least 20 years experience in economic planning and finance and at least 5 years experience with CCFF work.

Month	M1	M2	M3	M4	M5	M6	M7	M8	M9
1. Inception, LM teams, consultation groups	----								
2. Review and analysis	---	-----							
Reviewing strategies, finance and institutions		--	--						
Defining climate financing scenarios and LM ceilings		--	-----	-----	-----				
Priority actions: longlist, benefits, shortlist, resources					--				
Progress Report, including shortlisted actions									
3. Consultation and reporting									
Assessment of net impact on GDP and budget						-----			
Final Road Map Agreed/ Consultation						-----			
Draft CCFF, Final CCFF, Public launch							-----	-----	-----

Annex C

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Bibliography

Adapation Fund (2016). "Operational Policies and Guidelines for Parties to Access Resources from the Adaptation Fund."
ADB (2009). "The Economics of Climate Change in Southeast Asia: A Regional Review."
ADB (2013). "Cost Benefit Analysis for Development: A Practical Guide."
ADB (2015). "Economic Analysis of Climate-Proofing Investment Projects."
Ahmed, M. and S. Suphachalasai (2014). "Assessing the Costs of Climate Change and Adaptation in South Asia."
Barbara Buchner, C. T., Federico Mazza, Dario Abramskiehn and David Wang (2015). "Global Landscape of Climate Finance 2015." CPI.
Bodnar, P., et al. (2015). "What Counts: Tools to Help Define and Understand Progress Towards the $100 Billion Climate Finance Commitment."
Brooks, N. and S. Fisher (2014). Tracking Adaptation and Measuring Development: a step-by-step guide. IIED.
Buchner, B., et al. (2012). "Public Climate Finance: A Survey of Systems to Monitor and Evaluate Climate Finance Effectiveness."
ECOFYS and World Bank (2014). State and Trends of Carbon Pricing.
FAO (undated). "The Modelling System for Agricultural Impacts of Climate Change."
GCF (2015). "Investment Opportunities for the GCF."
GiZ. A Framework for Vulnerability Assessments.
GGAA (2013). "The Green Investment Report: the ways and means to unlock private finance for green growth."
Guiteras, R. (2009). "The Impact of Climate Change on Indian Agriculture, University of Maryland."
HM Treasury (2011). "The Green Book: Appraisal and Evaluation in Central Government." IPCC (2001). Third Assessment Report.
IPCC (2007). "Climate Change 2007 Synthesis Report."
IPCC (2012). "Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: Full Report."
IPCC (2014). "Fifth Assessment Report: Summary for Policy Makers."
Mendelsohn, R. O., et al. (1998). Country-specific market impacts of climate change. Climatic Change 45(3-4): 553-569.
MoF (2014). "Green Planning and Budgeting Strategy for Indonesia's Sustainable Development 2015 - 2019."
Nelson, G. C., et al. (2010). "Food Security, Farming and Climate Change to 2050: scanarios, results, policy options."
Nordhaus, W. D. and J. G. Boyer (2000). "Warming the World: the Economics of the Greenhouse Effect." Cambridge, MA: MIT Press.
ODI HBS (online). "Climate Funds Update."
OECD (2006). "Cost Benefit Analysis and the Environment."
OECD (2011). "Handbook on the OECD-DAC Climate Markers."
Parry, M. (2004). "Global impacts of climate change under the SRES scenarios." Global Environmental Change 14(1): 1-1.
Passel, S. V., et al. (2012). "A Ricardian Analysis of the Impact of Climate Change on European Agriculture." Fondazione Eni Enrico Mattei: Nota de Lavoro.
Seo, N. and R. Mendelsohn (2007). "A Ricardian Analysis of the Impact of Climate Change on Latin American Farms." World Bank Policy Research Working Paper 4163, March 2007.
Stern, N. (2006). "Stern Review on The Economics of Climate Change."
Tol, R. S. J. (2002). Estimates of the damage costs of climate change – part II: dynamic estimates. Environmental and Resource Economics 21: 135-160.
UNDP (2009). "Methodological Guidebook for the Assessment of Investment and Financial Flows to Address Climate Change."
UNDP (2015). "Measuring the Integration of Climate Change in PFM Systems."
UNFCCC (2007). "Investment and Financial Flows to Address Climate Change."
UNFCCC (online). "Compendium on methods and tools to evaluate impacts of, and vulnerability and adaptation to, climate change."
World Bank (2010). "Economics of Adaptation to Climate Change: Synthesis Report."
World Bank (2013). "Turn Down the Heat: Climate Extremes, Regional Impacts and the Case for Resilience."

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