
Part A: Introduction

Chapter 1: The analysis of climate change finance

Neil Bird and Godber Tumushabe

1.1 The significance of climate change finance analysis

Climate change is a relatively new area of public policy, one that will have a significant impact on economic development and will also directly affect people's lives and livelihoods. Current understanding of what the cost of responding to climate change will be over the short to medium term is limited but expanding. One important starting point in attempts to better understand the costs involved is to identify what governments are at present spending to fund climate change-related activities. This can provide an indication of how far national responses to climate change have evolved.

Meanwhile, looking forward, the expected rapid growth in climate change public expenditure will raise governance and management challenges for implementing agencies that need to be considered in the design and execution of national climate change strategies.

At the international level, the 2015 Paris Agreement of the Parties to the UN Framework Convention on Climate Change (UNFCCC) aims to avoid the most dangerous impacts of global warming. An important component of this international response is the provision of new and additional finance to support actions carried out within the world's more vulnerable countries. This is recognised in the goal set by the international community for developed countries to raise \$100 billion per year by 2020. International support to assist developing countries in preparing for and responding to climate change is already forthcoming. However, international funds raise questions related to sustainability and how to channel such support into national systems. There is also the broader question of how to prioritise

spending of finite public financial resources. Budgetary allocations are never sufficient to meet all spending needs, which means a review of the strength of the national budget systems that manage climate change-relevant expenditures is important.

Measuring public spending on climate change actions is fraught with difficulties, given the definitional ambiguity of such actions and the complexity of public funding flows. There are a number of further challenges to face: there is often limited information on actual expenditures (as opposed to budget estimates); the national budget classification can act as a barrier to the interpretation of climate change actions; and in many developing countries a significant amount of international funding does not pass through the national budget. So, at present, measuring public climate change finance, and therefore promoting effective practice in the allocation of public funds to climate change-related actions, is constrained.

This publication aims to address both of these challenges, by describing how to identify relevant public expenditure and then to measure the effectiveness of such spending against an analytical framework developed for the purpose. It also helps identify gaps where increased funding from both domestic and international sources may be required. This approach can thus support governments to improve the prioritisation, efficiency and effectiveness of public resources directed at supporting climate change adaptation and mitigation actions.

1.2 Classifying climate change finance

In the absence of an internationally agreed definition of climate finance, the approach our country studies has taken has entailed following a

country-led understanding of what spending should cover, based on what national policy documents have defined as the response to climate change. All countries recognise mitigation and adaptation as two complementary strategies in response to climate change, and expenditure items can be classified as contributing to these two strategies.

There are conceptual differences between an activity (and hence an expenditure) that aims to help institutions, systems and communities adapt to the realities of a changing climate; and those that seek to reduce the change in the climate itself by mitigating the impacts of human activity through a reduction in greenhouse gas emissions (GHGs).

Understanding the balance of climate change-related activities between these two strategies in each government can provide important information on the nature of their response to the public policy challenge of climate change.

However, classifying expenditures as relevant to mitigation or adaptation requires expert judgement, as allocation into a mitigation or adaptation category cannot be externally and objectively determined with complete confidence. Table 1.1 gives the definitions the country studies use to make these judgements. In each country, where information in the budget documentation was insufficient to make such a determination, further

Table 1.1: Definitions of mitigation and adaptation

Category	Definition
Mitigation	Human interventions to reduce the sources, or enhance the sinks, of GHGs. All climate change mitigation actions aim to reduce the concentration of atmospheric GHGs.
Adaptation	Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Source: OECD (2011).

investigation was undertaken through additional budget documentation and/or direct contact with the ministry concerned.

These definitions are consistent with the emerging international consensus on a definition for climate finance. The 2014 Biennial Assessment and Overview of Climate Finance Flows Report of the UNFCCC Standing Committee on Finance proposed the following definition, based on a review of existing operational definitions: ‘Climate finance aims at reducing emissions, and enhancing sinks of greenhouse gases and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts’ (UNFCCC, 2014: 5). Such a definition recognises all types of spending directed at the twin strategies of mitigation and adaptation.

Other classification approaches include additional categories such as capacity-building or

technology transfer alongside mitigation and adaptation. Given that the identification of climate finance is at an early stage of development, this publication examines only the first two categories (of adaptation and mitigation). Future analyses could consider expanding the range of activities to include in the classification so as to gain a clearer understanding of public spending on climate change.

It is important to acknowledge that spending on climate change can come from a variety of sources. These may include international climate funds, bilateral and multilateral donors, development finance institutions, domestic public funds, private sector finance and funds channelled through non-governmental organisations (NGOs). This publication focuses on public funds allocated to finance climate change actions through the national budget, as such spending is assumed to be most

closely aligned with national policy settings and domestic institutional arrangements.

1.3 Objectives of the analysis

The primary objective of our analysis is to understand the extent to which public expenditure responds to national climate change policy and the institutional demands required to implement it. This is achieved by quantifying the amount of public spending on activities related to climate change that pass through a country's budgetary system in response to the national policy setting. Recommendations can then be made for the further integration of such expenditure into budgetary allocation and budget execution processes. This objective is met by examining three interlinked analytical elements:

1. Examining **national policy processes** helps us build a picture of the overall context for climate change public expenditure, from the formulation of climate change policy to its linkages to spending through national strategies and action plans.
2. Mapping the **institutional architecture** unpacks the role and responsibilities of institutions involved in managing the response to climate change and their interaction. This provides an important basis for the allocation of public spending on climate change actions.
3. **Public expenditure** analysis quantifies climate change-relevant expenditures in the national budget. This is done by identifying selected activities, projects and programmes that are recognised as being part of the national response to climate change and then extracting and summarising budget estimates and, where possible, actual expenditures from the budget documentation.

1.4 Countries studied

Climate change is a phenomenon whose impacts are now being felt across all regions of the world. However, these impacts are unequally distributed and their consequences depend, in part, on the economic and technological capacity of each country. Climate change predictions indicate that

Africa south of the Sahara is the region that will be most affected (Solomon et al., 2007). Here, the increase in magnitude and frequency of climate variability is already causing concern for both national governments and the international community. The four countries of this study – Ethiopia, Ghana, Tanzania and Uganda – therefore provide valuable insights into the early mobilisation of climate change finance within an important region, as each country attempts to address the new challenges climate change is bringing about.

1.4.1 Ethiopia

Ethiopia has experienced strong economic growth in recent years, but the country has historically been plagued by weather extremes (particularly droughts), resulting in large income swings; such shocks are expected to become more pronounced and frequent in the future. The country is already experiencing more frequent droughts than in the past, leading to water scarcity and degradation of range resources, with a negative impact on food production.

Agriculture, water and range resources, biodiversity and human health are directly vulnerable to climate variability and change, with potentially huge social and economic impacts. There is also growing evidence of a link between climate-related disasters, conflict and security, with pressure on resources often leading to increased mobility and the probability of conflict.

Despite these challenges, Ethiopia has taken significant steps in terms of a national policy response and the design of sector strategies to deal with current as well as future impacts of climate change. The formulation of the 2011 Climate-Resilient Green Economy (CRGE) Strategy is considered a major step forward in terms of the country's commitment towards building a green economy that is also resilient to climate change (FDRE, 2011). The importance of this strategy is demonstrated by analysis that shows climate change may affect the gross domestic product (GDP) growth of the country by between 0.5% and 2.5% each year unless effective steps to build resilience are taken. Climate change thus has the potential to hold back economic progress, thereby exacerbating social and economic problems.

1.4.2 Ghana

Increasing climate variability is a serious threat to Ghana's national development also. Temperature increase, sea-level rise and greater rainfall variability (including unpredictable and extreme events) are some of the established evidence associated with climate change in Ghana. These impacts could thwart the country's vision of becoming a stable middle-income nation by 2020 because they will compound existing socioeconomic inequalities. Sectors such as agriculture, water resources, land, fisheries, forestry and energy, on which most people depend for their livelihoods, are expected to be severely affected.

The 2014 National Climate Change Policy (NCCP) gave policy direction to the government's response to climate change (MESTI, 2014). The vision of this policy is to ensure a climate-resilient and climate-compatible economy while achieving sustainable development through equitable low-carbon economic growth. As in Ethiopia, the national policy makes new and additional demands on public spending.

1.4.3 Tanzania

In Tanzania, the impact of climate variability is being felt in many sectors of the economy and there is evidence to show such variability is disproportionately affecting vulnerable sectors such as land, agriculture, water, energy and forestry. The complex relationship between climate change, water and poverty in the country is exacerbating these impacts. For example, climate change impacts on water systems can result in prolonged droughts, leading to a reduction in crop yields, food insecurity, water scarcity and recurrent power shortages; or to major floods that cause massive loss of property and lives. Climate variability is also interacting with other stress factors such as low levels of technology, poor governance and limited access to information to worsen the country's existing vulnerabilities.

In this context, the 2012 National Climate Change Strategy (NCCS) provides guidance for many of the implementation and coordination challenges (URT, 2012). However, as in the other three countries, less attention has been given to the funding of this response. So, while the National

Climate Change Strategy represents a significant milestone, it contains only the briefest of references to what financing mechanisms will be required to implement the proposed actions.

1.4.4 Uganda

As with the other three countries, Uganda's macroeconomic performance over the recent past has been strong, with steady growth in GDP since the late 1980s. GDP composition has shifted over time, with significant growth coming from the services and industrial sectors, although employment remains concentrated in the climate-vulnerable agriculture sector. Climate trends in Uganda remain uncertain. However, an increase in average temperature and a significant increase in mean annual rainfall are expected, with changes in the severity and frequency of extreme events (floods, droughts, heatwaves and storms).

Climate change as a policy concern has advanced in Uganda in recent years, with policy articulation on climate change increasingly becoming more consistent, clear and coherent. The 2012 National Climate Change Policy (NCCP) was an important milestone. However, policy narratives on funding with regard to volume, sources and delivery mechanisms are only now beginning to emerge. The present institutional arrangements concerning government's response to climate change are in a state of transition, with the creation of several new institutional structures making additional demands on the public finances.

1.5 Five questions posed

Five questions guide the analysis and provide a structure for the country accounts. Although descriptive in nature, the answers to these questions provide important information for an analysis of the effectiveness of public spending on climate change actions. The five questions each country study addresses are:

1. What is the level of public spending on climate change actions?
2. Who within the government administration is committing this spending?

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3. How strong is climate change as an objective of this expenditure?
 4. What climate change strategies are being supported?
 5. Where is the finance coming from?

By answering each of these questions, the country studies, individually and collectively, contribute to an improved understanding of the effectiveness of public spending on climate change, potentially strengthening the national (and international) response to this global phenomenon.

1.6 Structure of the book

This book is divided into three parts. The first part, which includes this introductory chapter, also

outlines the effectiveness framework used in each of the country studies. A third chapter discusses the methodological challenges associated with public expenditure reviews as applied to national climate change actions. The second part of the book provides country accounts for Ethiopia, Ghana, Tanzania and Uganda on the level and nature of climate change-relevant public spending, set in the context of each country's macroeconomic and public finance management systems. The final section concludes by drawing lessons for policy development, institutional strengthening, local delivery of climate change finance and monitoring of public finance, based on the insights gained from the country studies.

Chapter 2: An analytical framework to assess the effectiveness of public climate change finance

Neil Bird, Simon Bawakyillenuo and Nella Canales Trujillo

2.1 Introduction

This chapter describes the analytical framework that was developed for the four country studies and used to assess the effectiveness of public climate change finance. This framework provides an approach to measuring the overall effectiveness of the national systems that underpin public climate change finance delivery. Specifically, we assess three interlinked elements: the policy environment that supports climate change expenditures; the institutional architecture that determines relevant roles and responsibilities over funding decisions; and the public finance system through which climate change relevant expenditures are channelled. Key principles of effective climate finance delivery for each of these three elements are defined from the literature. We also define criteria and indicators that reflect the practical expression of the principles.

2.2 The effectiveness framework

Effectiveness is a performance measure and its scope depends on identifying an objective or problem to be solved, which is determined within a particular context. In this case, the objective is the national response to climate change in developing countries and the role public funding plays in that response.

The assessment framework uses a hierarchy of principles, criteria and indicators (PCI). The selected principles were drawn from the international literature and collectively indicate the characteristics of effective climate change finance delivery (see Bird et al., 2013). They are not intended to define any

ideal state, but rather provide a pragmatic challenge to current practice that can highlight important areas for progress. The framework provides, therefore, an outline for lines of enquiry rather than indicating a best practice ideal.

The principles attempt to formulate what good governance in the sphere of climate change public financial management (PFM) should look like. There is an extensive literature that supports, challenges and critiques the good governance approach and the (mis-)use of international best practice formulas to guide development interventions in low-income countries. Building on this debate, it is important to recognise that most government institutions, their policies and their spending patterns are often far from ideal. Country context varies enormously, from middle-income high-capability states through to fragile low-income states with weak government capacity. The application of this framework therefore needs to acknowledge these differing contexts and be interpreted on a country-by-country basis.

2.3 What makes climate change finance delivery effective in the national context?

The three interlinked elements of national public administration that provide information on the performance of the systems in place to manage climate change finance are not separate spheres of activity, but are intimately related with many interactions:

1. the overall policy environment that supports climate change expenditure, from the formulation of climate change policy to its linkages to spending through national strategies and action plans
2. the institutional architecture that determines the role and responsibilities of the different parts of the government administration involved in managing the response to climate change, and their interaction
3. the financial systems and instruments through which climate change-related expenditures are channelled, for example the national budget and other funding mechanisms. Such funding supports activities, projects and programmes recognised as being part of the national response to climate change

This approach builds on a methodology adopted for a series of country studies implemented by the UN Development Programme (UNDP) in South-East Asia, which began the detailed analysis of climate finance delivery at the national and subnational levels (Bird et al., 2012).

There are already many methodologies and tools available to assess the effectiveness of public administration and public expenditure management in developing countries. There are both high-level summary indices (e.g. the World Bank Institute's World Governance Indicators) and very specific diagnostic tools (e.g. the Public Expenditure and Financial Accountability (PEFA) framework). The approach adopted here involves developing a more intermediate level of analysis that is specific to climate change. This provides more detail than that found in high-level indices, which do not have a specific climate finance element, or in specific metrics such as PEFA. The intention is that this intermediate level of analysis will capture more contextual detail on the day-to-day operation of policies, institutions and public expenditure management practices relevant to climate change, thus making the analysis more focused for both country governments and the international community.

2.4 Applying the principles, criteria and indicators approach

The PCI framework comprises principles (fundamental laws or truths, expressing a core concept), criteria (operational standards by which to judge the principles) and indicators (information to measure or describe observed trends) (Prabhu et al., 1996). This approach is applied to each of the three elements of the national public administration system to draw together a composite picture of whether or not finance for climate change-related actions is being delivered effectively. The next three sections list the PCI that have been identified under each element.

2.4.1 Policy requirements for effective climate finance delivery

Four principles underpin the development and implementation of public policy and are relevant to the effective delivery of climate change finance:

1. ease of implementation (Nill and Kemp, 2009; van den Bergh, 2013)
2. legitimacy (Bierman and Gupta, 2011)
3. coherence (Bird et al., 2012)
4. transparency (Bird, 2010)

Climate change policies shall be designed for ease of implementation

Any assessment of climate change policies needs to address the issue of implementation. Ultimately, the effectiveness of any policy is measured by its outcomes, as 'no matter how effective a policy may be at achieving certain goals in principle, it is useless if it cannot be implemented' (Thomas and Grindle, 1990: 1178). To allow for implementation, a policy should be costed, have explicit, time-bound objectives and be supported by relevant instruments, including economic and regulatory measures as well as administrative norms. In short, if climate change policy is going to direct effective spending, it needs to come with a set of enabling instruments and regulations.

All stakeholders shall recognise the legitimacy of climate change policies

Climate change policies may require new governance arrangements incorporating a wide set of stakeholders, as climate change entails interdisciplinary and cross-

sectoral involvement. In general terms, legitimacy refers to the procedural processes of decision-making as well as the related governance arrangements (Biermann and Gupta, 2011). The representation of different stakeholders, including those at greatest risk from climate change, helps bestow legitimacy on policy design (Burton et al., 2002). However, equal representation of different groups is unlikely, as the different actors have different relative influence. For instance, those directly affected by climate change at the local level often lack a powerful voice with which to influence the executive and policy-makers in national government. Yet policy development should be open to many to secure the legitimacy of the policy-making process.

Climate change policies shall be coherent with national development policies

If they are to be effective, climate change policies need to be coherent with other government policies related to national development (Nill and Kemp, 2009). The national climate change response is often characterised by several strategy and planning processes, and their integration into broader national development planning to ensure the coherence of resource allocation is a recognised challenge. Although this challenge is not limited to climate change, the interdisciplinary and cross-sectoral nature of climate change puts high demand on securing strong coordination and coherence (which in the process may have to overcome vested interests that are resistant to change).

Climate change policies shall promote transparency in climate finance delivery

Transparent funding decisions are required in order to be able to demonstrate effectiveness in climate finance delivery. Climate change policy should, therefore, include appropriate guidance that commits all the key actors along the climate change finance delivery chain to high standards of transparency. For example, transparency of policies and public spending plans may be secured, in part, through timely publications made available to the general public and in the official records of the national legislature.

Table 2.1 lists criteria that relate to each of the above principles, together with indicators of

compliance. These criteria and indicators are not intended to be comprehensive, but rather focus on areas where there is often already some debate and traction in national policy circles.

2.4.2 Institutional requirements for effective climate finance delivery

An institutional assessment helps determine the extent to which existing institutions enable or hinder climate change finance delivery, allowing for an understanding of their ability (or lack of ability) to achieve this objective. Three principles identified from the literature on institutional performance considered to be relevant to the effective delivery of climate change finance are:

1. institutional coordination mechanisms (Booth, 2010; Flynn, 2011)
2. capacity to change and innovate (Imperial, 1999; Peters et al., 2012)
3. ability to respond to local needs (Booth, 2010)

A national mechanism shall exist for coordination between institutions involved in climate finance delivery

Coordination implies the organisation of different participants to enable them to work together in a systematic way. A government-led process of service delivery is a coproduction that involves the participation of diverse types of institutions, including government and non-government, formal organisations and informal collaborations. This mix of actors requires coordination capacity and incentive structures (Booth, 2010), as well as reporting systems (Flynn, 2011) across diverse levels of government. Institutional coordination for effective climate change finance delivery is made more complex because governance of climate change is highly dispersed and fragmented. Responsibilities are shared among a multitude of actors operating across numerous scales (Newell, 2011). In many cases, the environment ministry holds the lead on climate change policy and is the national UNFCCC focal point, but decisions over climate-related public expenditures will usually involve the finance ministry (Miller, 2012).

The multiple external financial flow channels exacerbate the fragmentation of inter-ministerial

Table 2.1: Policy-related effectiveness PCI for climate finance delivery

Principle	Criteria	Indicators
Climate change policies shall be designed for ease of implementation	<ul style="list-style-type: none"> Policy objectives are clearly expressed. 	<ul style="list-style-type: none"> Targeted objectives are listed in the policy documentation. Timelines to achieve the set policy objectives are articulated in the relevant policy documents. The method for mobilising financial resources to implement the policy is contained within the policy statement.
	<ul style="list-style-type: none"> Means for implementation accompany policy statements. 	<ul style="list-style-type: none"> Subsidiary instruments to achieve specific policy objectives are identifiable within the policy documents. Timelines are in place to establish appropriate subsidiary instruments. Appropriate subsidiary instruments are legally gazetted.
All stakeholders shall recognise the legitimacy of climate change policies	<ul style="list-style-type: none"> Policy-making processes represent key stakeholders' interests. 	<ul style="list-style-type: none"> Policy-making platforms exist, where key policy decisions are made (e.g. policy working groups, expert working groups, sector working groups). Existing policy platforms provide for representation of key stakeholders from both government and civil society. Existing policy platforms provide opportunities for stakeholders to contribute to the policy-making process.
	<ul style="list-style-type: none"> Policy-making is evidence-based. 	<ul style="list-style-type: none"> The policy formulation process is preceded by, and benefits from, background analytical work. Policy think-tanks and research institutions provide evidence-based analysis to support the policy process.
Climate change policies shall be coherent with national development policies	<ul style="list-style-type: none"> Policy statements on climate change acknowledge national development goals. 	<ul style="list-style-type: none"> Reference is made to national development goals in the national climate change policy.
	<ul style="list-style-type: none"> Climate change actions are consistent with strategies and planning processes for national development. 	<ul style="list-style-type: none"> Climate change strategy documents and national development plans refer to each other.
Climate change policies shall promote transparency in climate finance delivery	<ul style="list-style-type: none"> Climate change policies provide for the establishment and operationalisation of mechanisms and modalities to promote transparency. 	<ul style="list-style-type: none"> Mechanisms and modalities exist to promote transparency of climate finance

Source: Bird et al. (2013).

decision-making (Thornton, 2011). A robust coordination mechanism between national leads on climate change policy and expenditure is therefore needed to ensure that, when national climate policies are put in place, priorities are then translated into

expenditure decisions in the budgetary process, as well as for extra-budgetary funds. For instance, when parts of external finance are channelled through such channels, an extended mechanism would involve liaison and, to some extent, coordination with extra-

budgetary fund administrators, multiple donors and civil society representatives.

Institutions shall demonstrate a strong ability to change and innovate

An institutional ability to cope with high levels of complexity and uncertainty in the face of new challenges is crucial in terms of capacity for change. Considering that climate change policy – and hence its funding – is relatively new, and that the vulnerability context changes constantly because of interactions between social and environmental conditions, ability to demonstrate institutional innovation is an important characteristic to secure the effective delivery of climate change finance. Mapping how the current institutional infrastructure responds to such challenges can indicate the level of change and innovation capacity of the institutions concerned.

Climate change institutions shall respond to local needs

‘Meeting the needs of the most vulnerable to climate change will require a strong local finance delivery mechanism’ (Bird, 2011: v). Such a mechanism depends on the capacity of institutions that have a local (i.e. subnational) presence or anchorage. Institutions that enable local collective action comply with a double sense of local anchorage: ‘the rules they incorporate are problem-solving in the local context and they make use of institutional elements inherited from the past’ (Booth, 2010: 34). Therefore, this principle can be expected to exert a strong influence on the effectiveness of climate change finance delivery.

The effectiveness of climate change finance will depend on how far these three institutional principles are respected and followed in practice. Table 2.2 lists the principles, with the criteria and indicators, that support an assessment of progress towards the attainment of each principle.

2.4.3 Public expenditure requirements for effective climate finance delivery

High-level principles for effective PFM are set out in numerous handbooks provided by various donor agencies (e.g. Allen and Tommasi, 2001; Potter and Diamond, 1999; Schiavo-Campo and Tommasi,

1999; Shah, 2007). In addition, the PEFA methodology represents the most developed and widely used diagnostic tool to assess country performance in public expenditure management. However, the approach developed for the country studies does not rely on the PEFA methodology, as it aims to assess a more intermediate level of government effectiveness that allows for greater understanding of the context in which climate financing is being handled. It does, however, follow the stages of the national PFM cycle.

Climate change expenditure shall be planned and budgeted for in the annual budget formulation process

Good practice budget preparation for climate change expenditure would involve the scrutiny and challenging of spending proposals, based on the results of monitoring and evaluation of performance in previous years. It would also involve consultations with external stakeholders, culminating in detailed information on the proposed budget and an understandable public explanation of the budget’s intentions.

An effective planning and budgeting process would also require all relevant bodies to submit planned expenditures to the finance ministry to highlight their climate-related plans. A political process would then determine the relative priority of these proposals and generate agreement among agencies that they will abide by the results of the process. Monitoring and evaluation of climate change-related expenditure from previous years would inform this prioritisation process, so as to give decision-makers an understanding of the progress being made against overall climate change policy goals. However, many finance ministries continue to approach budgeting on a case-by-case consideration of increases or decreases to a specific ministry’s budget, rather than on the basis of a cross-government programme of expenditure, such as the response to climate change.

Climate change expenditure shall be executed through government systems using the budget

Spending agencies should follow a standard process of committing expenditure, verifying the delivery of

Table 2.2: Institutional effectiveness PCI for climate finance delivery

Principle	Criteria	Indicators
A national mechanism shall exist for coordination between institutions involved in climate finance delivery	<ul style="list-style-type: none"> Leadership of the national response to climate change in terms of climate finance delivery is established within the government administration. 	<ul style="list-style-type: none"> The national lead institution has the mandate to determine or advise on what constitutes climate finance. The national lead institution provides specific inputs and guidance into the budget process and the budget on what constitutes climate finance.
	<ul style="list-style-type: none"> Key stakeholders know the roles actors play in the delivery of climate finance. 	<ul style="list-style-type: none"> All mandated national institutions report their expenditures on climate change activities each financial year.
	<ul style="list-style-type: none"> Other actors within the policy making process outside government (e.g. the legislature, party-governing committees) review and challenge policy. 	<ul style="list-style-type: none"> Relevant actors provide opportunities (presentation of memoranda, petitions, convening of public hearings) and encourage non-state actors working on climate change to present their voices.
	<ul style="list-style-type: none"> Institutional arrangements are in place for inter-agency collaboration. 	<ul style="list-style-type: none"> Mechanisms for inter-agency collaboration between climate change institutions and other national institutions can be identified. Reports on inter-agency collaboration and climate-financed activities are available to the public.
Institutions shall demonstrate a strong ability to change and innovate	<ul style="list-style-type: none"> The national response to climate change facilitates the adoption of change and promotes innovation. 	<ul style="list-style-type: none"> New institutional arrangements are established as demand occurs through appropriate policy, administrative or political action (e.g. through the production of national strategies and action plans).
Climate change institutions shall respond to local needs	<ul style="list-style-type: none"> Institutional arrangements respond and adapt to local needs. 	<ul style="list-style-type: none"> Funding is directed to local climate change institutions within the national budgetary system.

Source: Bird et al. (2013).

goods and services, authorising and making payment and then recording the transaction appropriately (Potter and Diamond, 1999). The finance ministry, as the agency with overall responsibility for overseeing delivery of the approved budget, should have information systems that are robust enough to allow it to monitor and track expenditure on a regular basis. Ministries themselves should actively monitor and manage their own expenditure to anticipate expenditure shocks and to ensure their expenditure reflects the climate change-related activities they have outlined in their budget proposals.

However, this type of effective cash management is a challenge in many countries, as domestic revenue and international funding may not be spread equally across the budget period. This presents knock-on challenges for spending agencies that may undermine implementation plans, resulting from the lack of availability of sufficient funds to pay for the necessary goods and services. Such challenges are often particularly acute for subnational governments (e.g. district and provincial authorities). Such authorities may not be fully connected to any national integrated financial management system, while also facing communication difficulties because

of the geographical distances between their location and the national capital.

Climate change expenditure shall be subject to proper classification, accounting and financial reporting

Climate change-related expenditure should follow the standard pattern of financial reporting and accounting, with PFM systems able to capture and record expenditure as part of a comprehensive system of classification, financial reporting and accounting. Accounting for expenditure should be done on the same basis as the original budget, allowing for a rapid and straightforward comparison of expenditure against original plans. In practice, this means classifying individual expenditures against the same coding system as used in budget planning. However, analyses of spending on climate change-related activities is possible only if a system to identify climate change spending is in place and budgets for climate adaptation and mitigation activities contain adequate funding to monitor and evaluate such expenditure.

Climate change-related expenditure shall be subject to external oversight and scrutiny

Climate-related expenditures should be part of the whole-of-government approach to external audit and scrutiny. External audit and scrutiny aims to review the degree to which the budget has been executed correctly, in accordance with the law and administrative regulations. Typically, this is the role of a publicly appointed auditor-general or equivalent. This entity is responsible for reviewing the government's published accounts, ensuring the accuracy of transactions and the correct reconciliation of accounts and assessing the evidence that correct procedure has been followed.

Expenditure for climate change strategies should be reviewed and audited in the same way as any other government expenditure. Where climate change related expenditures are identified, it should be possible for the supreme audit institution to focus on performance in this area of the budget. However, given the current absence of systems to track and monitor climate change-related expenditure, specific climate analysis is unlikely. Instead, wider audits will capture climate

spending that is on budget. For off-budget funds, specific audit requirements are likely to be in place that the funds' governing bodies sign off on.

It is also normal for the legislature to be involved in budget scrutiny and oversight through its review of budget implementation after the end of the year. It might be that the entire legislature is involved in the review of the previous year's budget execution and the auditor-general's report, through debates on the audit findings, or this work may be delegated to specific finance or public expenditure committees that review audit reports in detail and challenge the government administration to respond to specific findings. Climate change-related spending may well be included in the remit of such committees alongside other types of spending. This is yet another area where the challenges of separately identifying and monitoring climate change-related spending have an impact on the understanding of national climate change adaptation and mitigation.

Table 2.3 details the criteria and indicators considered relevant to assessing present day practice against these four principles of public expenditure management.

2.5 Conclusions

The framework described in this chapter is an analytical tool that can assist with assessment of the effectiveness of climate change finance delivery. It approaches the effectiveness question through a focus on institutional and governance processes and, by so doing, emphasises the early stages of the input to impact continuum. It is considered an appropriate measure reflecting the early stage in most countries response to climate change. However, a sole focus on inputs is also acknowledged to be an insufficient measure of effectiveness, as inputs are often a poor proxy for the outcomes and impact of publicly funded actions. This constraint is recognised: further study will be required to develop effectiveness measures based on the substantive outcomes associated with national climate change strategies. In the meantime, this framework allows us to obtain some insights into the strengths and weaknesses of present day systems in support of the national response to climate change.

Table 2.3: Public expenditure effectiveness PCI for climate finance delivery

Principle	Criteria	Indicators
Climate change expenditure shall be planned and budgeted for in the annual budget formulation process	<ul style="list-style-type: none"> Budget preparation captures the actors involved in climate change expenditures. 	<ul style="list-style-type: none"> Adherence by all climate change actors to a budget calendar for the formulation of the national budget. Representation of climate change concerns in the discussion and scrutiny of spending proposals, resulting in the development of the national budget's priorities. <i>Ex-ante</i> scrutiny, challenge and approval of the national budget, and its climate change provisions, by a legitimate authority (e.g. the national legislature).
	<ul style="list-style-type: none"> Budget preparation identifies key climate change expenditure. 	<ul style="list-style-type: none"> Budget classification structures allow for climate change expenditure to be identified across ministries, departments and agencies. Budget information that includes climate change expenditure is publicly available.
	<ul style="list-style-type: none"> Budget preparation captures climate change expenditure in a medium-term policy framework. 	<ul style="list-style-type: none"> The government has a medium-term policy and expenditure framework for key areas of spending, including climate change.
	<ul style="list-style-type: none"> Budget preparation takes into account the findings of the audit, evaluation and monitoring of government programmes. 	<ul style="list-style-type: none"> The key recommendations of any audit, monitoring and evaluation exercises for climate change programmes are considered.
Climate change expenditure shall be executed through government systems during the budget year	<ul style="list-style-type: none"> The finance ministry manages cash flow to ensure resources are available to spending agencies in line with the approved budget. 	<ul style="list-style-type: none"> Cash is available to agencies to fulfil their climate change commitments in line with the approved budget.
	<ul style="list-style-type: none"> In-year adjustments to the budget are done only when unavoidable and aim to maintain delivery on the government's budget priorities. 	<ul style="list-style-type: none"> Spending agencies maintain oversight of their climate change operations to manage any unexpected financial shocks.
	<ul style="list-style-type: none"> Climate funds are spent in line with the planned budget. 	<ul style="list-style-type: none"> Expenditure tracking reports against the budget for climate funds are available to fund management committees to meet in-year reporting requirements.
Climate change-related expenditure shall be subject to reporting and accounting	<ul style="list-style-type: none"> Government financial statements (reports) exist for all expenditure, including climate change expenditure. 	<ul style="list-style-type: none"> Government financial statements that cover climate change and all other expenditure are published in a timely manner (in compliance with national timetables) after the end of the budget period. Financial reports can be related back to the original budget format, allowing assessment of climate change expenditure compared with the approved budget.

Table 2.3: Public expenditure effectiveness PCI for climate finance delivery *(continued...)*

Principle	Criteria	Indicators
<p>Climate change-related expenditure shall be subject to external oversight and scrutiny</p>	<ul style="list-style-type: none"> • Government financial statements are independently audited. <hr/> <ul style="list-style-type: none"> • The legislature reviews government accounts and audit findings and provides challenge and scrutiny. 	<ul style="list-style-type: none"> • The supreme audit institution undertakes a timely audit – to international public sector audit (INTOSAI) standards – of government financial statements, including those of climate change-related elements. • Findings from these financial audits, compliance audits and performance audits are made public. • As a result of these audits, recommendations are made to government on ways to improve their handling of public finances, including climate change expenditures where appropriate. <hr/> <ul style="list-style-type: none"> • Audit findings, including those relevant to climate change expenditure, are transmitted to the legislature and/or its relevant committees. • The legislature and/or its relevant committees are able to understand and use the financial information presented. • The legislature and relevant committees engage in a scrutiny and challenge function regarding government financial performance, including performance against climate change objectives.

Source: Bird et al. (2013).

Chapter 3: Methodological issues associated with identifying public expenditure on climate change actions

Neil Bird and Deograsias Mushi

3.1 Introduction

As the previous chapter described, the methodology developed for the country studies focused on an assessment of public expenditures recorded in the national budget, together with the policy and institutional drivers of that expenditure. The methodology built on the Overseas Development Institute's (ODI's) experience of climate public expenditure and institutional reviews (CPEIRs) carried out in South and South-East Asia in partnership with UNDP¹ (e.g. Government of Nepal, 2011). A major challenge for this type of analysis is that a manual examination of budget spending is necessary for the identification and summary of climate-change relevant expenditures. This task is a challenging and time-consuming one, which explains, in part, why this is a poorly developed area of public expenditure analysis.

The following sections describe the steps the research teams took to identify relevant expenditures within the national budgets in each of the four countries.

3.2 First step: identifying relevant policy areas and government ministries

The teams used a prioritised approach to identifying climate change-relevant expenditure, recognising that it was not possible to review each and every expenditure item within a national budget (which

can number in the tens of thousands of classification codes). The approach began by identifying those policy areas and administrative units most likely to be relevant to climate change, and then drilled down into the details of sector financing in order to identify relevant expenditure. As a result, there remains a risk that the analysis missed climate change-relevant activities undertaken in sectors considered not relevant to climate change (e.g. in defence). However, this risk was considered small and unlikely to have affected the overall conclusions reached.

In each country, the relevant policy areas were ascertained from national policy documentation. In recent years, these countries have carried out a range of studies to examine how climate change may affect the national economy. These provided an important starting point for the analysis (e.g. GCAP, 2011; Hepworth and Goulden, 2008; MESTI, 2013; World Bank, 2010). Although the exact nature of climate change remains uncertain, likely impacts across a number of policy areas were identified and are listed in Table 3.1.

Following the identification of relevant policy areas, the analysis then related the findings to the ministries mostly likely to be active in these areas. A feature of most national budget systems across the world is that public expenditure is managed on the basis of an individual ministry or other government institution, rather than by sector; in other words,

¹ <http://www.aideffectiveness.org/climatechange/finance>

appropriations and budgets are structured administratively, rather than by policy, function or programme. As a result, identification of spending lines had to be carried out on an institution-by-institution basis. The relevant ministries were

cross-checked through reference to national documentation, including climate change implementation strategies, which had identified priority climate change programmes and the ministries expected to deliver them.

Table 3.1: Anticipated impacts of climate change and possible response actions

Policy area	Examples of climate change impact	Possible response actions
Agriculture	Decline in crop yields, raised livestock mortality and subsequent food insecurity	Improving efficiency of crop and livestock production practices; soil and water conservation; introducing sustainable land management technologies
Forestry	Reduced yields and increased sensitivity to fire and disease in both exotic and indigenous tree species	Improved forest conservation and management; establishing forests on degraded lands to build carbon stocks
Energy	Changes in demand levels; hydro-electricity supply weakened by changing river flows/lake levels	Expanding electricity generation from renewable sources of energy; introducing more efficient cooking stoves
Transport	Physical damage to existing infrastructure; higher maintenance costs	Introducing modern and energy-efficient technologies, including light rail and bus rapid transit systems in urban areas
Water and sanitation	Changes in water quantity and quality; greater water demand	Improved water usage (e.g. water basin management and small irrigation schemes)
Health	Mortality and severe injury caused by extreme weather events; increase in climate-related disease incidence	Strengthened disaster risk management and early warning systems
Housing and settlements	Physical damage to existing settlements caused by increasing frequency of catastrophic weather events	Introducing modern and energy-efficient technologies
Industry	Decline in domestic production, worsening terms of trade	Introducing modern and energy-efficient technologies

Source: Authors' compilation.

3.3 Second step: identifying climate relevant programmes and projects in the development budget

Once the relevant ministries had been identified, the analysis moved to a detailed review of the individual programmes and projects within each ministry's

annual development budget. Governments' budget systems consist of several layers of information. Expenditure items are coded to express a number of categories that help identify the nature of individual expenditures, including categorisation of expenditures by department, programme and

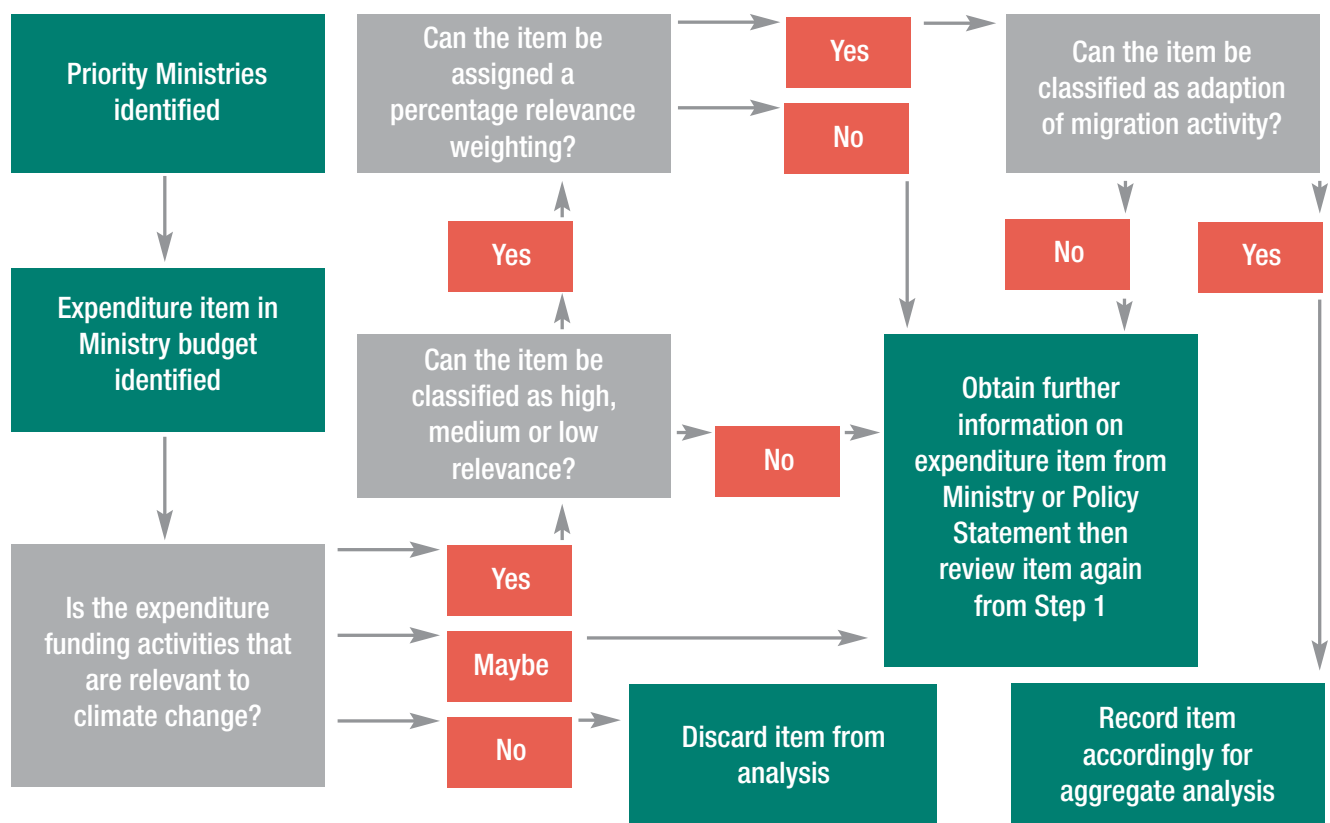
project. The second major task was therefore to compile a list of all the programmes and projects for each of the selected ministries for assessment of their relevance to climate change.

The description of programmes in the budget documentation was usually very brief, for example ‘administration’ or ‘rural water and sanitation’. It was relatively straightforward to review and exclude items from the expenditure analysis on the basis that they were not related to climate change, for example a ‘construction of State House’ project. Equally, certain programmes and projects were clearly relevant to climate change adaptation or mitigation (e.g. ‘hydropower construction’). Others were less clear (e.g. ‘capacity-building in the Ministry of Agriculture’). Where expenditure items were less clear in their relationship to climate change, the team always undertook further investigation. The first reference point was any documentation published alongside the budget that contained more

information on the activities by the ministry concerned, such as ministerial policy statements that included details on the programmes and projects being implemented. Using this information, it was sometimes possible to decide whether a particular expenditure item was climate change-relevant or not. Where it was not, contact was made with well-informed officials in the ministry concerned before making a final decision on the selection of relevant actions.

Once the relevant spending item was identified, three additional stages were required to classify the relevant public expenditure: the team 1) estimated the level of relevance of the identified expenditure to climate change; 2) assigned to each item of expenditure a percentage weight that reflected its relevance; and 3) determined the focus of the expenditure on either adaptation or mitigation action. Figure 3.1 shows a summary stylised view of this process.

Figure 3.1: Diagrammatic representation of approach to the classification of expenditure items



Source: Tumushabe et al. (2013).

3.4 Third step: allocating high-, medium- and low-relevance to identified expenditures

Once a relevant expenditure item was identified in a ministry, it was then allocated into one of three broad categories. This classification tried to capture how explicit and direct the response to climate change was as an intention of the planned expenditure. It also took into account that most public expenditure has more than one objective, and therefore aimed to capture spending where the response to climate change was one of several intended outcomes.

Initially, the teams identified three categories: high-, medium- and low-relevance, using the following definitions as a guide:

- high-relevance: projects that had a clear focus on climate change adaptation or mitigation, where the stated primary objective of the expenditure was to deliver specific outcomes that were climate change-related
- medium-relevance: those projects and programmes that had a stated secondary objective relating to climate change adaptation and/or mitigation outcomes, but where the primary objective of the expenditure lay elsewhere
- low-relevance: spending that supported activities that displayed attributes where indirect adaptation and mitigation benefits might be expected (e.g. social protection programmes). This third category attempted to identify actions where, although there was no intention to respond to climate change, the outcome of the expenditure led to greater adaptation or mitigation capacity. This was the most challenging category to identify with confidence; much depended on the knowledge of the research team and the understanding of climate change impacts by government officials

The study teams in Ethiopia, Tanzania and Uganda applied these categories of relevant spending but in Ghana the team identified only high- and medium-relevance actions. In this last country study, the definition of high-relevance remained the same but medium-relevance expenditures were identified

as those where the description of the planned action in the budget documentation could be readily linked to actions listed under each programme and focus area of the NCCP Master Plan. By explicitly tying the relevance of the expenditure to a well-developed national strategy, the relevance of the spending could be more readily explained to sector planners and their budget officers.

Table 3.2 sets out the definitions the country studies used to allocate expenditure lines into high-, medium- or low-relevance categories.

3.5 Fourth step: determining the percentage weights to identified expenditures

Following the logic of the relevance approach, if only part of the intended impact of a programme was relevant to climate change adaptation and/or mitigation, then we should count only a commensurate part of the expenditure. A percentage weight was therefore applied to each expenditure item. Table 3.3 indicates the range of percentages applied for each level of relevance. For the first three country studies, the percentage to be applied to any one expenditure was then made using 10% intervals within each relevance class, reflecting the assumed level of precision possible with this type of analysis. This percentage weighting was based on information gathered from official documents, the knowledge of the study team and individual follow-up with relevant officials in the ministries concerned. For the Ghana study a simpler approach was adopted, with all high-relevance projects being assigned 100% of funding and all medium-relevance projects 50%. The latter weighting was decided on to reflect the inherent imprecision of this approach, associated with the limited budget information available to the study team. This difference in methodology should be recognised as limiting the scope for cross-country comparisons.

This element of the classification is subjective. There is no objectively 'correct' percentage of spending to attribute to climate change expenditure, so this approach should be viewed as a 'best estimate'. Different researchers might apply different weights. However, using an approach that first

Table 3.2: Examples of high-, medium- and low-relevance expenditures

Relevance	Definition	Examples of projects and programmes
High	Clear primary objective of delivering specific outcomes that improve climate resilience and adaptation or contribute to mitigation	<ul style="list-style-type: none"> • Energy mitigation (e.g. renewables, energy efficiency) • The additional costs of changing the design of a programme to improve climate resilience (e.g. extra costs of climate proofing infrastructure, beyond routine maintenance or rehabilitation) • Health care for climate-sensitive diseases • Building institutional capacity to plan and manage climate change, including early warning and monitoring • Raising awareness about climate change • Anything meeting the criteria of climate change funds (e.g. GEF, GCF, PPCR)
Medium	Either 1) secondary objectives related to building climate resilience and adaptation or contributing to mitigation or 2) mixed programmes with a range of activities that are not easily separated but include at least some that promote climate resilience or mitigation	<ul style="list-style-type: none"> • Forestry and agroforestry motivated primarily by economic or conservation objectives, because this will have some mitigation effect • Water storage, water efficiency and irrigation motivated primarily by improved livelihoods because this will also provide protection against increasing drought • Biodiversity and conservation, unless explicitly aimed at increasing resilience of ecosystems to climate change or increasing carbon sequestration • Ecotourism, because it encourages communities to put a value on ecosystems and raises awareness of the impact of climate change
Low	Activities that display attributes where indirect adaptation and mitigation benefits may arise	<ul style="list-style-type: none"> • Water quality, unless the improvements in water quality aim to reduce problems from extreme rainfall events, in which case the relevance would be high • General planning capacity, either at national or local level, unless it is explicitly linked to climate change, in which case it would be high • Livelihood and social protection programmes, motivated by poverty reduction, but building household reserves and assets and reducing vulnerability. This will include programmes to promote economic growth, including vocational training, financial services and the maintenance and improvement of economic infrastructure, such as roads and railways

Source: Authors' compilation.

relates how climate change features as an objective of the expenditure limits the discretion of those making the judgement and increases the likelihood that a different study team will come to broadly similar conclusions.

3.6 Fifth step: identifying climate change-relevant expenditure within recurrent budgets

Public expenditure analysis should ideally cover both recurrent and development expenditure, as in many countries the government budget is split between these two categories. In theory, recurrent expenditure meets the day-to-day costs of government services and the development budget provides funding for capital and new investments.

Table 3.3: Weighting of expenditure for different levels of relevance, Ethiopia, Ghana, Tanzania and Uganda (%)

Relevance category	Percentage weighting for expenditure			
	Uganda	Tanzania	Ethiopia	Ghana
High	>75%	>75%	>75%	100%
Medium	26–74%	26–74%	26–74%	50%
Low	10–25%	10–25%	10–25%	–

Source: Authors' compilation.

However, this distinction is not always adhered to, which means in practice it can lack meaning. Many countries that receive official development assistance (ODA) classify all donor-financed projects as development spending irrespective of whether they are funding recurrent or capital expenditure.

In both Ghana and Uganda, the budget classification allowed for the identification of the recurrent component of each relevant development programme, so recurrent expenditure was classified in the same way as development expenditure. In Ethiopia, once the team had identified the climate change-relevant programmes within the development budget, they then reviewed the recurrent budget of each sub-agency where a development project had been identified and applied a percentage to the recurrent budget using weights of 50%, 30% and 10% for the high-, medium- and low-relevance expenditure lines, on the basis that not all recurrent resources would be in support of the identified relevant development projects. In Tanzania, the study team decided to apportion the same percentage weight to each ministry's recurrent budget as that attributed to the development budget for that ministry. These slightly different approaches reflect the uncertainty in this type of analysis associated with partitioning the recurrent side of the budget that meets the day-to-day running costs of the government administration.

3.7 Treatment of international grants in the national budget

In some countries, government financial regulations require the inclusion of all donor funds in the budget and in reported expenditures. In practice, there are challenges to achieving this. The ability to capture international funds (either ex-ante in budget appropriation or ex-post in reporting) varies according to the nature of the aid received and the channel of funding used. There are three channels through which external donor grants are disbursed:

1. Funds follow normal government financial channels; these are fully captured in the budget.
2. Donors disburse funds to sector ministries rather than the central finance agencies of the government, but these are also captured in the budget since the sector ministries report to the finance ministry.
3. Donor funds are disbursed directly to projects and programmes operating outside government structures. These are very difficult to capture.

The analysis of national budget data considers spending by donors through the first and second channels only. Expenditure passing through the third channel is not captured with the same level of consistency and this raises the danger of double-counting of expenditures, making the monitoring of such flows quite problematic. This has resulted in inadequate capture of this third channel of funding in climate change public expenditure analyses to date (including in our four country studies).

However, with regard to the first and second channels, most budget systems allow for some identification of the source of expenditure, at least for the development budget. Within the coding of expenditure through the Chart of Accounts, it is often possible to identify the funder of the expenditure line. Expenditure items financed from government revenues can be considered domestically funded,² whereas items listed as ‘donor’ will be externally financed (although budget systems rarely identify the specific donor providing funding within the budget system). An analysis of the source of funding in this way was possible in Ethiopia, Tanzania and Uganda but not in Ghana, owing to lack of data.

3.8 Conclusions

Comprehensive budget data covering both budgeted expenditure and final outturn are rarely available in one single volume or dataset and therefore have to be constructed for any public expenditure review. Some datasets – mostly budgeted expenditure – are in the public domain; however, access to data on actual outturns often requires direct engagement with the finance ministry and accountant-general or similar.

Further challenges to public expenditure reviews include that presentation of the data within budget systems’ various categorisations is not always consistent and directly comparable from year to year. In addition, the administrative structure of government changes, meaning some ministries are split or merged into other institutions. This complicates the task of trying to track expenditure on the same activities through different ministerial configurations over any time period. As a result, there is rarely a clear and fully comprehensive ‘line of sight’ of expenditure from budgets to outturns for all programmes on the same basis across a number of years. In some cases, therefore, it was necessary to work manually, putting together information from a number of slightly different datasets in order to construct a picture of expenditure over the study period.

Regarding international climate funds, expenditure data tend to be less completely recorded and available. Whereas government expenditure passes through regular PFM systems and is therefore largely identifiable through the government budget, international climate fund spending is far more difficult to track. For example, central government will be unlikely to record spending by an international NGO acting as project implementer on climate change-related disaster preparedness in a particular district. Yet, if such projects are taking place within the country, they can form an important part of total national expenditure on climate change-relevant activities. Further analysis of public funding on climate change actions beyond a focus on the national budget is thus required.

There can also be substantial domestic extra-budgetary funds in operation. Such funds may not be included in the budget documentation, or in the monthly or quarterly financial reports of the national government. Off-budget funds may include very large capital investments, such as hydropower, geothermal, wind power and railway projects, which may have a strong climate change-relevant dimension. Further analysis is then also required to determine the expenditures going through such extra-budgetary arrangements.

Many countries operate a multi-level structure of government administration and spending. Analysis of climate change-relevant public expenditure to-date has focused on national spending. It has not examined in a systematic way the financial transfers made to subnational governments, or expenditures that such subnational governments make using their own locally generated revenue. Further analysis of subnational government and off-budget financial information needs to be considered in future in order to make it possible to assess the totality of the government’s public expenditure on climate change-relevant activities.

Hence, the type of expenditure analysis carried out in the four countries are constrained with regard to documenting the full extent of the financial

2 The complication to this analysis is general budget support, which is provided by donors but goes to fund general expenditure through the consolidated fund. General budget support revenues can be a sizeable aspect of overall government revenues. However, given that they are provided on the explicit understanding that they are not allocated or earmarked, but are intended to fund general government activities, they can be considered ‘own revenue’.

resources being directed at climate change actions in each country. This is clearly a drawback when it comes to policy and institutional analysis, as a significant, but unknown, level of resources lies outside the analysis. Accepting these limitations, there is still merit to focusing initially on the national budget system, as its linkages to the domestic policy setting and national institutions can be assumed to be strong.