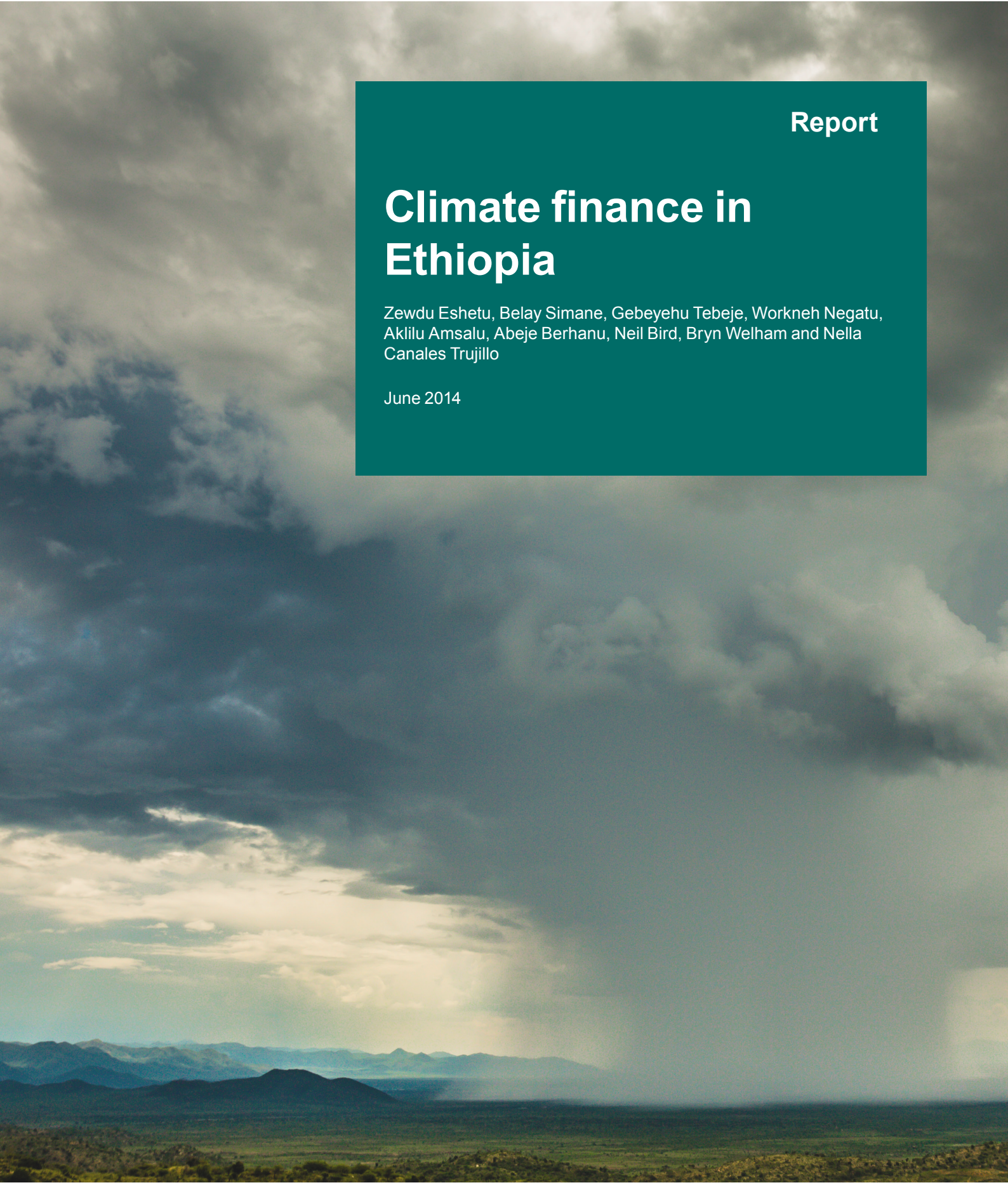

Report

Climate finance in Ethiopia

Zewdu Eshetu, Belay Simane, Gebeyehu Tebeje, Workneh Negatu, Aklilu Amsalu, Abeje Berhanu, Neil Bird, Bryn Welham and Nella Canales Trujillo

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Climate Science Centre

Horn of Africa Regional Environment Centre and Network

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Key messages

This study indicates there are major challenges for Ethiopia to finance its response to climate change. The national Climate Resilient Green Economy strategy has called for annual spending of USD 7.5 billion to respond to climate change. With national budgetary resources for climate change-relevant actions estimated to be in the order of USD 440 million per year, and international sources adding several tens of USD million per year, there appears to be a major financing gap. Therefore, if the strategy is to be delivered, much more needs to be done to mobilise additional resources both domestically and externally.

Authors: Zewdu Eshetu, Belay Simane, Gebeyehu Tebeje, Workneh Negatu, Aklilu Amsalu, Abeje Berhanu, Neil Bird, Bryn Welham and Nella Canales Trujillo

2014

Overseas Development Institute, London and the Climate Science Centre, Addis Ababa University, Addis Ababa.

Promoting Effective Climate Finance: ODI is building an evidence base on climate finance delivery and management through a number of country case-studies. This report presents the findings of the country study in Ethiopia.

How climate finance is accessed, managed and then spent in ways that effectively reduce vulnerability, promote development and gender equity, and reduce greenhouse gases represents a major challenge for national governments as well as the international community. The tracking of this finance, at both the international and national level, faces the problem that climate-related actions are difficult to identify with precision, and this lack of clarity leads to uncertainty over estimates of spending.

These national studies explore the concept of 'climate finance' and propose pragmatic ways forward that will strengthen the policy debate. All publications of this series are available at:

http://www.odi.org.uk/projects/2537-climate-finance-climate-change-fast-start-finance

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Abbreviations

CDM	Clean Development Mechanism
COP	Conference of the Parties (to the UNFCCC)
CRGE	Climate Resilient Green Economy
EIAR	Ethiopian Institute of Agricultural Research
EPA	Environmental Protection Authority
ERA	Ethiopian Roads Authority
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GTP	Growth and Transformation Plan
MDAs	Ministries, Departments and Agencies
MEF	Ministry of Environment and Forests
MoA	Ministry of Agriculture
MoFED	Ministry of Finance and Economic Development
MoH	Ministry of Health
MoI	Ministry of Industry
MoT	Ministry of Transport
MoUDHC	Ministry of Urban Development, Housing and Construction
MoWIE	Ministry of Water, Irrigation and Energy
MRV	Monitoring, Reporting and Verification (of GHG emissions)
MTEF	Medium Term Expenditure Framework
NAPA	National Adaptation Programme of Action
NDP	National Disaster Prevention and Preparedness Fund Office
NGO	Non Government Organisation
NMA	National Meteorology Agency
ODI	Overseas Development Institute
ODA	Official Development Assistance

OFAG	Office of the Auditor General
PEFA	Public Expenditure and Financial Accountability Assessment
PFM	Public Finance Management
REDD	Reducing Emissions from Deforestation and Forest Degradation
UNFCCC	United Nations Framework Convention on Climate Change

Executive summary

This study indicates there are major challenges ahead for Ethiopia to finance its response to climate change. The national Climate Resilient Green Economy strategy has called for annual spending of USD 7.5 billion to respond to climate change. With national budgetary resources for climate change-relevant actions estimated to be in the order of USD 440 million per year, and international sources adding several tens of USD million per year, there appears to be a major financing gap. Therefore, if the strategy is to be delivered, much more needs to be done to mobilise additional resources both domestically and externally.

Climate finance in Ethiopia

There is overwhelming evidence that the global climate is changing and projections suggest that the rate of change will likely increase. Warming has occurred across much of Ethiopia and both the frequency and intensity of droughts have increased, inflicting severe damage to the livelihoods of millions of people. At the same time, increases in flooding have stressed social institutions and intensified the vulnerability of households.

The low level of economic development, combined with a heavy dependence on rain-fed agriculture and high population growth, make Ethiopia particularly vulnerable to the adverse impacts of climate change. Intense pressure on the country's soil, water and biodiversity resources add to the national challenge of responding to climate change. Climate change, therefore, has the potential to hold back economic progress, or reverse the gains made in Ethiopia's development and could exacerbate social and economic problems.

In this context, the present study sets out to identify climate change-relevant public expenditures within the Ethiopian federal budget system, and to carry out a preliminary assessment of whether such funding is being effectively deployed. Effectiveness is measured through a governance and institutional lens, by examining how national policy processes and the institutions responsible for delivering government's climate change strategy influence decisions over budget allocations.

This type of analysis has not been attempted before in Ethiopia. Adopting a methodology developed elsewhere by ODI, the present study demonstrates that it is possible to derive an indicative estimate of the level of public spending on climate change, at least for the component of public expenditure that passes through the federal budget. Whist necessarily imprecise due to major definitional ambiguities, this first quantification of relevant public spending is a powerful tool that can be used to inform the policy debate over resourcing the national response to climate change.

It is important to acknowledge that expenditure on climate change can come from a variety of sources. These include international climate funds, bilateral and multilateral donor funds, public funds, and private sector funds. This study focuses on public funding allocated within the federal budget, as such spending is most closely aligned with national policy setting and institutional arrangements. A four year period was reviewed, between 2008/2009 and 2011/12.

A first step to understanding how government is responding to climate change is to identify which Ministries are actively engaged on this issue. Twenty three Federal Agencies were identified based on

their policy engagement and spending over the four year period. However, the Government of Ethiopia Chart of Accounts does not contain a marker for 'climate change relevant' spending, so the study team had to identify these programmes and projects within each ministry manually. A total of 158 expenditure lines from the development budget were classified as climate change relevant (listed in annex 1).

The study team then developed a categorization of these expenditures based on the degree of their relevance to climate change. This categorization looks beyond spending where a response to climate change is the primary objective of the expenditure, to capture those actions where some level of impact on climate change-related outcomes can be ascertained. This approach allows a first, broad estimate to be made of climate change-relevant expenditures that pass through the national budget. The methodology also separates spending between the two main climate change response strategies of adaptation and mitigation.

Policy issues influencing government spending on climate change

It is recognised that Ethiopia is particularly vulnerable to the adverse impacts of climate change. This vulnerability has spurred much policy debate in recent years and Ethiopia is one of the few countries to have formally merged its aims of developing a green economy with building greater resilience to climate change under a single policy framework: the 2011 Climate Resilient Green Economy (CRGE) Strategy.

Four initiatives have been selected to fast-track the implementation of the green economy element of the CRGE strategy, in hydropower development, rural cooking technologies, the livestock value chain, and forestry development. These initiatives represent a rational policy prioritization as they offer the prospect of immediate economic growth, large carbon abatement potential, and are attractive to international climate finance funding sources. The adaptation (or climate resilience) part of the strategy now needs to be enhanced so as to secure the livelihoods of those most vulnerable to climate change. In that context, the fast tracking of the agricultural sector climate resilient strategy demonstrates effective sector prioritisation by Government.

The Institutional architecture supporting climate finance delivery

Following the 2009 climate change conference in Copenhagen the Environmental Protection Authority (EPA) acted as the national flagship institution on climate change. The EPA oversaw the development of the CRGE strategy that has shaped Ethiopia's approach to climate change as well as its relationship with global efforts to address climate change. A recent evolution of the institutional architecture is the re-designation of the EPA as the Ministry of Environment and Forests (MEF). This new ministry will have enhanced powers to play a leading role in matters relating to climate change, nationally as well as internationally. This shows the government's determination to consider climate change as one of the priority areas in dealing with the country's long-term development needs.

Ethiopia has established an innovative funding mechanism to support the implementation of the priorities set out in the CRGE strategy: the CRGE Facility. Designed as a single, national funding mechanism, this Facility is intended to make the administration of funds easier for the government to drive and manage international climate funds, donor funds and domestic funds in a coordinated manner. Because climate change is an economy-wide issue, the inter-ministerial collaboration between the Ministry of Finance and Economic Development (MoFED) and MEF in managing the CRGE

Facility is a key institutional arrangement that will underpin the effective implementation of the programmes set out in the CRGE strategy.

Implementing the CRGE strategy will require a major transformation of the institutional architecture of the government administration (both horizontally and vertically) and the scale of this transformation should not be under-estimated. Considerable public investment is now required to strengthen the capacity of the various government ministries and agencies charged with the responsibility for implementing climate change programmes at all levels of government.

Macroeconomic and Public Finance Management context for spending on climate change

The macroeconomic context looks broadly positive. Ethiopia has experienced steady growth in recent years, although this has been accompanied by high inflation. Nominal federal public expenditure has grown steadily, although in the context of rapid GDP growth and high inflation this has not led to a sustained increase in public spending as a share of GDP.

Budget credibility in aggregate is relatively strong, with execution rates of over 90 percent. Discretionary expenditure, which could be re-directed to climate-related objectives, has grown substantially faster than wages and interest payments, suggesting increasing room for climate change-related public investment.

Ethiopia's Public Finance Management system has shown improvement over the period 2007 to 2010, according to standardised assessments. However, whilst the budget process is well ordered and spending execution well managed, significant amounts of expenditure occur 'off budget', reducing the ability of the budget to direct all government spending and contributing to relatively weak oversight and accountability mechanisms. Little is known about 'off budget' funding for climate change actions, and these are not included in this study.

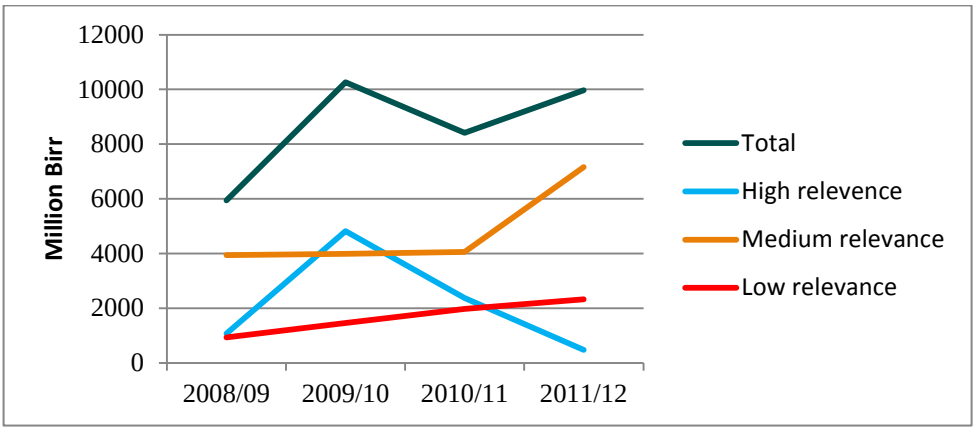
Public expenditure on climate change relevant actions, 2008/09 – 2011/12

Climate change-relevant spending was found to fluctuate quite considerably between 2008 and 2012, reflecting the start-up of major new development projects. The estimated average annual percentage share of such expenditure over the four years was 15 percent of total government expenditure, representing 1.8 percent of GDP.

Budget year	Total climate relevant expenditure (million Birr)	Climate change relevant expenditure (% GDP)
2008/09	5,945	1.5
2009/10	10,263	2.3
2010/11	8,409	1.7
2011/12	9,970	1.8

Climate change-relevant programmes are predominantly of medium relevance, where responding to climate change is a secondary objective of the expenditure (see figure below). This is consistent with the Growth and Transformation Plan (GTP) currently under implementation, which focuses investment in agriculture and infrastructure development such as renewable energy generation (e.g. hydro,

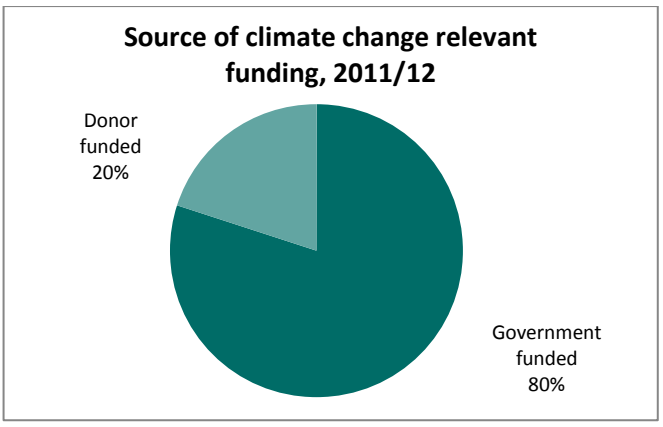
geothermal, wind, solar and biogas) to ensure food security and the promotion of industrial growth. A large number of medium relevance projects is consistent with a government spending prioritisation plan that focuses on economic development, whilst taking climate change into consideration.



Over the 4-year period studied, climate change-relevant expenditure was concentrated in relatively few Ministries and Agencies. The Ministry of Agriculture (MoA) and the Ministry of Water, Irrigation and Energy (MoWIE) hosted approximately three quarters of the total climate change relevant programmes in 2011/12, followed by the Ministry of Health, the (former) Environmental Protection Authority, and the Ministry of Urban Development and Housing Construction.

In contrast to overall government expenditure, the credibility of budgeted climate change-relevant expenditure appeared to be very weak, with execution rates between 25 and 35 percent. This suggests that for reasons that cannot be readily explained, climate change-relevant expenditure is concentrated in areas of spending with low budget credibility. Further research is required to explain this considerable divergence.

At least for its on-budget spending, the country appears to depend mostly upon its own resources for financing public activities designed to address climate change. For example, government funding identified by this study on climate change-relevant development expenditures in 2011/12 accounted for approximately 80 percent of the expenditure; donor support accounted for 20 percent.



Delivering climate finance at the local level

Financial resources at the local (woreda) level come mainly from federal transfers through the regions. Local government activity planning, and corresponding budgeting, is done to comply with GTP targets, following a framework plan determined at federal and regional levels. At the woreda level there is little flexibility, if any, to include additional activities beyond this framework.

There is no representation of the EPA, the federal office responsible for climate change, at the woreda level. Whereas this may change with the creation of the Ministry of Environment and Forests, establishment of any new structure at the local level will take time, particularly given the current human and financial resources available in the woredas.

The causes, impacts and possible responses to climate change are poorly understood amongst district government officials. However, there are a pool of activities that are relevant to the response to climate change, such as early warning systems for floods and diversification of income sources.

The effectiveness of public spending on climate change actions

The effectiveness of climate finance delivery depends on the linkages that exist between policy formulation, the institutional architecture of implementing agencies and the national budgetary system. These interactions are complex and are subject to a wide range of influences. Much progress has been made, over a relatively short period of time, on developing an overarching policy framework for climate change in Ethiopia: the CRGE strategy. This national strategy provides guidance for both the coordination and implementation challenges that confront the country's response to climate change. In many respects, the trajectory of the government's delivery programme has been set. Considerable investments in system strengthening are now needed to secure the successful implementation of the strategy.

STUDY RECOMMENDATIONS

Based on the analysis contained within this report, the study team offers the following outline recommendations to government in order to improve the effective delivery of climate finance in Ethiopia. The budgetary implications of these measures have not been assessed, although timely implementation would likely require support from development partners.

(i) Improving information on climate finance

Issues to be addressed	Recommendations
• Climate change-relevant expenditure is not yet recognised through the specific coding of expenditure within the national budget, making it very difficult to identify such expenditures. • The scale of climate change-relevant spending that is 'off-budget' is a major unknown at the present time (both donor funded projects and domestic sources).	• The government initiative to identify climate change spending within the federal budget should be supported. This could involve lesson learning from other countries that have made similar initiatives. • Raising awareness of sector ministry planners should be developed through tailored training opportunities, so that the likely climate change outcome of their development planning is better understood. • The reasons for the apparent low execution rates of budgeted climate change-relevant expenditure should be determined. • Off-budget climate change-relevant spending should be collated in a manner consistent to the federal budget to allow for a comprehensive assessment of all relevant funding.

(ii) Strengthening the policy setting for effective climate finance delivery

Issues to be addressed	Recommendations
• The CRGE sets out an ambitious national agenda. This task cannot be achieved by government alone, but will require the concerted efforts of all sectors of society. • The CRGE strategy is silent on how transparency can be promoted in climate finance delivery.	• Climate resilience policy development would benefit from creating additional space for non-government actors (including micro and small business entrepreneurs and community leaders) to participate in policy influencing platforms. • Parliamentary oversight of the budget process as it relates to climate change expenditures should be strengthened. Experience could be shared with parliamentary groups elsewhere in the East African region that have the remit to examine national spending on climate change actions. • The CRGE Facility should develop performance-based measures for the allocation of climate finance and these should be published.

(iii) Supporting the institutional response for effective climate finance delivery

Issues to be addressed	Recommendations
• Ministries have established CRGE Units to mainstream climate change in their respective sectors. However, the current capacity of these climate change units is restricted by limited knowledge on climate change issues, compounded by the meagre financial resources allocated to the Units.	• A major skills improvement programme on climate change, starting with the sector CRGE Units should be designed and implemented.

(iv) Climate change actions at the local government level

Issues to be addressed	Recommendations
• The linkages between Federal Ministries, the regional secretariats and woreda administrations need to be strengthened to ensure that climate change relevant expenditure is handled most effectively at the local level. • Coordination between differing donor initiatives of support at the local government level should be strengthened.	• Awareness raising and technical support relating to climate change (causes, impacts, and adaptation/mitigation options) should be provided to regional, zonal and woreda level staff. • Options to develop the budget system at the woreda level to capture programme/project spending should be a priority of any capacity strengthening programme.

1 Introduction

1.1 Significance of the study

Climate change is a new area of public policy that will have a significant impact on national economic development and directly on people's lives and livelihoods. However, at present there is limited understanding of what the cost of responding to climate change will be. An important starting point is to identify the financial resources that are currently being spent by government to fund climate change-related activities. This can provide an indication of how far the national response to climate change has evolved. Looking forward, the expected rapid growth of this expenditure can be expected to raise governance and management challenges for implementing agencies, which should be considered in the design and execution of national climate change programmes.

At the international level, the UNFCCC intends to reach an agreement that will avoid the most dangerous impacts of global warming. An important component of the international response is to provide new and additional finance to support actions carried out within the world's vulnerable countries. This is recognised in the goal set by the international community to raise USD 100 billion per year by 2020. International support is already forthcoming to assist countries such as Ethiopia prepare for and respond to climate change, but this source of funding raises questions of sustainability and how such support should be channelled into national systems. There is also the question of how to prioritise spending of finite financial resources. Budgetary allocations are never sufficient to meet all public spending needs, making a consideration of the strength of the systems that manage climate change-relevant expenditures important.

Measuring the effectiveness of public spending on climate change actions is fraught with difficulties, due to the definitional ambiguity of such actions (Burton, 2004), the complexity of public funding flows, and a lack of clarity on what effectiveness actually means. There are a number of further challenges to be faced: there is generally 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 a significant amount of international funding does not pass through the national budget.

So, at present the Ethiopian Government and the international community do not have sufficient ways of measuring public flows of climate finance, nor of promoting effective practice in the allocation of public funds to climate change-related actions. This study aims to address both of these constraints, by identifying relevant public expenditure and measuring the effectiveness of such spending against an explicit assessment framework.

1.2 Country context

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 (Robinson et al., 2013). Climate change model predictions for Ethiopia indicate not only a substantial rise in mean temperatures and an increase in rainfall variability but also a higher frequency of extreme events such as flooding and droughts.

The country is already experiencing more frequent droughts than in the past, causing water scarcity and degradation of range resources, which have a negative impact on food production. According to the National Meteorological Services Agency (2007), 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 (Chibber and Laajaj, 2008).

At least five major droughts have occurred since the early 1970s, along with many more localized droughts. Studies indicate that the frequency and magnitude of such droughts has increased, especially in the lowlands (Amsalu and Alabāčaw; Lautze et al. 2003). A recurrent cycle of droughts creates poverty traps for many households, constantly thwarting efforts to build up assets and increase income that would enable households to absorb future economic shocks. The limited economic, institutional and logistical capacity to adapt to climate change exacerbates the vulnerability of many people and communities.

Ethiopia will also likely face increased climate change linked disease burdens such as the spread of malaria, rift valley fever, meningitis and malnutrition. Such an alarming trend requires the development of appropriate strategies to reduce vulnerabilities and disaster risks though the provision of timely early warnings about and responses to such disasters.

Despite these challenges, Ethiopia has begun to take serious steps in terms of a national policy response and the design of strategies to deal with current as well as future impacts of climate change. The formulation of the Climate Resilient Green Economy (CRGE) Strategy in 2011 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. This low-carbon development strategy will require additional financial support from development partners and international organizations. Robinson et al. (2013) estimate that adaptation costs may be as high as USD 0.8–2.8 billion annually.

1.3 Objectives of the study

The aim of this study is to review public spending on activities that are related to climate change, and to assess the extent to which this expenditure responds to existing policy and institutional arrangements. This assessment is intended to show how climate change-relevant expenditure passes through the country's budgetary systems in response to national policy setting, allowing recommendations to be made for the further integration of such expenditure into budgetary allocation and budget execution processes.

Three interlinked elements of the public administration are examined to secure an understanding of the present status of public climate finance: i) the policy context; ii) the institutional architecture; and iii) public expenditures; with the last element representing the core focus of the study. The rationale for building our analysis around these three elements is as follows:

1. Examining government policy helps to build a picture of the overall environment for climate change 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. In doing so, it provides an important basis for understanding public spending on climate change actions.

3. The expenditure analysis quantifies climate change relevant expenditures in the national budget. This is done by selecting activities, projects and programmes that are recognised as being part of the national response to climate change and then extracting the budget estimates and actual expenditures from the official budget documentation.

This study will help to map out a financing framework for climate change in Ethiopia that promotes a whole-of-government approach to climate change actions through the use of country systems. One important use of such a framework is that it can help identify strategic funding gaps where there is need to increase funding from both domestic and international sources. It may also assist the development of a tracking system by identifying a baseline of climate change-relevant expenditures.

Overall, this study aims to assess both the demand for climate funds as well as the availability of finance from domestic and international sources. In time, the study methodology can serve as a tool to enable the Government of Ethiopia improve the prioritisation, efficiency and effectiveness of public resources directed at supporting climate change adaptation and mitigation.

1.4 The study's analytical framework

This study's analytical framework (annex 2) aims to measure the effectiveness of the national systems that underpin public climate finance delivery. As noted in the preceding section, three interlinked elements of the government administration are assessed: the policy environment that supports climate change expenditures, the institutional architecture that determines relevant roles and responsibilities over funding decisions, and the public financial system through which climate change-relevant expenditures are channelled.

Key principles of effective climate finance delivery for each of these three elements have been identified through a review of the literature (Bird et al., 2013). Criteria and indicators that reflect a progression towards compliance with these principles have also been formulated. Importantly, the indicators are not intended to reflect any 'ideal state', but provide a means by which current practice can be interpreted and highlight important areas for progress.

Four principles of policy development and implementation relevant to the effective delivery of climate change finance are: ease of implementation, legitimacy, coherence, and transparency. A further three principles relate to institutional performance: coordination, innovation, and local anchorage. In terms of public expenditure, the four selected principles relate to the execution of the budget cycle: planning, execution, reporting and external audit.

Collectively, these principles, criteria and indicators provide an explicit framework for the study by which the strength of the national climate finance delivery system is assessed, and from which its effectiveness can be considered.

1.5 Structure of the report

The study methodology, particularly as it relates to the identification and classification of public climate change-relevant expenditure recorded in the Federal Budget, is described in the next chapter. Chapters three and four address the policy and institutional issues that influence the level of public spending on climate change actions in Ethiopia. The country's recent macroeconomic performance and general measures of public expenditure management are then described, as a prelude to a detailed review of climate change-relevant public expenditure in chapter six. This Federal-level analysis is complemented

by an exploratory examination of relevant spending in two woredas[1] in chapter seven. Chapter eight concludes the study.

[1] Ethiopian district level government

2 Study methodology

Chapter summary

- The study's methodological approach combines a qualitative analysis of the policy context and institutional arrangements with a quantitative review of public spending on climate change actions.
- The study reviews expenditures in the Federal Budget over the 4-year period, 2008/9 – 2011/12 (2001 – 2004 Ethiopian fiscal year) to identify climate change-relevant public spending. This is the first time this has been attempted in Ethiopia and therefore represents an early exploration of the subject matter.
- The first step in estimating the level of such expenditure is to identify those parts of government where relevant spending might be taking place. The study team identified 23 Federal Agencies, based on national policy documentation.
- The Government of Ethiopia Chart of Accounts does not contain a marker for 'climate change relevant' spending, so the study team had to identify relevant programmes and projects manually. A total of 158 expenditure lines were identified over the four year period from within the federal development budget (listed in annex 1).
- The study team developed a classification of these expenditures based on the degree of their relevance to climate change, following a protocol developed by ODI (annex 2).
- The study methodology looks beyond spending where a response to climate change is the primary objective of the expenditure, to capture those actions where some level of impact on climate change-related outcomes can be ascertained. This approach allows a first, broad estimate to be made of climate change relevant expenditures that pass through the national budget.
- The methodology distinguishes two climate change response strategies: adaptation and mitigation.

2.1 Introduction

This chapter describes the approach the study team adopted to identify and classify climate change-relevant public expenditure in Ethiopia.

In the absence of an internationally agreed definition of 'climate finance', the study followed a country-led understanding of what this category of spending should cover, based on what has been defined as the national response to climate change in policy documents.

It is important to acknowledge that funding for climate change actions can come from a variety of sources. These include international climate funds, bilateral and multilateral donor funds, public funds, and private sector funds. This study focuses on funding allocated to finance climate change actions through the Federal Government budget. The rationale for this choice is that such spending can be assumed to be most closely aligned with national policy setting and institutional arrangements, as documented in official publications of the national budget.

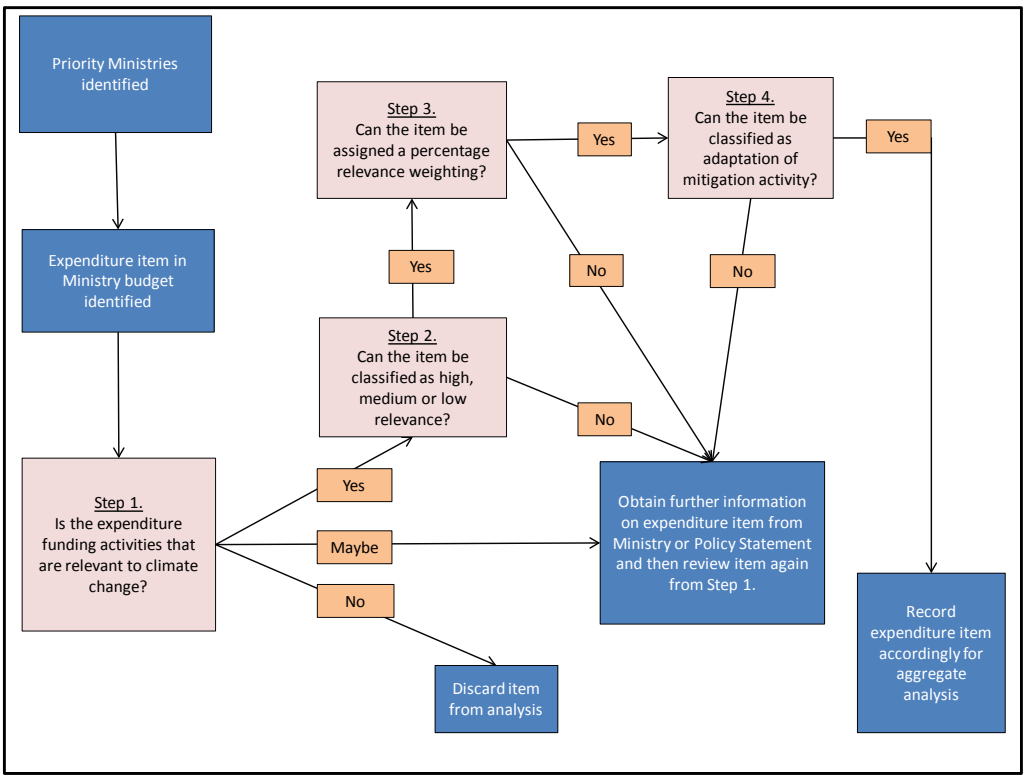
2.2 Approach to classifying government expenditure

The study methodology classifies relevant public expenditure through four stages, by determining: (i) whether spending is relevant or not relevant to climate change; (ii) whether the identified expenditure is of high, medium or low relevance to climate change; (iii) what percentage weighting can be assigned to each item of expenditure; and (iv) whether the expenditure is focused on adaptation or mitigation impacts. This methodology builds on the experience of other climate change public expenditure reviews undertaken by ODI, most recently in Uganda and Tanzania (Tumushabe et al., 2013 and Yanda et al., 2013).

The exercise explicitly takes a 'prioritised' approach to identifying climate change-relevant expenditure and does not exhaustively review each and every expenditure item within the national budget. The methodology begins by identifying those sectors most likely to have climate change-related expenditure, and then drills down into the details of sector financing in order to identify and categorise this expenditure. As a result, there remains a risk – albeit a small one – that climate change-relevant activities are being undertaken by agencies in sectors considered generally less relevant to climate change (for example, in the defence sector), and that these are missed by the analysis. The judgement of the study team is that this risk is small, and any climate change-relevant activity that is being undertaken in an agency not included in the priority list is unlikely to affect the overall conclusions of the analysis.

Figure 2.1 shows a summary stylised view of the process taken by the study team to classify expenditure items. Where issues of classification were uncertain, further investigation was undertaken in order to determine the exact nature of the expenditure item. This involved a review of relevant project documentation, cross-checking against government policy statements (such as the CRGE Strategy), as well as direct follow up with relevant personnel in the federal ministries.

Figure 2.1: Diagrammatic representation of approach to classification of expenditure items



2.3 Identifying policy areas and ministries

Eight policy areas were identified as being most relevant to climate change in Ethiopia, both in terms of the likely impacts of climate change and the potential response by government agencies. Although the exact impacts of climate change remain uncertain, based on experience in other countries and extrapolations from existing models, the expected impacts are listed in Table 2.1, together with the emerging national response actions.

Table 2.1: Anticipated impacts of climate change and possible response actions in eight key policy areas in Ethiopia

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 growth 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 and reduce soil erosion
Energy	Changes in demand levels; hydro-electricity supply weakened by changing river flows/lake levels	Expanding electricity generation from a mix of renewable sources of energy (wind farm, geothermal and solar); and introducing more efficient cooking stoves and biogas
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 catastrophic weather events	Introducing modern and energy-efficient technologies
Industry	Decline in domestic production, worsening terms of trade	Introducing modern and energy-efficient technologies

Following the identification of these policy areas, the analysis then identified the Federal Agencies mostly likely to be active in those areas. In common with budgeting systems across the world, expenditure in Ethiopia is managed on the basis of an individual ministry or other institution, rather than by sector. As a result, identification of spending lines needed to be done on an institution-by-institution basis. One hundred and forty seven Federal Agencies listed in the Approved Budget Estimates FY 2013/14 (EFY 2006) that receive money through a specific Parliamentary appropriation (a 'Vote') were

examined. Of these 147 Votes, 23 were identified as likely containing programmes and projects likely to be relevant to climate change.

The identification of agencies was cross-checked by reference to the CRGE Strategy. This strategy identifies climate change programmes to be carried out over the coming years and also the agencies that are expected to deliver them. Broadly, the identified agencies from the policy area analysis were consistent with the highest priority agencies identified in the CRGE strategy document. The 23 federal agencies that the study team then sought out and identified specific items of climate change-relevant expenditure are listed in Table 2.2.

Table 2.2: Federal Agencies whose annual budgets were examined for climate change-relevant expenditures, 2008/09 – 2011/12

Vote	Federal Agency	Vote	Federal Agency
112	Office of the Prime Minister	224	Abay Basin Authority
152	Ministry of Finance and Economic Development	225	Ethiopian Electric Agency
161	Ministry of Science and Technology	227	Awash Basin Authority
171	Ethiopian Development Research Institute	261	Ministry of Transport
211	Ministry of Agriculture (formerly Ministry of Agriculture and Rural Development)	265	Transport Authority
213	Ethiopian Institute of Agricultural Research (formerly Ethiopian Agricultural Research Organization)	271	Ministry of Urban Development, Housing and Construction
214	Institute for Bio-Diversity Conservation	273	Ethiopian Road Transport Authority
218	Horticulture Development Agency	274	Road Fund Office
219	Environmental Protection Authority (presently Ministry of Environment and Forests)	341	Ministry of Health
221	Ministry of Water, Irrigation and Energy (formerly Ministry of Water Resources)	362	Emergency Food Security Reserve Administration
222	Water Development Fund Office	363	National Disaster Prevention and Preparedness Fund Office
223	National Meteorology Agency (formerly National Meteorological Institute of Ethiopia)		

2.4 Identifying climate-relevant expenditure within the development budget

Once the relevant Federal Agencies were identified, the analysis moved to a detailed review of individual expenditure lines. The Government of Ethiopia uses a budget classification system with

several layers of information. All expenditure items are coded to express a number of categories that help identify the nature of individual expenditures, including categorisation of expenditures by agency, by department, and by economic function. The study team obtained a full list of expenditure items from the approved budget for each of the agencies, and then began a process of reviewing programmes in terms of their relevance for climate change. This exercise was completed for each year for a 4-year period: 2008/09, 2009/10, 2010/11 and 2011/12[2].

The Chart of Accounts codes accompanying the budget lines were used to identify the type of expenditure in terms of whether it was development or recurrent spending and within which ministry it occurred. However, the Chart of Accounts does not contain a marker or code for 'climate change relevant' expenditure that would allow for a straightforward exercise in simply extracting from the budget all expenditure lines with that code. As a result, a manual review of all potentially relevant expenditure was necessary.

The description of programmes in the budget documents was usually very brief, for example 'administration' or 'rural water and sanitation'. It was relatively straightforward for the team to review and exclude certain items on the basis that they were not related to climate change, for example expenditure on 'international subscriptions'. Equally, certain expenditure items were clearly relevant to climate change adaptation or mitigation (e.g. 'hydropower construction' for mitigation and 'small-scale irrigation schemes' for adaptation), whereas 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, further investigation was undertaken. The first reference point was the budget submissions from the agencies. Using this information it was usually possible to finalise a decision as to whether expenditure items were climate change-relevant or not. Where this was not possible, contact was made with relevant individuals in the ministries concerned for further clarification. The final list of relevant expenditures was validated by government officials during a workshop hosted by the study team in February 2014.

2.5 Identifying climate change-relevant expenditure within the recurrent budget

Once climate change-relevant programmes had been identified within the development budget, the recurrent budget of each agency was reviewed. The approach taken to identify climate change relevant spending was based on the assumption that the sub-agency where a climate change-relevant development project was located would utilise some of its recurrent budget to support the execution of the activity funded under the development budget. A set percentage of the sub-agency's recurrent budget for the year was then allocated as being climate change-relevant, based on the category of relevance determined for the project or programme concerned (section 2.8).

2.6 Identifying the source of climate related expenditure

The Ethiopian budget system allows for the identification of source of funds (either government or donor) for development projects. This identification is not available for recurrent expenditures, and where the government receives general or sector budget support, or loans or grants from any external

[2] 2001, 2002, 2003 and 2004 Ethiopian budget year

source that are not earmarked for certain areas. Recurrent expenditure will therefore include both government and donor funds.

Given that only one type of expenditure (development) allows for the identification of the source of funding, it has not been possible to state the source of funding for all climate change-related expenditures. However, an analysis is made in chapter 6 of the amount of donor funding that supports climate change-relevant government expenditure, as well as an analysis of the number and financial value of development projects supported by donors that are directly related to climate change.

2.7 Allocating high, medium and low relevance to identified expenditures

Once a relevant development expenditure was identified in each Agency, it was then assessed for the level of its relevance to climate change. This process takes into account that most public expenditure has more than one objective. Three broad categories of relevancy were identified: high, medium and low:

- *High relevance*: projects that have a clear focus on climate change adaptation or mitigation, where the stated primary objective of the expenditure is to deliver specific outcomes that are climate change-related. These are considered highly relevant climate change expenditure items.
- *Medium relevance*: medium relevant expenditure items are those projects and programmes that have a secondary objective relating to climate change adaptation and/or mitigation outcomes, but where the primary objective of the expenditure lies elsewhere.
- *Low relevance*: The third category of the classification is low relevant expenditure. Such spending supports activities that display attributes where indirect adaptation and mitigation benefits may arise. This third category attempts to identify actions where although there was no intention to respond to climate change the outcome of the expenditure leads to greater adaptation or mitigation capacity.

Table 2.3 sets out the definitions used by the study team to allocate expenditure lines into high, medium or low relevance categories, using experience gathered from previous studies and building on the national experience of responding to climate change and the actions likely to be part of the country's response. The list of proposed actions described within the CRGE Strategy provided important guidance. The study team also drew upon the expertise of government officials in drawing up sector specific lists to guide the identification of relevant actions.

Table 2.3: 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 or contribute to mitigation	• Energy mitigation actions (e.g. investments in renewables, energy efficiency) • Forest development aimed at primarily for rehabilitation and carbon sequestration • Building institutional capacity to plan and manage climate change, including early warning and monitoring systems • 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) • Healthcare for climate sensitive diseases (e.g. malaria) • Raising awareness about climate change • Anything meeting the criteria of international climate change funds (e.g. the Global Environment Facility)
Medium	Either: i) secondary objectives related to building climate resilience or contributing to mitigation, or ii) mixed programmes with a range of activities that are not easily separated but include at least some that promote climate resilience or mitigation	• Forestry and agroforestry actions that are motivated primarily by economic or conservation objectives, as these will also have some mitigation effect • Water storage, water efficiency and irrigation that is motivated primarily by improved livelihoods because this will also provide protection against increasing drought conditions • Broad bio-diversity and conservation strategies, as these can be expected to increase the resilience of ecosystems to climate change and help to lessen carbon emissions from land-use change
Low	Activities that display attributes where indirect adaptation and mitigation benefits may arise	• General water quality improvements (unless the improvements in water quality aim to reduce problems from extreme rainfall events, in which case the relevance would be high) • General livelihood strengthening measures, motivated by poverty reduction, but building household reserves and assets and thereby increasing resilience in areas of climate change vulnerability • Livelihood and social protection programmes, motivated by poverty reduction, but that again help build household reserves and assets and thus reduce vulnerability. • General planning capacity, either at national or local level, unless it is explicitly linked to climate change, in which case it would be high

2.8 Allocating percentage weights to identified expenditures

Following the logic of the relevance approach, if only part of the intended impact of a project is relevant to climate change adaptation and/or mitigation, then only a commensurate part of the expenditure should be counted as climate change-relevant. As a result, a percentage weighting was applied to each expenditure line guided by the high, medium and low relevance classification. This task was carried out separately for the development and recurrent budgets.

Table 2.4 indicates the percentages that were applied for each level of climate change relevance (high, medium and low). For the development budget, each project was given a percentage weighting based on the available information for the project, using 10 per cent intervals within each relevance category, within a pre-set percentile range. For the recurrent budget, a simpler approach was taken with a common weighting applied to the recurrent budget of each sub-agency where a development project had been identified.

Table 2.4: Percentage weighting of expenditure for different levels of relevance

Relevance category	Percentage weighting in development budget	Percentage weighting in recurrent budget
High	More than 75 per cent	50
Medium	Between 26 and 74 per cent	30
Low	Between 10 and 25 per cent	10

This element of the classification is particularly subject to the judgement of the study team. There is no objectively 'correct' percentage of spending to attribute to climate change expenditure, and so this approach should be viewed as a 'best estimate'. Percentage weights were applied to each climate change-relevant expenditure item based on information gathered from the budget documentation, the knowledge of the study team, and individual follow up with relevant officials in the ministries concerned. It is acknowledged that different researchers might apply different weights. However, using a 'range' approach limits the personal discretion of those making the assessment, increasing the likelihood that a different study team would come to similar conclusions.

2.9 Adaptation and mitigation

Mitigation and adaptation are the two main categories of climate change response and all expenditure items in this study were classified as being one of these two types of activity. There are conceptual differences between an expenditure that aims to help institutions, systems and communities adapt to the realities of a changing climate compared to those that seek to reduce the change in the climate itself by mitigating the impacts of human activity. Knowing the balance of actions aimed at securing these two policy objectives provides important information on the nature of the government's response to the public policy challenge of climate change.

Defining expenditures as 'mitigation' compared to 'adaptation' again requires expert judgement. In a similar way to the classification of relevance, allocation into a mitigation or adaptation category cannot be externally and objectively determined. The definitions used by the study team to help make these judgments are given in Table 2.5, which draw on the definitions determined by the OECD for use in their 'Rio marker' system (OECD, 2011). Once again, where information in the budget documentation was insufficient to make a determination, further investigation was carried out using additional budget documentation and/or direct contact with the ministry concerned.

Table 2.5: Definitions of mitigation and adaptation

Category	Definition
Mitigation	Human interventions to reduce the sources, or enhance the sinks, of greenhouse gases (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.

Other classification approaches include additional categories, such as 'capacity building' or 'technology transfer' alongside mitigation and adaptation, but these have not been used in the present study. Given that this is the first attempt at reviewing and classifying climate change public expenditure in Ethiopia, the study team decided to use only the two categories of adaptation and mitigation as a starting point.

3 Policy analysis

Chapter summary

- Climate change is a new policy concern in Ethiopia. The low level of national economic development combined with a heavy dependence on rain-fed agriculture and high population growth make the country particularly vulnerable to the adverse impacts of climate change.
- Ethiopia is one of the few countries to have formally merged its aims of developing a green economy and building greater resilience to climate change under a single policy framework: the 2011 Climate Resilient Green Economy (CRGE) Strategy.
- The CRGE Strategy is made up of two main components: climate resilience and green economy. While the Government's green economy strategy targets the financial opportunities and sustainability co-benefits of low emissions development, the climate resilient development strategy focuses on managing risk and building resilience to absorb climate change-related shocks.
- Four initiatives have been selected to fast-track the implementation of the green economy strategy (in hydropower development, rural cooking technologies, the livestock value chain, and forestry development). These initiatives represent a rational policy prioritization as they offer the prospect of immediate economic growth, large carbon abatement potential, and are attractive to international climate finance funding sources.
- The adaptation (or climate resilience) part of the strategy now needs to be enhanced so as to secure the livelihoods of those most vulnerable to climate change. In that context, the fast tracking of the agricultural sector climate resilient strategy demonstrates effective sector prioritisation.
- Ethiopia has established an innovative funding mechanism to support the implementation of the priorities set out in the CRGE strategy: the CRGE Facility. Designed as a single, national funding mechanism, this Facility is intended to make the administration of funds easier for the government to drive and manage international climate funds, donor funds and domestic funds in a coordinated manner.

3.1Climate change in Ethiopia

There is considerable evidence that the global climate is changing and projections suggest that the rate of change will increase in the future. Global temperatures are expected to increase by 1.1 - 2.6°C by the end of the 21st century. In Africa, mean annual temperature is expected to increase by 2.0 - 3.7°C. Africa is, therefore, one of the most vulnerable continents to climate change. By the 2050s, it is expected that 350–600 million Africans will be at risk from increased water stress (IPCC, 2007).

Warming has occurred across much of Ethiopia, particularly since the 1970s at a variable rate, but broadly consistent with wider African and global trends (Table 3.1). Mean annual temperature has

increased by 1.3°C between 1960 and 2006, an average rate of 0.28°C per decade (CRGE, 2011). Daily temperature observations show increasing frequency of both hot days and hot nights. Climate models suggest that Ethiopia will see further warming in all seasons of between 0.7°C and 2.3°C by the 2020s and of between 1.4°C and 2.9°C by the 2050s (Conway and Schipper 2010*)*.

Whilst regional models predict an increase in rainfall, higher resolution analyses of Ethiopia suggest a range that spans both increases and decreases in overall rainfall averages. An increase in rainfall variability is also predicted, with a rising frequency of both extreme flooding and droughts that could seriously affect agricultural production. Mean annual rainfall in Ethiopia is projected to increase, mainly as a result of increasing rainfall in the short rainy season (October to December) in southern Ethiopia. Projected changes in the April to June and July to September rainy seasons, which affect large portions of Ethiopia, are mixed but tend towards small increases in the south (especially in the south-west) and decreases in the north-east. It is also projected that the proportion of rainfall that falls in heavy precipitation events will increase throughout the country, especially during the July to September and October to December rainfall periods (McSweeney et al., 2008; World Bank, 2010).

Both the frequency and intensity of droughts in Ethiopia have increased recently and these have already inflicted severe damage to the livelihoods of millions of people. At the same time, increases in floods have stressed social institutions and intensified the vulnerability of households.

The low level of national economic development combined with a heavy dependence on rain-fed agriculture, which is sensitive to climate change, and high population growth make the country particularly vulnerable to the adverse impacts of climate change (Parry et al., 2007). Intense pressure on the country's soil, water and biodiversity resources from population growth and inappropriate traditional farming and management practices such as extensive cultivation, overgrazing, deforestation and soil erosion add to the national challenge of responding to climate change (Simane, 2011). Climate change is predicted to affect the GDP growth of the country by between 0.5 and 2.5 percent each year unless effective steps to build resilience are taken (World Bank, 2010). Climate change, therefore, has the potential to hold back economic progress, or reverse the gains made in Ethiopia's development and could exacerbate social and economic problems (McSweeney et al., 2008; CRGE, 2011).

Table 3.1: Ethiopia's changing climate

	Mean Annual Temperature	Mean Annual Rainfall	Extreme weather events
1960-2006	• Mean annual temperature increased by 1.3°C from 1960 – 2006 • More hot days and nights, fewer cold days and nights	• Highly variable from season to season, year to year, decade to decade • No significant trend	• Regular severe flooding and drought events • No evidence of change in frequency or intensity of extremes

2020s	+ 1.2 °C (range: 0.7 - 2.3°C)	+0.4%	• Heavier rainfall events. • Uncertain future El Nino behaviour brings large uncertainties • Flood and drought events likely to increase • Heat waves and higher evaporation
2050s	+ 2.2 °C (range: 1.4 - 2.9°C)	+1.1%	
2090s	+ 3.3 °C (range: 1.5 – 5.1°C)	Wetter conditions	

Source: *Conway and Schipper 2010*

3.2Background to climate change policy in Ethiopia

The Ethiopian Government has put in place a number of policies, strategies and programmes aimed at reducing the vulnerability of the country to climate variability and change. Early programmes included the Environmental Policy of Ethiopia (1997) and the National Action Plan to combat desertification and mitigate the effects of drought (1997).

The 5-year Medium-Term Development Plan of 2005 entitled *A Plan for Accelerated and Sustained Development to End Poverty (PASDEP 2005-2010)*, identified that atmospheric pollution and climate change are the cause of considerable environmental and socio-economic problems (MoFED, 2005). Impacts caused by increased weather variability include droughts and floods leading to the loss of pastureland, heightened food insecurity and environmentally-related health problems. Intervention measures proposed by the 5-year plan included developing a national strategy to enhance coping mechanisms regarding the adverse impacts of climate change and launching environmentally sound investment and other programmes that foster cleaner development, including carbon emissions trading.

The present 5-year Medium-Term Development Plan entitled *Ethiopia's Growth and Transformation Plan (GTP) (2010/11-2014/15)* has the objective of securing growth so that the country reaches middle income status by 2025 (MoFED, 2010). The plan emphasizes the enforcement of existing environmental laws as priority actions in connection with environmental conservation and climate change. The formulation and implementation of climate change adaptation and mitigation programmes are also highlighted as priority activities.

Ethiopia aims to become a middle-income country by 2025 and the economic growth plans to deliver this are set out in the GTP. These plans require high average annual economic growth, predicated on improved agricultural productivity, strengthening the industrial base, and fostering export growth. However, this growth is vulnerable to the impacts of both current climate variability and future climate change. Therefore there is a need to ensure Ethiopia's economic growth is climate resilient. It also has the opportunity to be low-carbon, based on clean technologies rather than the conventional high-carbon development path that is based on a heavy reliance on fossil fuels.

Recognising the challenge to build a middle-income country that is both resilient to the impacts of climate change and is low-carbon, the Government of Ethiopia launched the Climate Resilient Green Economy (CRGE) initiative, producing a CRGE Vision in 2011. This initiative, comprising a strategy for climate resilient development and another to promote a green economy, seeks to improve resilience to climate change, secure greenhouse gas abatement, enhance the avoidance of future emissions, as well

as fostering both economic development and reduced carbon dependent growth. Ethiopia is one of the few countries to have formally merged its aims of developing a green economy and greater resilience to climate change under a single policy framework in support of its national development objectives.

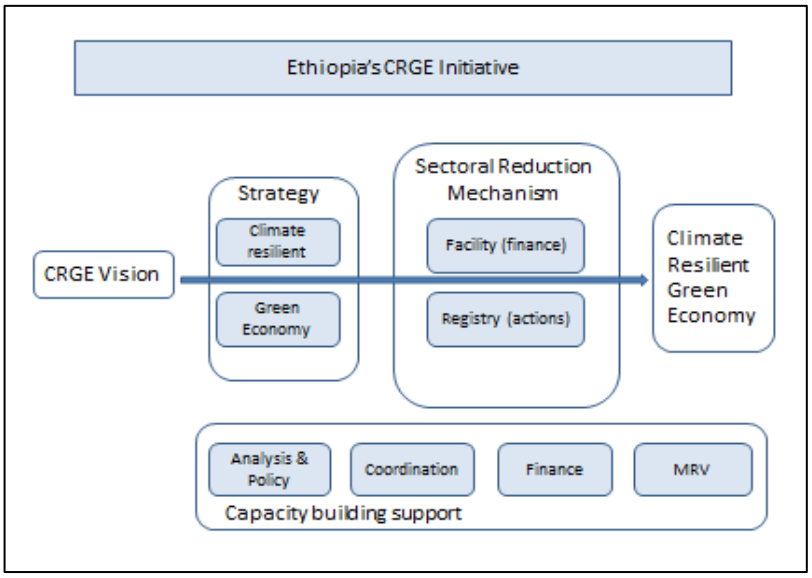
3.3Climate change policy of Ethiopia

The Climate Resilient Green Economy Vision

Building on the positive growth trajectory of the last ten years, the Growth and Transformation Plan (GTP) is the main government policy instrument to guide the economic and social development efforts of the country. The GTP sets out a goal for achieving double-digit growth that will put the country on a trajectory to middle income status by 2025, whilst at the same time becoming carbon neutral. Following the Bali Road Map and the Copenhagen Accord, Ethiopia is preparing to tackle climate change using two concurrent approaches: mitigation (actions that tackle the causes of climate change, such as reducing greenhouse gas emissions) and adaptation (actions that minimize the consequences of actual and expected changes in the climate).

The objective of the CRGE initiative (Figure 3.1) is to identify green economy opportunities that can help Ethiopia reach its ambitious growth target whilst keeping greenhouse gas emissions low. The government intends to attract development partners to help implement this new and sustainable growth model and to become a 'green economy front-runner'.

Figure 3.1: The CRGE vision



The CRGE Strategy is made up of two main components: climate resilience and green economy. The Climate Resilient (CR) strategy aims to build the capacity of the economy to cope with the adverse consequences of climate change. It is under development at the present time (April 2014) having as its goal to improve the ability of the country to resist, absorb, and recover from the effects of climate change in a timely and efficient manner. The Green Economy (GE) Strategy was launched in parallel with the CRGE Vision in November 2011 and aims to support the country in reaching the middle income threshold by 2025 whilst keeping the country's growth carbon neutral. A number of different elements and focus areas of the green economy component have been identified; and the investment planning

and implementation of some projects is already underway. Both components complement each other and are mutually reinforcing.

The Green Economy Strategy

Ethiopia is among the lowest polluting countries in the world. The country emits 1.8 tons of carbon dioxide equivalents (CO_2e) per person per year; whilst Europe emits over 10 tons and the US 20 tons per person per year on average (FDRE, 2011).

The goal of the green economy (GE) strategy is to achieve economic development whilst ensuring environmental sustainability. Economically, it focuses on achieving rapid economic development in a resource-efficient way whilst taking advantage of the country's renewable energy resources. Environmentally, it plans to limit greenhouse gas (GHG) emissions to a minimum and promote carbon sequestration through reforestation, afforestation and reduced forest degradation. Boosting agricultural productivity, strengthening the industrial base, and fostering export growth have been prioritized as vehicles for reaching this goal. The GE strategy follows a sector-based approach and has so far identified and prioritized more than 60 initiatives. These aim to help the country achieve its development goals, whilst limiting GHG emissions to the 2011 level of 150 Mt CO2e through to 2030. This target is approximately 250 Mt CO2e less than that estimated under a conventional development path (FDRE, 2011).

The GE strategy is based on four pillars:

1. Improving crop and livestock production practices for higher food security and farmer incomes, whilst reducing carbon emissions;
2. Protecting and re-establishing forests for their economic and ecosystem services, including as carbon stocks;
3. Expanding electricity generation from renewable sources of energy for domestic and regional markets;
4. Leapfrogging to modern and energy-efficient technologies in the transport, industry and construction sectors.

The GE Strategy provides concrete targets for reducing emissions in eight key areas: energy, buildings and cities, REDD+, soil based emissions, livestock, transport, industry and health. In order to fast-track implementation, four priority initiatives have been selected. These are:

- exploiting Ethiopia's vast hydro-power potential;
- large-scale promotion of advanced rural cooking technologies;
- efficiency improvements to the livestock value chain; and
- Reducing emissions from deforestation and forest degradation (REDD+)

The national REDD+ programme is an integral part of the overall green economy strategy. The forest sector is estimated to account for about 25% of greenhouse gas emissions under a business as usual scenario by 2030; REDD+ is therefore seen as an opportunity to target these emissions and to attract additional international climate finance for this part of the Strategy.

Implementing these initiatives will also offer important co-benefits such as improved public health, through better air and water quality, and the promotion of rural development by increasing soil fertility and food security.

The Climate Resilient strategy

Whilst the GE strategy was completed and launched together with the CRGE Vision document in November 2011, sector specific Climate Resilience Strategies are currently being prepared. The agricultural sector resilience strategy is nearly completed, having recently held a validation workshop. The water sector strategy is also in preparation. The agriculture CR Strategy focuses on how the agriculture sector can better cope with weather variability, both today and in the future and has the following objectives:

1. *Challenge to growth and wellbeing:* the CR Strategy will identify the impact of current weather variability and project future climate change on Ethiopia.
2. *Response to build climate resilient growth:* by identifying and costing the options to build climate resilience, reducing the impact of current weather variability and climate change.
3. *Funding and institutions to deliver climate resilience:* by mapping the steps to finance and implement efforts to build climate resilience.

Forty-one promising options have been selected to build resilience in the agriculture sector against the risks from current weather variability and future climate change. These options were selected based on a number of criteria, including their technical feasibility, contribution to economic growth, contribution to equity and distributional issues, and the extent to which they address current weather variability and future impacts of climate change. An appraisal of all these options using a multi-attribute analysis was carried out. This exercise validated the options, identified the relative characteristics of each option and provided an assessment of the urgency of each option.

Total annual investment in agriculture is estimated at approximately USD 1 billion, of which approximately 40% is government investment through the Ministry of Agriculture. Private sector investment currently stands at 20% and is expected to rise to over 40% by 2030. It is therefore important that such investments are resilient to future climate change. The additional funding required to implement all 41 options has been estimated at USD 200 million today, rising to around USD 600 million by 2030.

3.4 Instruments to assist with the implementation of the climate change policy

The CRGE Facility

The government of Ethiopia has established a funding mechanism to mobilise and disburse climate finance, known as the CRGE Facility. The purpose of the Facility is to support the implementation of the priorities set out in the CRGE strategy and the development and implementation of CRGE investment plans. It serves as a vehicle to mobilise, access and combine domestic and international sources of finance (both public and private) to support the implementation of the CRGE strategy through grants as well as guarantees and results-based payments. It is also planned to assist the Government in accessing international climate funds directly by ensuring compliance with international standards and the requirements of global funds.

As there will be a single funding mechanism, it is considered this will make the administration of funds easier for the government to drive and manage international climate funds, donor funds and domestic funds in a coordinated manner. The government aims to mobilise an estimated USD 200 billion from national and international, public and private sources to implement the CRGE over the next 20 years.

The Facility supports and incentivizes a programmatic approach to climate change activities, minimizing the transaction costs and duplication associated with a projectized approach. It provides a single engagement point where the Government, development partners, the private sector, civil society, and other stakeholders can engage and make decisions about climate change issues, thus enhancing coordination and aid effectiveness.

The Facility is being administered by the Ministry of Finance and Economic Development (MoFED). The United Nation Development Program (UNDP), through its Multi-Trust Fund Office will provide provisional fund administration for those resources that are channelled to the Facility's international account in New York. MoFED will administer resources that are directly channelled to the Facility's national account. The Facility is guided by strategic directions set by the Environmental Council and the CRGE Ministerial Steering Committee. The Facility consists of two functional components: the finance and technical units. MoFED is responsible for the overall management of the finance section of the Facility with the Ministry of Environment and Forests (MEF) being responsible for technical coordination. It is recognised that operating the Facility will require additional capacity within the Government of Ethiopia. Such capacity development will be provided to MoFED and MEF through strengthening their respective CRGE units.

There will be two kinds of work that funds channelled through the Facility will support (MoFED, 2012):

- support to line ministries and regional governments in the implementation of strategically planned programmes and projects. Potentially, 75% of the Facility's funds will be disbursed in this way as pooled and non-earmarked finding. This means that donors will be contributing to a fund that will implement the government's priorities as set out in the CRGE strategy.
- demand-driven activities identified by non-state actors, such as NGOs and researchers, in collaboration with federal and regional entities. This funding could potentially be earmarked by donors. This component has a pre-set percentage of 25% of the Facility's funds.

The Sector Reduction Mechanism (SRM)

The Sector Reduction Mechanism (SRM) is a policy instrument for reducing vulnerability and greenhouse gas (GHG) emissions. The purpose of the SRM is to provide upfront support and ex-post payment for the preparation and implementation of GHG reduction interventions. The SRM has three aims. First, the SRM will help to mainstream green growth and resilience into Ethiopia's broader development activities. Second, the SRM will ensure that Ethiopia's efforts to acquire low carbon and climate resilient technologies are aligned and coordinated. Finally, the SRM will leverage climate related investment. The conceptual foundation of the SRM is to reward demonstrated reductions in emissions and vulnerability. A Technical Unit, based in the MEF, and the CRGE Facility Secretariat, based in the MoFED, will provide guidance to sectors to help them draft their sector reduction actions (SRAs).

SRM presents a guide to prioritise and prepare climate resilient green economy plans and projects, which can then be submitted to the CRGE Facility to access climate funds. The following will be eligible for funding:

1. Projects that create the enabling conditions for implementation of actions that reduce the cost of social, economic and environmental vulnerability
2. Projects that create the enabling conditions to reduce greenhouse emissions.
3. Projects that track progress by providing a measurement and quantification of reductions in emissions and vulnerability due to implemented actions.

4. Projects that deliver on international commitments by fostering the implementation of the UNFCCC and other relevant multilateral agreements on environment and climate to which Ethiopia is a Party consistent with other national environmental policy.

3.5 Fast track activities to implement the climate change policy

Having articulated its policy objectives around a climate resilient green economy, the country has now begun to implement the policy. The present pillars of the national response to climate change are Ethiopia's Programme of Adaptation to Climate Change (EPACC), Nationally Appropriate Mitigation Actions (NAMA), and emission abatement initiatives that expand the use of widely available renewable energy resources (e.g. hydropower, wind farm, geothermal, biogas, efficient cooking stoves), supported by the CRGE Strategy. CRGE sector and regional programmes and action plans will build upon these to implement the CRGE Strategy and the GTP.

Alongside investments in planning processes and instruments, the government is also designing and implementing projects as a 'fast track' approach to piloting and implementing initiatives that will support CRGE objectives. For example, the Ministry of Water, Irrigation and Energy is implementing a programme to scale-up the use of renewable energy; the Ministry of Agriculture is working on sustainable land management to reduce GHGs emissions; and the Ministry of Environment and Forests is preparing forestry projects for carbon sequestration. The implementation of this 'fast track' approach offers an important opportunity to learn early lessons on project prioritisation.

Nationally Appropriate Mitigation Actions

In response to the Copenhagen Accord's call for Non-Annex I Parties to prepare and implement Nationally Appropriate Mitigation Actions (NAMAs), Ethiopia has prepared and submitted its NAMA to the UNFCCC secretariat (EPA, 2010a). Key mitigation technologies and practices include the following:

- Renewable energy: including ten hydro-power stations with a total capacity of approximately 5,500 MW to be completed by 2015; seven wind power projects with a total of 764 MW to be completed by 2013; and six geothermal projects with a total of 450 MW to be completed by 2018.
- Bio-fuel Development: to produce 621 million litres of biodiesel and 63 million litres of ethanol for the market starting in 2015.
- Electricity Generation from Renewable Energy for off-grid use and direct use of renewable Energy: including 150,000 solar home systems, 65,000 Small Hydro Projects, 600 wind or solar pumps, by 2015.
- Transport: Construction of nine national railway routes covering approximately 5,000 km to be completed by 2020. Additionally, a Light Railway Transit and Rapid Bus Transit system would replace the large number of diesel buses in the capital, Addis Ababa.
- Forestry: including the reforestation of 214,440 km^2 of degraded lands, and 60,000 km^2 of national parks to be managed to reduce GHG emissions.
- Agriculture: Compost production and application on 80,000 km^2 of agricultural land and 261,840 km^2 of agro-forestry management for carbon sequestration.
- Waste management: Landfill methane recovery from nine landfills from a total of 43 million m^3 of deposited waste.

These are all considerable, and challenging, targets, which will require considerable levels of public investment.

Ethiopia's Programme of Adaptation to Climate Change (EPACC)

Ethiopia's Programme of Adaptation to Climate Change (EPACC) aims to build a climate resilient economy through adaptation at sector, regional and local community levels. The EPACC updates and replaces Ethiopia's National Adaptation Programme of Action (NAPA), which was formulated in 2007 and submitted to the UNFCCC Secretariat. The May 2010 report of the UNFCCC's Least Developed Countries Expert Group encouraged the updating of NAPAs, suggesting that a programmatic approach could be more effective than the project approach of the NAPAs. In line with this recommendation, Ethiopia has reformulated its adaptation programme.

The sector ministries and the Regional Governments are expected to mobilize all stakeholders down to the local community at the village level in formulating and implementing their responsibilities. About 20 adaptation initiatives have been identified in the areas of health, agriculture, forestry, land management, water, energy, waste, transport, industry, infrastructure, municipalities and disaster management at different levels (EPA, 2010b). Priority actions to be taken for implementing adaptation measures to climate change are:

- Identifying the risks posed by climate change and mapping the areas likely to suffer
- Establishing simple and practical information networks
- Creating/strengthening an effective early warning system
- Mainstreaming adaptation into development and service activities
- Integrating adaptation to climate change into educational curricula at all levels
- Enhancing integrated research and development activities on climate change
- Accessing financial resources and technologies for the implementation of climate change adaptation

3.6 Effectiveness of climate change policy implementation

The effectiveness of these national policy processes in directing the delivery of climate finance can be assessed through the use of the analytical framework summarized in annex 1 of this report. The four principles of policy development and implementation considered relevant to the effective delivery of climate change finance are ease of implementation, legitimacy, coherence and transparency.

3.6.1 First Policy Principle: Climate change policies shall be designed for ease of implementation

The CRGE strategy can be reviewed in terms of its targeted objectives, timelines to achieve these objectives, its method of mobilizing and delivery of financial resources, and the availability of implementing instruments and regulations.

> *Targeted objectives for effective implementation*: The CRGE strategy aims to build a Climate Resilient Green Economy by the year 2025. In doing this, the strategy has identified priority sectors for green economy actions. Agriculture is one of these sectors, identified under both mitigation and adaptation efforts. The government has also selected four initiatives to fast-track the implementation of the GE strategy: exploiting the country's vast hydropower potential; large-scale promotion of advanced rural cooking technologies; efficiency improvements to the livestock value chain; and reducing emissions from deforestation and forest degradation (REDD+). These initiatives represent a rational policy prioritization as they appear to have the

best chance of promoting growth immediately, capturing large abatement potentials, and attracting international climate finance for their implementation.

Timelines to achieve the set policy objectives: The timelines to achieve the set policy objectives are articulated in the relevant policy documents. The GE Strategy aims to support the country in reaching the middle income threshold by 2025 whilst keeping the country's growth carbon neutral. The GE strategy preceded the CR strategy in order to capitalize on international financing opportunities and the relative simplicity of it preparation. Whilst the time line to achieve the CR strategy for agriculture is in place, that of other sectors have not yet been articulated.

Mobilization of financial resources: Mobilisation of financial resources to implement the policy has been facilitated through the establishment of the CRGE Facility. In addition to securing increased levels of climate finance available to the country, the CRGE Facility also aims to enhance the coordination and targeting of its utilization by providing a single coherent system within which development partners, the private sector, civil society and other stakeholders can engage and determine how best to invest in relevant actions.

Subsidiary instruments for implementation of the Policy: The Subsidiary instruments for the implementation of the CRGE strategy – the CRGE Facility and SRM – have been launched officially. Implementation has now begun, although they both still require legal gazettement.

Thus it can been seen that since the development of the 2011 CRGE Vision, national climate change policy instruments have been designed in such a way that facilitates policy implementation through the successive iteration of more detailed strategies, plans, programmes and projects.

3.6.2 Second Policy Principle: The legitimacy of climate change policies shall be recognised by stakeholders

During the process of designing the CRGE Strategy, the government of Ethiopia has used three different multi-stakeholder bodies. First, the Inter-Ministerial Committee (IMC) has acted as the governing and decision making body for the CRGE initiative. Second, the Technical Committee of CRGE (TC) provides a platform for providing technical guidance that supports a Sub-technical Committee (STC) composed of experts from different ministers/sectors that aim to help implement the CRGE at both the national and regional level. The leading institutions within these three entities that allow them to fulfil their primary governance functions are as follows:

- As Chair of the Inter-Ministerial Steering Committee, the Office of the Prime Minister provides overall guidance to the work conducted with respect to the CRGE, and facilitates high-level decision making for the CRGE Facility;
- MEF oversees the CRGE Task Force and thereby coordinates work conducted with respect to the Sectoral Reduction Mechanism (SRM) and the specification of the CRGE Strategy Framework; and
- MoFED is responsible for hosting the CRGE Facility and for providing the necessary financial and programme management systems and expertise.

These newly established platforms provide for representation of key stakeholders from across all parts of the government administration, but less so for civil society groups. There are national research institutions (e.g. the Ethiopian Development Research Institute) and other higher learning institutes that

are tasked with providing evidence-based analysis to support the policy process. However, there is little evidence of such analysis having been completed so far.

3.6.3 Third Policy Principle: Climate change policies shall be coherent with national development policies

The climate change strategy is an integral part of the national development policy.The CRGE strategy document clearly acknowledges both the Growth and Transformation Plan (GTP) and the Environmental Policy of Ethiopia. The GTP, the main government policy instrument that guides the major economic and social development efforts of the country, sets out a goal for Ethiopia to achieve middle-income country status by 2025 through steady double-digit growth, whilst at the same time becoming carbon neutral. Boosting agricultural productivity, strengthening the industrial base and fostering export growth have been prioritized as vehicles for reaching this goal.

3.6.4 Fourth Policy Principle: Climate change polices shall promote transparency in climate finance delivery

The CRGE does not identify in explicit terms measures to ensure that the delivery of climate finance happens in an open and transparent manner. The mechanisms and modalities to promote transparency of climate finance are presented in the CRGE Facility and SRM. The Facility is a national institution, working with all stakeholders to support Ethiopia's climate change response. It is closely linked to the Ministry of Environment and Forests, the Office of the Prime Minister and the Ministry of Finance and Economic Development. The core purpose of the CRGE Facility is to channel finance to the activities prioritised in the GE and CR strategies and plans.

The CRGE Facility was officially launched on September 2012 and it is responsible for attracting, allocating and channelling international climate finance. The Facility will look to leverage both public and private finance, from both multilateral and bilateral sources. Ideally, climate finance will complement other forms of investment to bolster Ethiopia's core climate-compatible development activities (in areas such as food security, energy, infrastructure development and natural resources management). The government is also looking at the possibility of having a performance-based mechanism for allocating finance, which can be expected to enhance the transparency of climate finance delivery.

3.7 Conclusions

The Ethiopian government has committed to building a Climate Resilient Green Economy (CRGE) that aims to ensure economic development whilst pursuing a low emissions path and building resilience to adapt to climate change. While the Government's green economy strategy targets the financial opportunities and sustainability co-benefits of low emissions development, the climate resilient development strategy focuses on managing risk and building resilience to shocks through sequenced measures.

Our measures of effectiveness suggest that the policy environment has both strengths and weaknesses, which may influence the implementation of the country's national response to climate change.

In terms of its strengths, climate change has clearly been mainstreamed within the national development planning process. The main policy instrument, the CRGE strategy, has been well designed for ease of implementation, with coherence across the two main elements of the strategy (mitigation and adaptation). The mitigation (or green economy) element began earlier and has been influential in

informing the overall growth trajectory that aims to secure for Ethiopia middle income status by 2025 in a carbon neutral way. The adaptation (or climate resilience) part of the strategy now needs to be enhanced so as to secure the livelihoods of those most vulnerable to climate change. In that context, the fast tracking of the agricultural sector CR strategy demonstrates effective sector prioritisation.

Our analysis suggests two areas where further effectiveness gains may be sought. The first concerns how best to secure the active participation of all stakeholders in the policy process so as to maximise the likelihood of active implementation of climate change programmes and projects. There is broad experience that demonstrates effective delivery of public programmes depend in large measure on early involvement of all affected groups. Creating additional space for non-government officials in the present policy platforms is worthy of consideration. Second, the present policy is silent on how it will promote transparency in climate finance delivery, which is a generally-held principle of public administration. The emphasis on performance-based approaches for the allocation of climate finance by the CRGE Facility represents an important opportunity in this regard.

4 Institutional analysis

Chapter summary

- Following the 2009 climate change conference in Copenhagen the Environmental Protection Authority (EPA) acted as the national flagship institution on climate change. The EPA oversaw the development of the climate resilient green economy strategy that has shaped Ethiopia's approach to climate change as well as its relationship with global efforts to address climate change.
- A recent evolution of the institutional architecture is the re-designation of the EPA as the Ministry of Environment and Forests (MEF). This new ministry will have enhanced powers to play a leading role in matters relating to climate change, nationally as well as internationally. This shows the government's determination to consider climate change as one of the priority areas in dealing with the country's long-term development needs.
- The CRGE Facility has been established at the Ministry of Finance and Economic Development (MoFED) as the financial mechanism of the CRGE. Because climate change is an economy-wide issue, the inter-ministerial collaboration between the MoFED and MEF in managing the CRGE Facility is a key institutional arrangement to secure the effective implementation of the programmes set out in the CRGE strategy.
- Implementing the CRGE strategy requires a major transformation of the institutional architecture of the government administration (both horizontally and vertically). Considerable public investment will be required to capacitate the various government ministries and agencies charged with the responsibility of implementing climate change programmes at all levels of government.
- Through these major recent institutional reforms, Ethiopia appears to be better prepared to access global funding for climate change. This in turn will enhance the country's ability to implement the CRGE strategy effectively.

4.1 Introduction

Ethiopia has been repeatedly hit by drought and other climate-related disasters, all of which are manifestations of the undesirable effects of climate variability. The Relief and Rehabilitation Commission (RRC) was the first national organisation to be tasked with the coordination of domestic as well as international efforts to deal with the devastating effects of drought that ravaged the country twice during the mid-1970s and mid-1980s. With the change of government in 1991, the RRC was reorganized first as the Disaster Preparedness and Prevention Commission (DPPC) and later as the Disaster Preparedness and Prevention Agency (DDPA) under the Ministry of Agriculture (MoA). These institutional arrangements, although not directly linked to climate change, represent a conscious effort on the part of the Ethiopian government to deal with environmental risks and stresses resulting from the long-term effects of climate variability. In this respect, Ethiopia has a longer experience in

establishing a national institutional response to climate change-related threats compared to many other countries in Africa.

The main focus of this chapter is to analyse the recent institutional arrangements that have been put in place to deal with the challenges related to the impacts of climate change. An important first consideration is that climate change has only recently been recognized by the Ethiopian government as a major development challenge. The early phases of climate change-related initiatives in the country were not matched by the establishment of an institutional architecture dedicated to deal with the challenges of climate change across all sectors of the economy. Early climate change-related initiatives were confined to very few institutions, principally the National Meteorology Agency (NMA) and the Environmental Protection Authority (EPA). This is in contrast to the recent establishment of the CRGE implementing units within line ministries and the CRGE Facility within the MoFED, which represents a move by government to rationalise government's overall funding of climate change actions and to tap into global funding for climate change mitigation and adaptation. These changes represent very significant institutional change, the impact of which will take several years to become apparent.

In the following sections, the analysis is directed at: (i) the state of the national institutional arrangements for climate change: (ii) the institutional coordination mechanisms for climate change; and (iii) the linkages between national and local institutions dealing with climate change-related activities.

4.2 The institutional arrangements for climate change

Ethiopia began to participate in international efforts to deal with climate change as early as the late 1970s. Ethiopia attended the first World Climate Conference in Geneva in 1979, organised by the World Meteorological Organization. The country was also represented at the Earth Summit in Rio de Janeiro in 1992, which agreed the United Nations Framework Convention on Climate Change (UNFCCC).

At the UNFCCC Conference of the Parties (COP) meeting in Kyoto in 1997, Ethiopia was represented by the NMA. The NMA became the national focal institution and remained so until the Copenhagen COP meeting in 2009, when responsibility for serving as the national focal institution was transferred to the EPA. During the 13 years between 1997 and 2009 the issue of climate change did not receive significant attention by the government, with country action being limited to attendance by the NMA at international climate change conferences.

The first national conference on climate change was convened in 2009, immediately before the landmark Copenhagen COP meeting. Although the initiative came from Oxfam America, the NMA was instrumental in securing government approval for the conference and also in drawing the attention of high profile government officials including the then Prime Minister Meles Zenawi. The organizing committee of the conference was chaired by the state minister of Agriculture and Rural Development, with NMA and EPA as members of the committee. The participation of government representatives from MoA, NMA and EPA was very important in building government confidence in national initiatives related to climate change. This national conference was a prelude to subsequent government engagement in issues related to climate change and helped to shape Ethiopia's role in the 2009 Copenhagen COP meeting. Ethiopia's participation at the 2009 COP meeting was visible by the attendance of the then Prime Minister, not only representing Ethiopia but also leading the African delegation on climate change. This marked the beginning of a period when the Ethiopian government began to play a leading role in defining climate change, formulating strategies for dealing with climate change impacts, and mainstreaming climate change into sector activities within the country.

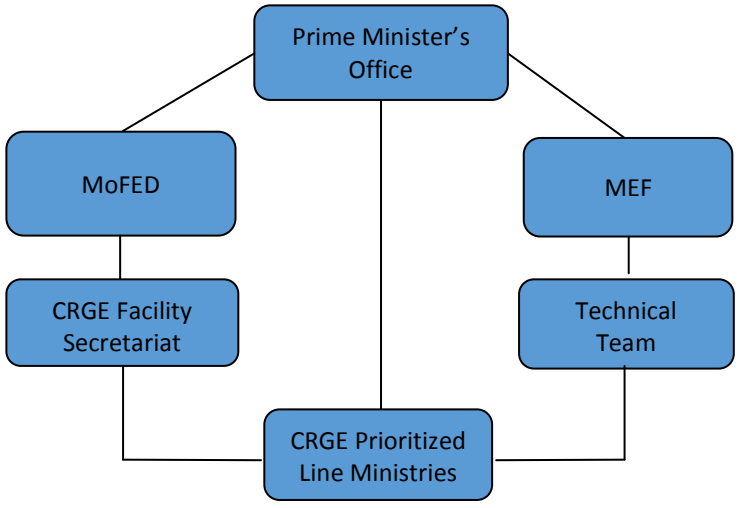
However, this policy shift on climate change by the government occurred at a time when there was no national institution providing strong leadership on climate change. The issue of climate change was being debated in a situation where consensus was lacking as to which public institution should serve as the flagship institution. The COP meeting appeared to bring matters to a head, with the EPA emerging as the national lead institution following the Copenhagen conference.

The government's subsequent realization of the importance of formulating a national policy on climate change led to the preparation of the Climate Resilient Green Economy initiative in 2011. As described in the previous chapter, Ethiopia's CRGE initiative outlines a vision and strategy, together with the necessary financing and institutional arrangements that Ethiopia will need to pursue to attain the triple goals of economic growth, net-zero emissions, and strengthened resilience. These goals are aligned with the government's five-year Growth and Transformation Plan, which pursues double-digit economic growth so that Ethiopia can join the ranks of middle income nations by 2025.

The formulation of the CRGE has been the major process in consolidating the government's commitment towards climate change. The CRGE also signals government's preparation and readiness to tap global climate change funds. The institutional architecture has been strengthened by the establishment of the CRGE Facility, a financial mechanism designed to mobilize, access and combine domestic and international, public and private sources of finance to support the implementation of Ethiopia's CRGE Strategy.

Three federal institutions are responsible for the overall management of the CRGE strategy (Figure 4.1). These are the Prime Minister's Office (PMO), which provides overall policy guidance; the Ministry of Finance and Economic Development (MoFED), which hosts the Facility and hence the financing of the strategy; and the Ministry of Environment and Forests (MEF), which provides the technical guidance for CRGE activities. Next to MoFED and MEF are line ministries prioritized by the CRGE strategy, including MoA, together with the Ministries of Water, Irrigation and Energy; Trade; Transport; and Urban Development, Housing and Construction.

Figure 4.1: Institutional arrangements for the implementation of the CRGE Strategy



4.3 The Ministry of Environment and Forests

The FDRE Proclamation No. 803/2013, which amended Proclamation No. 691/2010, has provided for the establishment of a Ministry of Environment and Forests (MEF) with the powers and duties to secure the environmental objectives provided under the Constitution and the principles set out in the environmental policy of Ethiopia. This ministry has subsumed the roles and responsibilities of the EPA.

This recent elevation of the EPA to the status of a ministry is seen as a natural development that responds to the formulation and implementation of the CRGE. The creation of the CRGE Vision has necessitated an institutional architecture that can facilitate its implementation. Officials at EPA successfully argued and lobbied for a cabinet level position alongside the main line ministries of Health, Agriculture, and Water, Irrigation and Energy so that the environment and forests are recognized as key sectors for the success of the CRGE.

The former PM was in favour of elevating the EPA direct to a Ministry of Environment. However, a compromise was reached to include forests (which used to be housed in the Ministry of Agriculture) as part of the environmental remit. The inclusion of forestry at the level of a state minister will allow the new ministry to promote climate change-related forestry programmes such as REDD+[3]. In the CRGE Facility, the MEF is charged with the responsibility to lead the technical committee that reviews proposals, determining their feasibility to achieve their intended objectives, and ensuring compliance with the overall strategy of the CRGE.

MEF is better positioned to promote not only environmental issues but also to market environmental services and climate change-related opportunities successfully (e.g. clean energy, carbon sequestration). Its establishment is seen by many observers as a positive move by Government to strengthen the institutional architecture for the implementation of the CRGE strategy and the country's overall response to climate change. Nevertheless, MEF's effectiveness to fulfil this function will depend on its ability to recruit professionals equipped with sound knowledge and skills on the science and principles of climate change. As a brand new ministry, it will also likely take time to build its own internal practices and procedures as well as establishing itself with other ministries.

4.4 Implementing the CRGE

Implementation of the CRGE is sector-based and follows an approach known as the sectoral reduction mechanism (SRM). Three institutional arrangements underpin the SRM:

- An Inter-Ministerial Council with representatives from the relevant line ministries;
- The CRGE Technical Committee made up of senior government officials drawn from the relevant line ministries, plus the National Planning Commission;
- The CRGE Facility Secretariat, led by a state minister within MoFED, a director, a coordinator, and a finance and technical team that is responsible for the day-to-day operation of CRGE functions.

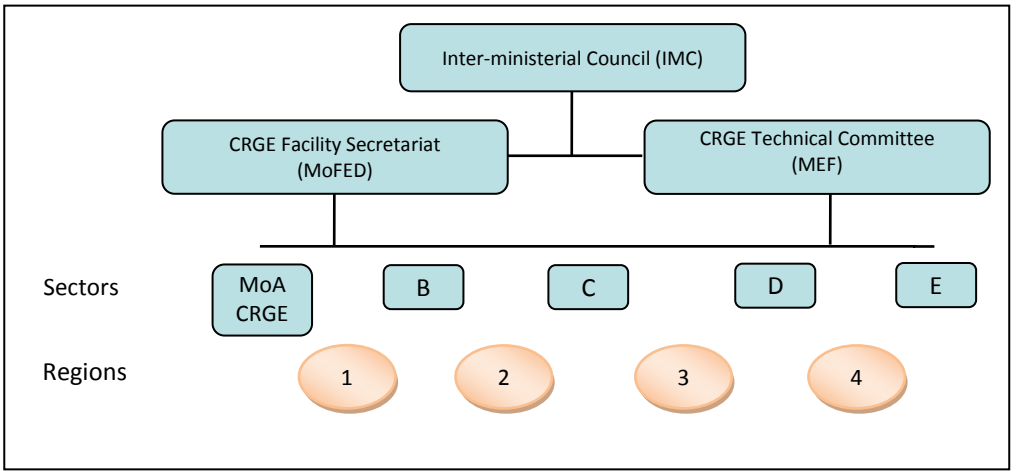
Following the establishment of the CRGE Facility, CRGE units have been set up in various line ministries to streamline CRGE activities and to identify areas within the mandated function of each ministry that will require financial support from the CRGE Facility (Figure 4.2).

Some ministries appear to have moved faster in building their CRGE units than others. The Ministry of Agriculture, for example, has established a CRGE unit under the Natural Resource Sector, headed by a

[3] REDD+: Reduced Emissions from Deforestation and Forest Degradation, a major international response to climate change

state minister. The MoA has also prepared a CRGE manual and has sent this to the regional bureaus of agriculture. The regional bureaus of agriculture are then expected to set up CRGE units so that they can identify activities that require financial support from the CRGE Facility.

Figure 4.2: Structure of CRGE implementation



The CRGE Facility manual identifies two major types of entity that will plan and implement the programs of the CRGE. These are known as implementing entities (IEs) and executing entities (EEs). IEs consist of federal line ministries, regions (through regional bureaus) and woreda sector offices. Regions and woredas replicate the federal line ministries at the sub-national level and are expected to establish CRGE Facility Secretariats chaired by the regional presidents and woreda administrators respectively. The implementing entities will be responsible for initiating sectoral reduction plans (SRPs), receiving funds and coordinating the overall implementation of activities (Box 4.1). Executing Entities on the other hand are responsible for the actual implementation of the CRGE actions on the ground. They include a wide range of non-state actors such as community organizations, the private sector, micro and small enterprises, academic/research institutions, think tanks and NGOs. The EEs are expected to prepare investment plans for eventual financial support by the CRGE Facility.

Box 4.1: Responsibilities and mandates of federal and regional level CRGE focal units

Sector CRGE units

- Mainstreaming CRGE-related activities in their respective sectors
- Carrying out sector-based MRV
- Preparing and updating sectoral reduction plans (SRPs)
- Cooperating with executing entities in the preparation of proposals/ investment plans

Regional Environmental Protection, Land Use and Land Administration Bureaus

- Implementing entity at the regional level
- Coordinating CRGE activities at the regional level
- Regional representative of MEF
- Cooperating with executing entities in the preparation of proposals/investment plans
- Can directly submit investment plans/proposals to MoFED

Implementing the CRGE represents a major transformation of the institutional architecture in response to climate change and the needed across-government action required (both horizontally and vertically). Considerable investments will be required to capacitate the various government ministries and agencies, and this will have to be reflected in spending programmes. Ensuring that the implementing entities have sufficient capacity to deliver this ambitious national climate change agenda is a major challenge. One ministry where such transformation is already underway is the Ministry of Water, Irrigation and Energy. The new emphasis on irrigation in the ministry's remit reflects a shift away from rain-fed to irrigated agriculture as an explicit adaptation strategy.

4.5 Coordination mechanisms

Achieving the objectives set out in the CRGE strategy will require close collaboration between the relevant line ministries, as well as between departments within the same ministry. Ethiopia's approach to climate change was initially not coordinated nor streamlined across the different line ministries. For example, there was limited exchange of information and consultation between NMA and EPA when the former was serving as the national focal institution on climate change at the UNFCCC. The NMA was criticized for not making the link between climate change and national development sufficiently strongly. This may be explained by the fact that its prime mandate and competence lies in the monitoring of atmospheric processes and weather patterns.

The establishment of the CRGE and subsequent creation of the CRGE Facility within the MoFED is expected to reduce many of the problems associated with coordination and collaboration across the different line ministries. The new arrangement is expected to facilitate a centralized mobilization and delivery of climate change funds and subsequent implementation of programmes and projects focusing on climate change mitigation and adaptation by different line ministries. This is mainly in response to the mainstreaming challenge of climate change, and a need to build on the previous arrangement whereby the former EPA was in charge of coordinating climate change finance delivery.

Climate change-relevant line ministries coordinate their actions at different levels. At the federal level, the inter-ministerial committee (IMC) under the PM's office maintains regular interaction and collaboration among federal institutions engaged in climate change and related activities. MoFED and MEF coordinate two important aspects of the CRGE Facility: MoFED being responsible for managing the Facility, including the mobilization of both domestic and external resources for the implementation of CRGE programmes and MEF being responsible for overseeing the technical component of the CRGE Facility, including the evaluation and validation of proposals/investment plans submitted for funding through the Facility.

However, the performance of the CRGE Facility in coordinating the financing of climate change-related activities in the country has yet to be tested. Despite the widespread optimism as to the appropriateness and efficiency of this new institutional arrangement, there are concerns regarding the technical capacity of the various committees to generate and facilitate climate financing. This is especially true for the regional and woreda level CRGE Facility Committees, where knowledge and awareness on climate change issues is not yet strong. For example, analysis of two local governments (Yabelo woreda from Oromia Regional State and Mecha woreda from Amhara Regional State – see chapter 7 of this report) has demonstrated lack of knowledge about the science of climate change. This suggests an urgent need to improve the capacity of individuals engaged in climate change-related

functions at all levels of the federal and state governments through training and awareness raising activities.

There are operational challenges to securing effective coordination. According to a former EPA official, one of the problems is that sector institutions often send junior officials to meetings. These officials are then not in a position to commit their institution until they have sought the approval of their senior colleagues. This often takes days or weeks to happen, causing delays in the decision making process.

4.6 Linkages between national and local institutions

The CRGE sets out an ambitious national agenda. This task cannot be achieved by government alone. It requires the concerted efforts of all sectors of society: government, non-government, community, private sector, and innovative micro and small business actors. Government as the owner of the CRGE has to create an enabling environment to facilitate implementation of CRGE targets across a broad spectrum of green-friendly sectors, including forestry, energy and roads.

The effectiveness of the CRGE Facility will depend to a large extent on the capacity of local institutions to implement the CRGE. In this context, local institutions are of two types. These are government institutions (e.g. woreda-level sector offices) and non-government actors in the private, NGO and community sectors as well as micro and small businesses. The linkage between national and local-level government institutions as far as the CRGE is concerned is beginning to take shape with the establishment of CRGE units in the regional bureaus. The new MEF structure will soon reach woreda level and this will facilitate linkage among the different sectors.

The weakest of the linkages is between public institutions and non-government actors. This is partly a result of government emphasis on inter-sector coordination, with less attention being given to important climate change stakeholders operating in the private, NGO, community space. The government has yet to engage fully with non-state actors to secure the successful implementation of the CRGE.

4.7 Effectiveness of the proposed institutional arrangements

The study's analytical framework sets out three key principles against which a country's institutional arrangements can be assessed to determine the effectiveness of climate finance delivery. These are: (i) the existence of a national mechanism for coordination between institutions involved in climate finance delivery; (ii) whether these institutions demonstrate a strong ability to change and innovate; and (iii) whether the relevant climate change institutions are locally anchored.

4.7.1 First Institutional Principle for Effective Climate Finance Delivery: a national mechanism shall exist for coordination between institutions involved in climate finance delivery

As has been described in this chapter, the establishment of the CRGE Facility under the co-mandate of the MoFED and MEF demonstrates government's readiness to deal with issues of climate change in a coordinated and collaborative manner. Furthermore, the fact that the PM's office plays an overseeing role in the management of CRGE Strategy shows the high level of support CRGE has received from the highest office of the land. These national coordination arrangements appear strong, if yet to be tested.

4.7.2 Second Institutional Principle for Effective Climate Finance Delivery: Institutions shall demonstrate a strong ability to change and innovate

Another important criterion for assessing the effectiveness of climate change institutions is whether the mandated institutions are able to change and innovate to take advantage of new funding opportunities. This implies the ability of institutions to cope with high levels of complexity and uncertainty in the face of new challenges. The experience here of the recent promotion of the EPA to a new ministry suggests a considerable appetite by government to change and innovate, reflecting the transformative ambition of the CRGE.

In addition, the establishment of CRGE units within the existing structures of line ministries demonstrates the capacity of federal institutions to respond to the institutional demands of the CRGE. The CRGE Facility operation manual also envisages that regional governments and through them local governments will establish CRGE Facility management committees responsible for the implementation of CRGE programmes. All these measures are designed to make government institutions (federal to regional and local levels) responsive to the demands created by climate change. It is too early to demonstrate whether these changes are reflected in national budget allocations. However, the location of the CRGE Facility within the MoFED holds out promise for a responsive ministry of finance.

4.7.3 Third Institutional Principle for Effective Climate Finance Delivery: Climate change institutions shall be anchored at the local level

At present, little is known about the capacity of the current institutions at the district level to discharge the national climate policy or climate finance delivery mandate. Fieldwork conducted for this study in the two woredas of Yabelo and Mecha (Chapter 7) reveals weaknesses in the current arrangement of climate change institutions at local levels. This is evident in the absence of a district level institution clearly mandated and tasked with the responsibility of taking the lead on climate change.

However, it is expected that the establishment of the Ministry of Environment and Forests will lead to the creation of offices for environment and forests at woreda level, which will help to address the issue of lack of representation of the climate change agenda at the local level. The local government represented by the woreda administration will eventually be responsible for coordinating and overseeing CRGE activities at the local level, but it will take time to build the necessary capacity.

4.8 Conclusions

Ongoing policy development represents a tremendous opportunity to address the deficiencies in the current institutional architecture for climate finance policy and delivery. The institutional arrangements established by the CRGE strategy represent a significant evolution in how government will administer the national response to climate change (which therefore needs to be reflected in the national budgetary system). With the creation of these newly created institutional structures attention now turns to how they will respond to the very considerable implementation challenges that lie ahead.

5 Macroeconomic context and public finance management

Chapter summary

- Ethiopia has experienced steady macroeconomic growth over the four years 2008/9 – 2011/12, although accompanied by high inflation.
- Nominal federal public expenditure has grown steadily, although in the context of rapid GDP growth and high inflation this has not led to a sustained increase in public spending as a share of GDP.
- Public expenditure is increasingly financed by domestic revenue, with a falling contribution from external sources.
- Budget credibility in aggregate is relatively strong, with execution rates of over 90 per cent in the years considered.
- Discretionary expenditure, which could be re-directed to climate-related objectives, has grown substantially faster than non-discretionary wages and interest payments, suggesting increasing room for climate change-related investment.
- Ethiopia's Public Finance Management system has shown improvement over the period 2007 to 2010, according to standardised international assessments.
- Whilst the budget process is well ordered and spending execution well managed, significant amounts of expenditure occur 'off budget', reducing the ability of the federal budget to direct all government spending and contributing to relatively weak oversight and accountability mechanisms.

5.1 Introduction

This chapter presents the macroeconomic and fiscal context for climate change-relevant public expenditure over the years 2008/09-2011/12 (2001-2004 Ethiopian fiscal calendar) before going on to discuss the strength of the public finance management system. Effective action to adapt to, and mitigate climate change, depends on both these things. A robust, sustainable economy will support government's ability to raise and deploy finance for climate change-related activities. Such activities delivered by government also rely on effective government management systems to use that finance. Both these issues will have a bearing on the overall impact of the public sector response to climate change.

The analysis below uses secondary sources of data to review both issues. Government of Ethiopia budget and macroeconomic data are mainly used for the macroeconomic and fiscal analysis, supplemented by data and information from reports of organizations such as the International Monetary Fund and the World Bank, where necessary. Regarding public expenditure, the main data source consulted is the 2010 Public Expenditure and Financial Accountability (PEFA) assessment of the federal government (FDRE, 2010), alongside the earlier 2007 PEFA report (DFC Group, 2007). PEFA assessments are an international approach to assessing the strength of public financial management systems at a high level, through assessment against a number of standardised performance indicators covering the entire public finance cycle.

5.2 Macroeconomic conditions

The key sectors of the Ethiopian economy are agriculture and allied activities, industry, and services. The contributions of these sectors to GDP have remained stable over the four years considered under this study (Table 5.1). The intention of the government's Growth and Transformation Plan (GTP) – the current national development strategy – is to promote structural development in the economy that will increase the contributions of the industrial and services sectors to GDP, alongside a commensurate reduction in the share of agriculture.

Table 5.1: Share of GDP by major industrial classification (%)

Item	2008/9	2009/10	2010/11	2011/12
Agriculture	44	42	45	44
Industry	13	13	11	11
Services	43	45	44	45

Source: MoFED, 2013

Table 5.2: Recent growth rates in GDP by sector (% year-on-year change)

Item	2008/9	2009/10	2010/11	2011/12
Agriculture	7.5	6.4	6.0	4.9
Industry	10.0	9.9	10.2	13.6
Services	16.0	14.0	14.5	11.1

Source: MoFED, 2013

Aside from the ambitions of the GTP, higher growth in contribution to GDP of the services and industry sectors compared to agriculture represents particular challenges and opportunities with regard to climate change. An increasing share of GDP generated from services and industry, with less immediate vulnerability to changes in climate, should increase the economic resilience of Ethiopia in the face of a changing climate. These sectors add higher value than agriculture, raising the prospect of larger tax revenues to support higher public expenditure that could be directed at climate-relevant programmes. However, agriculture still remains a sector that employs the largest proportion of the work force (estimated at more than 80 per cent (MoFED, 2013)). This suggests that while structural change means

an increasing share of GDP that is less directly affected by a changing climate, employment – and particularly rural livelihoods – will remain vulnerable to climate change.

Ethiopia's overall economic growth performance has been ranked as one of the success stories in Africa. In recent years, Ethiopia has been one of the continent's fastest growing non-oil economies, with double digit GDP growth. But its robust growth performance and considerable development gains from 2002 to 2007 came under pressure in 2008 with the emergence of the twin macroeconomic challenges of high inflation and a challenging balance of payments situation, which were exacerbated by high fuel and food prices in the global market. These threats have moderated allowing GDP growth to pick up in 2009/10 and 2010/11, followed by a moderate decline in 2011/12 to 8.5 per cent (Figure 5.3).

Table 5.3: Real GDP Growth rate (percentage change on previous year)

	2008/9	2009/10	2010/11	2011/12
GDP	8.8	12.6	11.2	8.5

Source: MoFED 2013

5.3 Inflation

High and volatile inflation has a negative effect on government expenditure management, including for climate change, as it creates uncertainty in the budgeting process. Under such circumstances, government faces the pressure of having to make budget adjustments to account for rapid changes in purchasing power, creating discrepancies between projected expenditure and actual expenditure. This undermines forward spending plans.

The inflation rate over the 2008-2012 period has been in double digits (except for 2010/2011), in contrast to the expectations of the GTP, which envisaged the general consumer price index (CPI) to grow at a single digit rate. High inflation has been partly attributed to price hikes in the international commodities market but imperfections in the domestic supply system have also contributed. As shown in table 5.4, the Consumer Price Index (CPI) has shown considerable volatility over the period.

Table 5.4: Inflation rate (CPI measure)

	2008/9	2009/10	2010/11	2011/12
Inflation rate	25.3	36.4	2.8	18.1

Source: MOFED (2013a)

In order to address the challenge of inflation, government has pursued tight fiscal and monetary policies alongside a number of measures to reduce supply bottlenecks in the domestic economy. As a result of these efforts, prices have started to stabilize.

In this context of high and volatile inflation, national budget allocations and public expenditure made by the government have grown at very high nominal rates. Importantly, over the period under consideration the increase in budgeted and actual expenditure has generally been slightly higher than inflation. This suggests an overall picture of increasing real public spending, and therefore potentially increased public resources for climate related activities (Table 5.5).

Table 5.5: Inflation and growth in government budget and expenditure (million Birr)

Year	Rate of Inflation (%)	Approved budget	% increase in approved budget (year-on-year)	Actual expenditure	% increase in actual expenditure (year-on-year)
2008/09	25.3	54,277		54,605	
2009/10	36.4	64,508	18.9	71,281	30.5
2010/11	2.8	77,228	19.7	87,058	22.1
2011/12	18.1	117,813	52.6	121,207	39.2

Source: Calculated from MoFED fiscal reports for 2008/09, 2009/10, 2010/11 and 2011/12

The figures show that actual expenditures are consistently higher than the initially approved budget – in some cases significantly so. The gap has usually been covered by a supplementary budget during the year. The relative credibility of the national budget, including for climate-related expenditure, is discussed further below.

5.4 Trends in revenue and spending

The government's current fiscal policy focuses on increasing revenue by the better administration of existing tax policies and using these to increase budgetary expenditures on capital investments and on pro-poor sectors, as set out in the GTP. As shown in Table 5.6, both domestic and total revenue have increased steadily from 2008/09 to 2011/12. Total revenue increased from 52,492 million Birr in 2008/09 to 111,056 million Birr (an increase of 111 per cent) in 2011/12. Domestic revenue increased even more strongly, rising from 31,775 million Birr to 82,279 million Birr over the same period (a 159 per cent increase).

The proportion of the total budget covered by domestic revenue shows an increasing trend over the 4-year period. This indicates that government's budget is increasingly financed by domestic sources. External grants and loans combined represented a broadly declining share of the budget over the period reviewed. This may be positive for climate-related expenditures: if such expenditures are increasingly funded from domestic government revenue they are less vulnerable to the changing external context and the decisions of international actors. As an example, external resources obtained in 2011/12 in the form of grants and loans were 74 per cent of the commitments made by donors, making effective planning of expenditure difficult. The government recognises the need to make more efforts to increase domestic revenue, whilst noting the difficulties in administering taxes that result from the structure of the economy, which is largely dominated by the informal sector and characterized by a high degree of tax avoidance.

Despite the challenges in tax collection, a balance between overall revenue and expenditure has been maintained, with the government's overall budget deficit (including external grants and loans) being less than two percent of GDP (IMF 2013) over the period in question.

Table 5.6: Summary of Actual Revenue and Expenditure (million Birr)

Revenue source	2008/09	2009/10	2010/11	2011/12
Domestic Revenue (Tax and Non-tax)	31,775	43,688 (37.5%)	57,027 (30.5%)	82,279 (44.3%)
External grants	16,130	18,855 (16.9%)	21,433 (13.7%)	16,820 (-27.4%)
External loans	4,587	9,050 (97.3%)	11,451 (26.5%)	11,956 (4.4%)
Total revenue	52,492	71,593 (36.4%)	89,911 (25.6%)	111,056 (23.5%)
Recurrent expenditure	27,372	32,762 (19.7%)	43,245 (32.0%)	66,534 (53.8%)
Capital expenditure	27,232	38,519 (41.4%)	43,812 (13.7%)	54,673 (24.8%)
Total expenditure	54,605	71,281 (30.5%)	87,058 (22.1%)	121,207 (39.2%)

Source: Calculated from MoFED fiscal reports for 2008/09, 2009/10, 2010/11 and 2011/12

Note: Figures in brackets are percentage increases in revenue/expenditure from previous year

5.5 Public Expenditure and GDP

As noted above, the country experienced strong nominal growth in public spending over the 4-year period. This led to a short-term increase in the percentage of GDP accounted for by public expenditure in the middle years of the analysis (Table 5.7), before a return to the same level of 16.4 percent in the final year considered. This suggests that government's overall capacity to spend – and therefore to finance climate change-related activities – has risen and then fallen slightly over the four years in question.

Table 5.7: Total government expenditure as a share of GDP (million Birr)

Year	GDP	Total Expenditure	Total Expenditure as % of GDP
2008/09	332,060	54,605	16.4
2009/10	379,134	71,281	18.8
2010/11	506,079	87,058	17.2
2011/12	736,612	121,207	16.4

Source: Calculated from MoFED fiscal reports for 2008/09, 2009/10, 2010/11 and 2011/12

5.6 Expenditure patterns in the recurrent and capital (development) budgets

Both the capital and recurrent budgets increased over 2008/09 to 2011/12 in nominal terms, as would be expected in a period of high inflation (Table 5.8). Growth in development expenditure might have been driven by the GTPs' commitment to boost infrastructure investment. This nominal growth in the proportion of the capital budget surged in the middle two years, before declining in 20011/12.

The growth of the share of capital budget in the overall budget is likely to be particularly important in tackling the impacts of climate change. Ongoing infrastructure projects such as hydro-power, geothermal and wind farm investments can replace diesel generated power plants, helping to reduce carbon emissions. Infrastructure to increase electricity distribution could potentially reduce the rate of depletion of forest cover. Of course, the effectiveness of such expenditures depends on the management of the funds. Given the likely capital requirements of many key elements of the CRGE strategy, a declining share of the budget spent on capital items may challenge the effectiveness of the response.

Table 5.8: Comparing actual capital and recurrent budgets (Million Birr), 2008/09 -2011/12

Expenditure categories	2008/09	2009/10	2010/11	2011/12
Recurrent budget	27,373	32,762 (19.7%)	43,245 (32.0%)	66,534 (53.8%)
Capital budget	27,232	38,519 (41.4%)	43,812 (13.7%)	54,673 (24.8%)
Total budget	54,605	71,281 (30.5%)	87,058 (22.1%)	121,207 (39.2%)
Proportion (%) of capital to total budget	49.9	54.0	50.3	45.1

Source: Computed from MoFED fiscal reports for 2008/09, 2009/10, 2010/11 and 2011/12

Note: Figures in brackets are percentage increases in expenditure

5.7 Variation of approved and actual expenditures

As noted above, actual expenditures at the end of the financial year often deviate from originally planned budgets. On the one hand, this may show conservative budgeting at the start of the year that is subsequently amended as additional revenues are realised. However, where overall expenditures are consistently less than the adjusted budget, this suggests that government over-estimates expenditure even with in-year budget adjustments. It appears therefore that budget forecasting – both at the start of the year and during the year – represents a continuing challenge for the government.

The recurrent and capital budgets show the same trends, as shown in Table 5.9. Actual recurrent expenditures are 95-98 per cent of the adjusted budget for the four years, whilst actual capital spending for the four years is of the order of 88-93 per cent of the adjusted budget. This differential performance between the two categories is not uncommon. Capital expenditures are often particularly vulnerable to

fluctuation given the inherently 'lumpy' nature of capital projects, and the fact that donors are often involved in providing finance, adding to coordination challenges.

Taken together, this implies that the country has a reasonable level of achievement regarding the credibility of its planned budgets. A credible budget is a positive contributor to effective expenditure management, and would suggest that climate change-related expenditure – as part of general expenditure – has a better chance of being executed as planned.

Table 5.9: Federal Government budget and source of finance (million birr)

Budget	2008/09		2009/10		2010/11		2011/12	
	Adjusted	Actual	Adjusted	Actual	Adjusted	Actual	Adjusted	Actual
Recurrent budget	28,794	27,373 (95.1%)	33,683	32,762 (97.3%)	43,996	43,246 (98.3%)	70,230	66,534 (94.7%)
Capital budget	30,422	27,232 (89.5%)	41,396	38,519 (93.1%)	47,662	43,813 (91.9%)	62,310	54,673 (87.7%)
Total budget	59,216	54,605 (92%)	75,079	71,282 (94.9%)	91,658	87,058 (94.9%)	132,540	121,209 (91.4%)

Source: Calculated from MoFED fiscal reports for 2008/09, 2009/10, 2010/11 and 2011/12

Note: The figures in parentheses are percentages of the actual expenditure out of the adjusted budget, i.e. execution rate

5.8 Growth patterns of 'discretionary' and non-discretionary expenditure

Ethiopia's response to climate change will require significant resources. Whilst international funding may be secured to help meet part of the cost, it is unlikely to be enough to meet all of government's plans. In practice, further prioritization of expenditure to support the strategy may be necessary. Expenditure that can be readily prioritized to meet emerging challenges can be characterized as 'discretionary'. However, defining expenditure as 'discretionary' is a challenge as different observers will see different parts of the national budget as more or less valuable, making it more or less open for re-prioritization. One simple approach categorizes expenditures on wages, salaries and interest payments as non-discretionary, as they cannot easily and immediately be re-prioritized.

The amount of discretionary budget for each the four years considered in this study is much higher than the non-discretionary budget. Expenditure beyond wages and salaries has been growing faster than other categories of expenditure (Table 5.10). As can be seen, wages and salaries make up a small share of GDP – significantly lower than other categories of expenditure – and this share has stayed relatively constant. Separate data from the IMF, calculated on a different basis, suggests that interest payments make up less than two percent of GDP over the period in question (IMF 2013). Taking these two sources together suggests that the non-discretionary budget is relatively low as a share of government expenditure, implying there is scope for prioritizing expenditure towards climate-related activities.

Table 5.10: Discretionary and non-discretionary expenditure (Approved Budget, million Birr)

Item	2008/9	2009/10	2010/11	2011/12
Non-discretionary	6,575 (1.4%)	7,254 (1.9%)	7,636 (1.5%)	10,429 (1.4%)
Wages and salaries	6,575	7,254	7,636	10,429
Discretionary	47,702 (14.4%)	57,254 (15.1%)	69,593 (13.7%)	107,384 (14.6%)
Goods, services, transfers	33,696	37,389	45,337	74,347
Development expenditure	14,006	19,865	24,256	33,037
Total	54,277	64,508	77,228	117,813

Source: Calculated from MOFED reports, 2009, 20010, 2011 and 2012

Figures in parentheses show discretionary vs. non-discretionary spending as a percentage of GDP

5.9 Financial flows from federal government to regional government

Ethiopia is a federal state and offers a significant degree of financial autonomy to the regional governments operating underneath the federal structure. Although the regional states in Ethiopia generate their own revenues, they are highly subsidized by central government. Table 5.11 shows the amount of recurrent and capital subsidies to regional governments. As can be seen, the finance that flowed from central to regional governments in the four years in question contributed 61-68 per cent of the total budget of the regions. This suggests that state governments remain heavily dependent on central government transfers for their operations (an issue that reflects the distribution of capacity as well). Chapter 7 contains case study information on how two local woreda authorities are responding to climate change.

Table 5.11: Local governments budget by source of finance (million Birr)

Budget item	2008/9	2009/10	2010/11	2011/12
Local revenue	8,261	9,835	13,698	20,132
Federal subsidy	17,300	20,512	26,165	30,880
Total budget	25,561	30,347	39,863	51,012
% of federal subsidy	68	68	66	61

Source: Calculated from MOFED data

One of the most critical challenges faced by the regional governments is their low capacity to generate revenue, which they could then spend at their discretion to fund specific priorities, including climate change relevant activities. Given that central government grants are often tied to specific areas, and

these account for a large part of their funding, the fiscal space for local government to re-prioritise expenditures to respond to climate change is limited.

5.10 Effectiveness of public expenditure management

The previous sections have provided an overview of the macroeconomic context and government's fiscal position. These factors impact on the level of resources available for climate change relevant expenditure at a general level. However, the strength of public expenditure systems in managing climate change-relevant funds is also critical in ensuring effective application. Even if adequate funds were available for climate-relevant expenditure, they would be ineffective without strong and efficient public expenditure management systems. This section summarises the strength of the public financial management systems of the federal government to provide an indication as to the effectiveness of the utilisation of climate change-relevant finance. This assessment is relevant to funds that flow through central government systems; it does not cover the handling of funds by local government.

The 2010 PEFA assessment is used as the main source of information for reviewing the performance of the government systems. In comparing the 2007 and 2010 PEFA assessments, improvement can be seen in certain areas, although not in all (Table 5.12). The discussion below highlights particular PEFA areas and relates these to the four principles of climate finance management, set out in the methodology paper applied to this study (Bird et al, 2013).

Table 5.12: PEFA Performance Indicators (2007-2010)[2]

PFM out-turns: Credibility of the Budget		**2007**	**2010**
PI-1	Aggregate expenditure outturn compared to original approved budget	A	B
PI-2	Composition of expenditure outturn compared to original approved budget	D	C
PI-3	Aggregate revenue outturn compared to original approved budget	B	B
PI-4	Stock and monitoring of expenditure payment arrears	A	A
Key cross-cutting issues: Comprehensiveness and transparency			
PI-5	Classification of the budget	B	B
PI-6	Comprehensiveness of information included in budget documentation	B	A
PI-7	Extent of unreported government operations	D+	D+
PI-8	Transparency of inter-governmental fiscal relations	B	B+
PI-9	Oversight of aggregate fiscal risk from other public sector entities	C+	C+
PI-10	Public access to key fiscal information	D	C

Budget Cycle		2007	2010
C.(i) Policy-based budgeting			
PI-11	Orderliness and participation in the annual budget process	A	A
PI-12	Multi-year perspective in fiscal planning, expenditure policy and budgeting	C	C
C.(ii) Predictability and control in Budget Execution			
PI-13	Transparency of taxpayer obligations and liabilities	B	B+
PI-14	Effectiveness of measures for taxpayer registration and tax assessment	C	B
PI-15	Effectiveness in collection of tax payment	NS	NS
PI-16	Predictability in the availability of funds for commitment of expenditures	D+	B
PI-17	Recording and management of cash balances, debt and guarantees	B	B
PI-18	Effectiveness of payroll controls	B+	B+
PI-19	Competition, value for money and controls in procurement	C+	C+
PI-20	Effectiveness of internal controls for non-salary expenditures	C+	B+
PI-21	Effectiveness of internal audit	C+	B+
C.(iii) Accounting, recording and reporting			
PI-22	Timeliness and regularity of accounts reconciliation	B+	B+
PI-23	Availability of information on resources received by service delivery units	(Regional PEFA)	(Regional PEFA)
PI-24	Quality and timeliness of in-year budget reports	C+	B+
PI-25	Quality and timeliness of annual financial statements	C+	C+
C.(iv) External scrutiny and audit			
PI-26	Scope, nature and follow-up of external audit	C+	C+
PI-27	Legislative scrutiny of the annual budget law	D+	D+
PI-28	Legislative scrutiny of external audit reports	C+	C+
D. Donor practices			
D-1	Predictability of direct budget support	C	NS
D-2	Financial information provided by donors for budgeting and reporting on project and programme aid	C	C
D-3	Proportion of aid that is managed by use of national procedures	NS	C

Source: MoFED/EU/IDC Group (2010); MoFED/CIDA/DFC (2007)

5.10.1 First public expenditure principle for effective climate finance delivery: climate change expenditure shall be planned and budgeted for in the national budget formulation process

Climate change-relevant expenditure has not been explicitly recognised with specific coding of expenditure within the national budget. There is now an attempt, as of 2013/14, to identify climate change as a key policy theme within the budget process using a specific code for climate change expenditure. This should make identification and calculation of climate change relevant-expenditure more straightforward in the future.

According to the most recent PEFA study, the annual budget process is well ordered. There is a budget calendar that guides the process accompanied by the timely issue of the budget circular to relevant institutions. The PEFA assessment finds that, as of 2010, budget institutions were beginning to adopt a form of performance based budgeting on a multi-year basis. This multi-year budgeting is strengthened by the operation of a medium-term fiscal and economic framework, although this does not always directly relate to individual sector budgets. In future, programme based budgeting might offer an opportunity to better monitor climate change-relevant activities through the tracking of specific budget programmes, or the development of a cross-government climate change programme within the budget.

Importantly, a significant amount of expenditure is considered as operating 'off budget' through various funds which operate autonomously from regular expenditure systems. These funds are not accounted for or appropriated through the national budget process. The PEFA assessment suggests that as of 2008/9 these funds totaled 11 per cent of GDP, and that the Ministry of Finance did not actively monitor the operations of these funds. This may present a general fiscal risk, and could also reduce the effectiveness of climate change-related expenditure if large amounts of money that relate to climate issues are passing outside the regular planning and budget system.

Recent reviews of Ethiopian expenditure suggest that 'pro-poor' expenditures (defined by government to include among other things health, education, agriculture, roads) have remained 'impressive' (IMF 2013). Given that climate change is expected to affect the poorest most severely, this might suggest that budget planning is effective in biasing expenditure towards the poor, even if not all this expenditure is directly climate change-related.

5.10.2 Second public expenditure principle for effective climate finance delivery: climate change expenditure shall be executed through government systems during the budget year

In terms of overall execution, as noted above, total expenditure execution is relatively high, at over 90 per cent for the years considered, and overall budget deficits relatively low; furthermore the PEFA assessment considers that arrears (another form of budget credibility risk) are well controlled. This suggests that – unless there is some particular bias against it – there would be a relatively high execution rate for climate change-related expenditure as well. With explicit coding of climate change expenditure launched for the current budget year (2013/14), the credibility and execution rates will be easier to track for expenditures made on climate-related activities.

The 2010 PEFA report notes significant improvements in the PFM system with regard to the management of key budgetary processes compared to 2007. Disbursement ceilings are generally issued to expenditure institutions in advance and are broadly respected. In addition, improvements have been made to cash management systems meaning that cash rationing – a problem in many countries – does not appear to be as severe a problem in Ethiopia. Taken together, credible budgets and time horizons for expenditure institutions, as well as regular availability of cash, significantly increases the ability of

budget managers to manage funds effectively. In the absence of any ability to isolate climate-relevant expenditures in these assessments, it can be assumed that this includes funds aiming to deliver climate change-related activities as well.

5.10.3 Third public expenditure principle for effective climate finance delivery: climate change-related expenditure shall be subject to reporting and accounting

The operation of the well-established IBEX system helps ensure timely reconciliation of public expenditures. Information is available to government officers on a daily basis. The ability of budget managers to generate in-year financial reports is described as 'extremely comprehensive', providing a significant amount of up-to-date information on current expenditure, including a break- down of expenditure by institution and by programme. Accurate in-year financial reports are crucial to securing effective management of resources (including for climate change-related activities), particularly if these can be broken down into more detail. However, as noted above there are significant amounts of government expenditure that are managed 'off budget', and therefore do not pass through this system. This fact will therefore reduce the validity of the expenditure reports that only cover on-budget expenditure, and where climate change-related activities involve off-budget expenditure there may be a lack of accurate in-year reporting.

The PEFA reports note ongoing and historical delays in submitting financial statements to the Office of the Auditor General (OFAG). Such delays may negatively impact certain sectors, including those working on climate change, by slowing down assurance that funds have been well-used. The same issue regarding off-budget funds also relates to submission of financial statements to the OFAG – public expenditure, including climate-related expenditure, passing through autonomous agencies is not always collated and reported in the same format or to the same timescale as regular public expenditure.

5.10.4 Fourth public expenditure principle for effective climate finance delivery: climate change-related expenditure shall be subject to external oversight and scrutiny

There are weaknesses in the oversight and scrutiny of public expenditure within the Ethiopian PFM system. Although the audits of the OFAG generally adhere to international auditing standards and focus on significant compliance issues, the scope of audits performed by OFAG for the latest year in the PEFA assessment was only around half of total expenditure by value. Again, the issue of off-budget expenditures remains significant. Furthermore, while audit findings are transmitted to Parliament for consideration, there are no automatic requirements for a management response to identified irregularities. This partial coverage and lack of official follow-up undermines the audit system as a whole, and may weaken expenditure control, including for climate-related expenditure.

Parliamentary involvement in oversight of the budget process appears limited. Budget documentation has improved and contains more information than previously. However, legislative scrutiny of the draft budget law is very limited. While there is an official process for parliamentary review, the time allowed for consideration of the budget is around one month, which is a short time period. Audited financial statements are presented to the Parliament, but as noted above there is not an automatic management response to auditors' findings.

6 Expenditure review

Chapter summary

- Published federal-level Ethiopian budget data are relatively comprehensive and allow for a quantification of expenditure by climate change-relevance. In contrast, little is known about off-budget funds and allocations made by state-level governments.
- Over the 4-year period studied, climate change-relevant expenditure was concentrated in relatively few Ministries and Agencies, with spending predominantly found in two ministries: the Ministry of Water, Irrigation and Energy; and the Ministry of Agriculture.
- Climate change-relevant spending fluctuated between 2008 and 2012; the estimated average annual percentage share of such expenditure over the four years was 15 percent of total government expenditure (representing 1.8 percent of GDP).
- The credibility of budgeted climate change-relevant expenditure appears to be very weak, with execution rates between 25 and 35 percent; this is in contrast to overall government expenditure which shows high execution rates. Further research is required to explain this considerable divergence.
- Climate change-relevant programmes are predominantly of medium relevance, where responding to climate change is a secondary objective of the expenditure. Relatively few programmes of high relevance were identified over the 4-year period, and all of these were in the two main Ministries highlighted above (MoWIE and MoA).
- This country appears to depend mostly upon its own resources for financing public activities designed to address climate change. Government funding on climate change-relevant development expenditures in 2011/12 accounted for 80 percent of the expenditure; donor support accounted for 20 percent.
- Almost all public expenditure is adaptation related, with substantial mitigation expenditure found in only one ministry (MoWIE).
- Donor funding for climate-change related activities is estimated at approximately USD 430 million for the period 2010-17, which remains far below the amount of funding envisaged in the government's CRGE strategy.

6.1 Climate change-relevant public expenditure

Chapters three and four of this report reviewed the policy and institutional context in which the Ethiopian government approaches the management of climate change. The previous chapter covered Ethiopia's economy, focusing on an analysis of trends in macroeconomic performance, public finance and public expenditure management. This chapter takes the analysis to the stage of discussing the nature and quantity of public expenditure that is focused on climate change. The chapter undertakes a close scrutiny of the federal budget to identify climate change-relevant expenditures. Chapter 2 outlined the approach taken in more detail, but in brief the approach has been one of:

- Identifying ministries and agencies involved in climate change relevant activities;

- Identifying climate change-relevant expenditures from these ministry budgets for the period 2008/9 - 2011/12;
- Further classifying such expenditure as being of high, medium or low relevance to climate change;
- Assigning a weight to the high, medium and low relevance expenditures reflecting the percentage of the activity that is considered to be climate change-relevant;
- Classifying the activities as adaptation or mitigation actions.

6.2 Quality of data and sources used in the expenditure analysis

Comprehensive Ethiopian federal government budget data of approved, revised and actual expenditure for the four-year period 2008/9 to 2011/12 (2001 – 2004 Ethiopian calendar) was used as the basis for the analysis. This budget data came from the Ministry of Finance and Economic Development (MoFED).

6.3 Contextual issues about the budget process in Ethiopia

Two important issues regarding the management of public expenditure in Ethiopia need to be acknowledged, as outlined in previous chapters:

- First, Ethiopia operates a federal structure of governance. This analysis of climate change-relevant expenditure covers federal spending only. It does not examine financial transfers made to the regions, or expenditures that the regional governments make using their own locally-generated revenue.
- Second, as raised in the previous chapter, there are substantial extra-budgetary funds in operation in Ethiopia. Such funds are not included in the budget, or in the monthly or quarterly financial reports of the federal government. Examples include the Road Fund, where the revenues and associated expenditures are not appropriated nor incorporated in the government's financial statements, although the operating expenses of the Office of the Road Fund Administration are covered in the budget. Other off-budget funds include very large project investments, such as hydropower dams, geothermal, wind power and railway projects that may have a climate change-relevant dimension, but which are not described in this report due to a lack of comprehensive and comparable data.

Further analysis of sub-national government and off-budget financial information could be considered in future in order to assess the totality of the government's public expenditure on climate change-relevant activities. What is presented in this report should therefore be considered as the likely 'low estimate' of public expenditure going towards climate change actions.

6.4 Treatment of donor grants in the budget

Government financial regulations require the inclusion of all donor funds in the budget and in reported expenditures. In practice however, 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 adopted. There are three channels through which external donor grants are disbursed:

- The first channel follows the normal government financial channels and these funds are fully captured in the budget.

- The second channel is where funds are disbursed by donors 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 MoFED.
- Donor grants disbursed through the third channel, where funds are disbursed directly by donors to projects and programmes operating outside government structures, are very difficult to capture.

This study's analysis of budget data considers spending by donors that is included within the national budget through channels one and two. Additional discussion of donor support pledged in the future is considered at the end of this chapter.

6.5 Identifying ministries with climate change-relevant activities

The study team relied heavily on Ethiopia's Climate Resilient Green Economy Strategy that was developed in 2011 to identify which ministries and institutions are involved in activities that have an impact on climate change. As described in chapter 2, the following ministries and institutions were identified and prioritized for the public expenditure analysis:

1. Ministry of Agriculture
2. Ministry of Water, Irrigation and Energy
3. Ministry of Transport
4. Ministry of Urban Development and Housing Construction
5. Ministry of Health
6. Former Environmental Protection Authority (now Ministry of Environment and Forests)
7. Ethiopian Development Research Institute
8. Ministry of Finance and Economic Development
9. Ministry of Industry
10. Former National Disaster Prevention and Rehabilitation (now Disaster Risk Management and Food Security Sector of the Ministry of Agriculture)

Not all of these institutions are full ministries. For example, the Environmental Protection Authority was functionally structured under the Ministry of Agriculture before it became a ministry in 2013, and all its budgets were classified under the Ministry of Agriculture, although these were identified separately in the budget data available. Likewise, the Ethiopian Development Research Institute is functionally structured under the MoFED.

6.6 Overall magnitude of spending on climate change-relevant activities

Total spending on climate change-relevant activities has grown relatively strongly in cash terms over the four year period under review, although this should be considered alongside high and volatile inflation, as discussed in the previous chapter[4]. Table 6.1 shows the growth in climate and non-climate related expenditure in comparison to prevailing inflation in order to give a sense of the real purchasing value of the expenditure. Climate change-relevant expenditure increased over the 4-year period, growing most strongly in 2009/10. The strong growth registered in that year is due to a large investment made by the Government on road construction, which is considered a climate change relevant activity.

[4] In the following tables, minor addition and subtraction discrepancies are due to the rounding of numbers to the nearest integer to ease presentation.

Table 6.1: Growth in climate change relevant expenditure vs. non-climate expenditure (million Birr) [5]

Budget year	Rate of Inflation (%)	Climate change relevant expenditure	Increase from previous year (%)	Non-climate relevant expenditure	Increase from previous year (%)
2008/09	25.3	5,945		31,360	
2009/10	36.4	10,263	72.6	40,507	29.2
2010/11	2.8	8,409	-18.1	51,080	26.1
2011/12	18.1	9,970	18.6	80,358	57.3

Comparison of the growth in climate change-relevant expenditure compared to total government expenditure shows that the percentage share of climate change-relevant expenditure grew strongly in 2009/10 before falling back sharply in 2011/12 (Table 6.2). The average annual percentage share of climate change-relevant expenditure over the four years was 15 percent of total government expenditure. Although climate change-relevant expenditure grew over the period under review, overall it grew less strongly than total government expenditure, resulting in a lower share of expenditure by the end of the period.

Table 6.2: Climate change relevant expenditure as a share of government expenditure (million Birr)

Budget year	Total government expenditure	Total climate relevant expenditure	Climate relevant expenditure as % of government expenditure
2008/09	37,305	5,945	15.9
2009/10	50,770	10,263	20.2
2010/11	59,489	8,409	14.1
2011/12	90,328	9,970	11.0

Comparison of climate change-relevant expenditure with GDP shows the same trend: whilst such expenditure grew over the four year period, this growth did not fully keep pace with the expansion in GDP (Table 6.3). In line with expenditure on climate change-related activities as a percentage of government spending, climate change-related expenditures as a share of GDP increased substantially in 2009/10 before falling back in the two following years.

[5] For this, and subsequent tables, the sources for macroeconomic and overall public spending data are various MoFED macroeconomic and fiscal reports for the years considered as outlined in the references; climate change-relevant calculations are the authors' own, drawn from MoFED fiscal and budget data based on the methodology outlined in chapter 2.

Table 6.3: Climate change relevant expenditure as a percentage of GDP (million Birr)

Budget year	GDP	Total climate relevant expenditure	% of climate relevant expenditure from GDP
2008/09	404,437	5,945	1.5
2009/10	455,196	10,263	2.3
2010/11	506,079	8,409	1.7
2011/12	548,922	9,970	1.8

Ethiopia's CRGE strategy foresees expenditure of USD 150 billion as being necessary over the next 20 years to build a green economy. The strategy therefore requires an average budget expenditure of USD 7.5 billion a year – a very significant amount in the context of the Ethiopian economy. Compared to this expectation, over the past four years budget expenditure has been small: at approximately USD 440 million per year. Therefore, if the strategy is to be delivered, much more effort needs to be exerted to mobilize additional resources both domestically and externally to increase national expenditures on climate change.

It is important to note that the small percentage of climate change-relevant expenditure to GDP may in part be due to the coverage of only the federal government budget. As noted above, sub-national government expenditures on such activities both from their development and recurrent budgets and other climate change activities financed from extra budgetary sources have not been included in this analysis because of lack of access to reliable data. This means that the figures presented above represent a 'low end' estimate for total expenditure on climate change-relevant activities.

One key observation emerging from the review of the 4-year period is that budgeted and actual expenditure related to climate change has poor credibility. As shown in Table 6.4, the approved budget is a poor predicator of actual expenditure. This is a significant finding given the discussion in the previous chapter, which showed very high rates of budget execution at an aggregate level.

Table 6.4: Budgeted vs outturn for climate change relevant expenditure (million Birr)

Budget year	Budgeted climate change relevant expenditure	Outturn climate change relevant expenditure	Variance in cash terms	Variance as a percentage
2008/09	19,678	5,945	13,733	30.2
2009/10	28,955	10,263	18,692	35.4
2010/11	29,941	8,409	21,532	28.1
2011/12	39,399	9,970	29,429	25.3

Whilst there are a number of cases where individual spending lines featured actual expenditure that far exceeded the approved budget, in most cases budgets were significantly under-spent. The existence of extra budgetary funds further weakens this poor budget credibility since the national budget approved by the parliament is already not comprehensive. This suggests that for reasons that cannot be readily explained, climate change-relevant expenditure is concentrated in areas of spending with low budget credibility. Further investigation into specific budget lines might yield an answer as to why this is the case.

6.7 Climate change relevant expenditure by Ministry

This section presents an analysis of climate change-relevant programmes and projects by Ministry over the period under review. As noted above, several Ministries and agencies were identified as being involved in implementing such programmes and projects. For these institutions, each expenditure line was examined for its relevance to climate change, and the associated programmes and projects were identified for analysis.

Climate change relevant expenditures were heavily concentrated in two Ministries over the period reviewed (Table 6.5). For example, the Ministry of Agriculture (MoA) and the Ministry of Water, Irrigation and Energy (MoWIE) hosted approximately 75 percent of the total climate change relevant programmes in 2011/12, followed by the Ministry of Health, the Environmental Protection Authority, and the Ministry of Urban Development and Housing Construction, all of which contained far fewer programmes and projects. No relevant programmes were identified in the Ministry of Transport over the 4-year period.

Table 6.5: Climate change relevant programmes by Ministry

Ministry	2008/09	2009/10	2010/11	2011/12
MoWIE	45	37	37	47
MoA	46	44	40	43
MoH	9	8	9	10
EPA	0	2	2	8
MoUDHC	13	10	11	7
NDP	3	2	2	1
MoI	2	2	2	2
MoFED	3	2	2	2
Total	**121**	**107**	**105**	**120**

This trend of concentration in two Ministries is even more pronounced when climate change-relevant expenditures are reviewed as a percentage of total ministry expenditure (Table 6.6). For the MoA and

MoWIE this type of expenditure forms a significant share of total expenditure. In no other Ministry does climate change-relevant expenditure approach these levels. The decline in relevant expenditure by the MoWIE (where these expenditures as a percentage of the ministry's budget declined from 59 per cent in 2008/09 to 35 per cent in 2011/12) is most likely explained by the timing of major development investments over this short time period.

Table 6.6: Climate change relevant expenditure by Ministry (million Birr)

	2008/09			2009/10			2010/11			2011/12		
	Total spend	cc-relevant spend	cc-relevant %	Total spend	cc-relevant spend	cc-relevant as %	Total spend	cc-relevant spend	cc-relevant as %	Total spend	cc-relevant spend	cc-relevant as %
MoA	7,979	3,187	40	10,592	5,681	54	7,113	3,540	50	11,365	4,823	42
EPA	5	0	0	6	3	50	11	11	100	120	48	40
MoWIE	3,149	1,849	59	3,847	3,153	82	5,218	2,783	80	7,458	2,578	35
MoUDC	8,992	880	10	13,712	1,344	10	16,022	1,904	12	23,431	2,243	10
MoH	3,546	20	1	3,822	68	2	5,376	163	3	4,095	256	6
MoI	207	4	2	111	7	7	282	5	2	503	5	1
NDP	20	4	19	560	3	1	13	4	28	17	5	26
MoFED	125	1	1	374	3	1	686	0	0	777	13	2
Total	24,023	5,945	25	33,024	10,263	31	34,721	8,409	24	47,766	9,970	21

6.8 Climate change relevant expenditures by relevance

A review of climate change-relevant expenditures by level of relevance (high, medium and low) shows that medium relevant expenditures dominate the pattern of expenditures over the four years. This is consistent with the 5-year Growth and Transformation Plan (GTP), currently under implementation, which focuses investment in agriculture and infrastructure development such as renewable energy generation (hydropower, geothermal, wind farm, biogas distribution) to ensure food security and the promotion of industrial growth. A large number of medium relevance projects is therefore consistent with a government spending prioritisation plan that focuses on economic development, whilst taking climate change into consideration.

All high relevant projects are hosted within the MoA and MoWIE and include irrigation projects, dry land management programmes, and development projects designed to promote renewable energy and energy efficiency. As can be seen from Table 6.7, a large number of the programmes/projects classified as highly relevant to climate change mitigation and adaptation were implemented in the last year (2011/12), suggesting increased government awareness on the importance of tackling the effects of climate change directly as a result of the launching of the CRGE strategy (although this increase is not reflected in expenditure, as shown in Table 6.8).

Table 6.7: Climate change relevant programmes by Ministry and relevance category

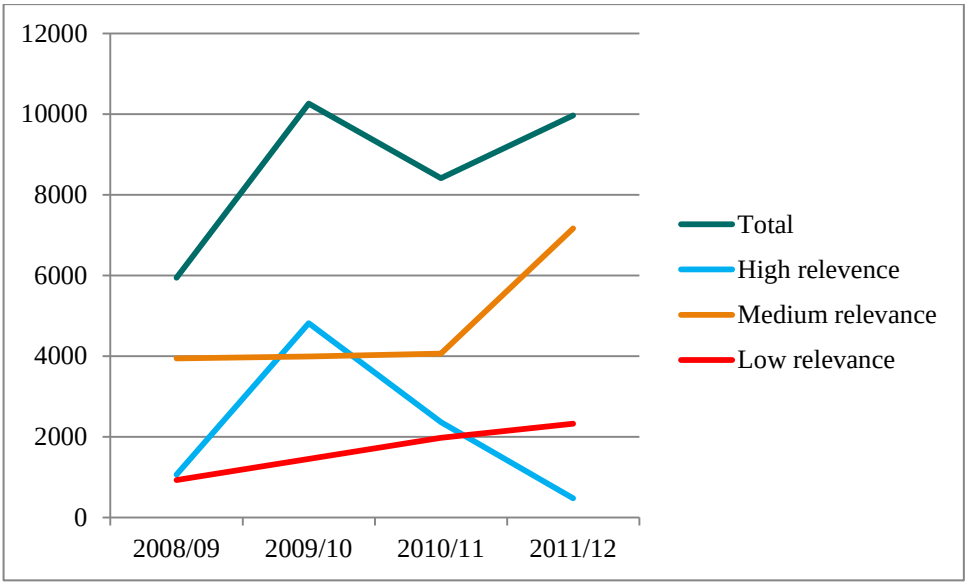
	2008/09			2009/10			2010/11			2011/12		
	High	Medium	Low	High	Medium	Low	High	Medium	Low	High	Medium	Low
MoWIE	13	30	2	9	27	1	13	23	1	16	30	1
MoA	4	26	16	4	25	17	4	21	17	14	19	18
MoH	0	2	7	0	2	6	0	2	7	0	3	7
NDP	0	3	0	0	2	0	0	2	0	0	1	0
MoUDHC	0	0	13	0	0	10	0	1	10	0	1	6
MoI	0	0	2	0	0	2	0	0	2	0	0	2
MoFED	0	0	3	0	0	2	0	0	2	0	0	2
Total	17	61	43	13	56	38	17	49	39	30	54	36

Table 6.8 presents a summary of total climate change-relevant expenditure by classification (high, medium and low). Looking into the total magnitude of the expenditure over the years under review, the expenditure shows a high concentration on medium relevant climate change programmes/projects, except for 2009/10 where the balance is relatively even between high and medium relevance (Figure 6.1). Medium relevant climate change expenditures account for just over half (56 percent) of the total climate change expenditure over the 4-year period, followed by high relevant climate change expenditures with 25 percent share of total expenditure. Low relevant climate change activities expenditure accounts for 19 percent of spending.

Table 6.8: Expenditure by high, medium and low relevance in cash terms (million Birr)

	2008/09				2009/10				2010/11				2011/12			
	High	Med.	Low	Total	High	Med.	Low	Total	High	Med.	Low	Total	High	Med.	Low	Total
MoA	44	3,114	28	3,186	2,856	2,775	53	5,684	1,037	2,459	53	3,549	424	4,396	51	4,870
MoWIE	1,023	822	3	1,848	1,959	1,193	1	3,153	1,329	1,443	6	2,777	55	2,521	2	2,577
MoUDHC	0	0	880	880	0	0	1,344	1,344	0	0	1,904	1,904	0	1	2,241	2,243
MoH	0	4	16	20	0	22	46	68		154	9	163	0	242	14	256
MoFED	0	0	1	1	0	0	3	3	0	0	0	0	0	0	13	13
NDP	0	4	0	4	0	3	0	3	0	4	0	4	0	5	0	5
MoI	0	0	4	4	0	0	7	7	0	0	5	5	0	0	4	4
Total	1,067	3,944	932	5,945	4,815	3,993	1,455	10,263	2,366	4,059	1,977	8,409	479	7,164	2,326	9,970

Figure 6.1: Expenditure by high, medium and low relevance in cash terms (million Birr)



6.9 Development and Recurrent expenditure

As is common practice in public expenditure systems, the Ethiopian budget comprises development and recurrent budgets. The development budget, sometimes called the capital budget, is expenditure intended to finance an asset that has a lasting economic impact. The recurrent budget is, on the other

hand, intended to finance short-term expenditures, such as salaries and office running expenses, which do not have a long-term economic impact.

A review of climate change-relevant expenditure by ministries over the period under review suggests that ministries overwhelmingly funded their climate change-relevant activities using development expenditure (Table 6.9). With the exceptions of MoFED and NDP, over 90 percent of climate change relevant expenditure within the key ministries is funded from the development budget over the years under review.

Table 6.9: percentage of climate change-relevant expenditure classified as recurrent or development by Ministry, 2008/9-2011/12

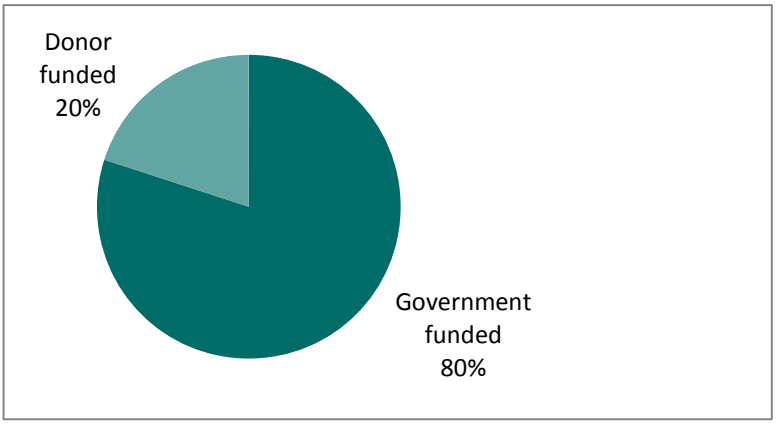
	2008/9		2009/10		2010/11		2011/12	
	% CC spend Develop.	% CC spend Recurrent	% CC spend Develop.	% CC spend Recurrent	% CC spend Develop.	% CC spend Recurrent	% CC spend Develop.	% CC spend Recurrent
MoA	99.0	1.0	99.5	0.5	99.4	0.6	91.8	8.2
MoWIE	99.3	0.7	99.6	0.4	99.5	0.5	99.0	1.0
MoI	94.4	0.6	97.2	2.8	94.2	5.8	89.4	10.6
MoUDHC	99.2	0.8	99.5	0.5	99.6	0.4	99.5	0.5
MoH	89.7	10.3	98.8	1.2	99.6	0.4	99.7	0.3
MoFED	0	100	0	100	0	100	0	100
NDP	0	100	0	100	0	100	0	100

6.10 Source of funding for climate change actions

The Ethiopian Government budget system also allows the development (but not recurrent) budget to be disaggregated by source of funding, distinguishing between government and donors. Applying this to climate change-relevant development expenditure provides an indication as to the balance between donor assistance and government resources being used to finance climate change-relevant expenditure. The analysis is based on 2011/12 data provided from MoFED and an extrapolation made by the study team. As a result, the findings need to be cautiously interpreted, and cover only one year.

On-budget government funding for climate change-relevant development expenditures in 2011/12 accounted for 80 percent of the expenditure; donor support accounted for 20 percent (Figure 6.2). This analysis suggests that the country is actively deploying a considerable amount of its own resources for financing public activities designed to address climate change. This may have a positive consequence regarding the nature of the public response to climate change. A large share of climate change-relevant funding coming from government sources would allow government to amend and redirect expenditures to priority areas more quickly and flexibly than if the funding was provided by external partners.

Figure 6.2: Source of funding (government and donors) for budgeted climate-relevant development expenditure, 2011/12

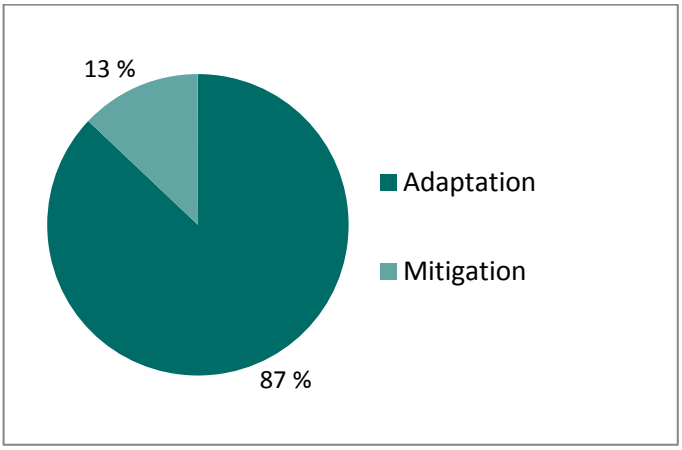


6.11 Adaptation and mitigation spending

Climate change-relevant expenditures have also been classified as adaptation or mitigation spending for the years under review, in line with the study methodology (chapter 2). This classification relates to the intended impacts of the activities being undertaken. Those expenditures that fund activities designed to reduce the emissions of greenhouse gases or act as carbon sinks are classified as mitigation, such as renewable energy programmes and reforestation initiatives. Those expenditures that fund actions aimed at reducing the impact of changes in the climate are considered adaptation, and include activities such as small scale irrigation, early warning systems and efforts to improve food security.

Significantly higher spending was made on adaptation (87 percent) compared to mitigation activities (13 percent) over the 4-year period, 2008/9 – 2011/12 (Figure 6.3). This is to be expected, as Ethiopia's carbon emissions are at very low levels compared to many other countries (chapter 3).

Figure 6.3: Proportion of adaptation and mitigation expenditure over the 4-year period, 2008/9 – 2011/12



Mitigation spending is confined to two ministries: MoWIE and MoA. Only in the former ministry is there a significant level of expenditure, associated with the development of renewable energy.

6.12 Donor climate change-related funding

Ethiopia receives considerable Official Development Assistance (ODA) and other financial flows from donors, estimated at over USD 3.5 billion in 2011. MoFED's aid management system holds data on donor funding for on-going projects, pipeline projects and pledges made to various sectors in Ethiopia. This list of projects was reviewed to identify those that might be relevant to climate change. In terms of total funding, the value of ongoing projects related to climate change is USD 393 million, with USD 19 million in the pipeline (i.e. agreed but not commenced) and an additional USD 20 million pledged in forthcoming projects.

Some of these projects are ongoing at the present time, and are included in the analysis above, whereas others have yet to start. Looking forward, according to these data donor funding represents a significant amount of funding for climate-related activity, and could go some way to reducing the gap between the expectations of the CRGE strategy's funding ambitions and available financing. However, as noted above, budget credibility in the area of climate change is currently weak, with budgeted amounts having only a partial relationship with actual outturns.

Table 6.10: Ongoing projects, Pipeline projects and financial pledges related to Climate Change in Ethiopia

No.	Project Name	Duration	Financial Support (USD million)	Contributing Countries and institutions
1	**Ongoing projects**			
	Ashegoda wind Energy project	2009-ongoing	66.54	France
	Sustainable land management program	2013-2015	50.00	Norway
	Scaling up Renewable Energy Projects in Low Income Countries (SREP)	2013-2017	50.00	WB and ADB
	Natural resource management capacity including community-based watershed development (MERET PLUS)	2012-2015	35.00	WFP
	Strategic Climate Institutions Program (SCIP)	2011-2014	32.68	UK
	Sustainable Land Management	2011-ongoing	19.75	CIDA Canada
	Ethiopia Global Climate Change Alliance: Building National Capacity and Knowledge on Climate Change Resilient Actions	2011-2013	19.46	EU
	Community based integrated natural resources management project	2011-2015	19.37	IFAD
	Forest Preservation Program	2010-	18.79	JICA Japan
	Global Climate Change Alliance-Ethiopia	2011-2015	17.96	EU
	CRGE Program Support	2012-2014	10.00	UNDP
	REDD+ RPP implementation support	2012-2015	10.00	UK and Norway
	Scaling up of participatory forest management (PFM)	2009-2014	8.87	EU

	Oromia REDD+ pilot program	2013-2015	8.00	Norway
	African Adaptation Programme – Supporting Climate Resilient Sustainable Development in Ethiopia	2010-2012	6.49	Japan
	Increasing access to sustainable energy and reduced greenhouse gases emissions in rural areas through the use of renewable energy and energy efficiency	2012-2013	5.30	Norway
	GEF grant to community based integrated natural resource management project (CBINRMP)	2008-2017	4.40	IFAD
	Reducing Emission from Deforestation and Forest Degradation (REDD)	2012-2015	3.40	World Bank
	Climate Change and Environmental Sustainability	2010-2014	2.65	UNDP
	Afar Integrated Dry Land Management Project	2010-2012	1.59	Norway
	Fund for CRGE Facility Responsive Window-capacity building	2012-2013	0.95	Austria
	Strengthening capacity for climate change adaptation in land and water management	2011-2013	0.55	FAO
	Climate Change and Development – Adapting by Reducing Vulnerability (CC DARE)	2010-2011	0.45	Denmark
	Enabling Pastoral Communities to Adapt to Climate Change and Restoring Rangeland Environment	2010-2013	0.41	Spain
	Total on-going		392.61	
2	**Pipeline project (projects agreed upon but not commenced)**			
	Biodiversity Focal Area	2010-2015	8.13	GEF
	Climate Change Focal area	2010-2015	6.59	GEF
	Degradation Focal Area	2010-2015	4.29	GEF
	Total pipeline		19.01	
3	**Resources pledged by Development Partners**			
	Climate change adaptation project	2013-2016	10.00	Adaptation fund
	Promoting Autonomous Adaptation at the Community Level in Ethiopia	To be determined	5.00	GEF
	Advisory service support to the CRGE Facility	2013-2015	5.00	Norway through the WB
	Total pledges		**20.00**	

Source: MoFED

6.13 Conclusion

The expenditure analysis has considered the place of climate change-relevant expenditure within the federal government budget. Overall, climate change-relevant expenditure is a significant minority of total expenditure, being between 11 and 20 per cent of total government spending. This share has been volatile over the 4-year period, declining from a peak in 2009/10 to a low on 2011/12 – the last year of this study – with non-climate relevant expenditure across government increasing more quickly. High nominal growth focused on climate change activities needs to be considered alongside high inflation.

In all years, total expenditure remains substantially below that expected in the CRGE strategy. Furthermore, climate change-relevant expenditure budgets also lack credibility – less than half of the amount budgeted for such activities were actually expended in each of the four years in question. This is striking given the strong level of aggregate credibility across total expenditure in the federal budget.

Climate change-related expenditure is heavily concentrated in two Ministries – the Ministry of Water, Irrigation and Energy and the Ministry of Agriculture – and only these two ministries contain high relevance projects. Spending on climate-related activities within these ministries shows a corresponding level of volatility over the years considered. Other ministries comprise a relatively small amount of total climate-related expenditure. Almost all public expenditure is adaptation related, with substantial mitigation expenditure found in only one ministry, the Ministry of Water, Irrigation and Energy.

Donor funding for climate-related projects is expected to be significant over the period 2010 to 2017, although given credibility concerns over existing climate-related expenditure the challenge will be for the government to access and deliver on this spending in an effective manner.

7 Sub-national analysis

Chapter summary

- Financial resources at woreda level come mainly from federal transfers through the regions.
- Local government activity planning, and corresponding budgeting, is done to comply with GTP targets, following a framework plan determined at federal and regional levels. At the woreda level there is little flexibility, if any, to include additional activities beyond this framework.
- There is no representation of the Environmental Protection Authority (EPA), the federal office responsible for climate change, at the woreda level. Whereas this may change with the recent establishment of the Ministry of Environment and Forests (MEF), reflection of this new structure at the local level will take time, particularly given the current human and financial resources available in the woredas.
- Woreda sector offices are currently understaffed and with limited access to resources for complying with their basic obligations.
- The causes, impacts and possible responses to climate change are poorly understood amongst district government officials. However, there are a pool of activities that are relevant to the response to climate change, such as early warning systems for floods and diversification of income sources.
- Budget information at woreda level does not allow for the identification of programmes and projects. When analyzing available budget categories, most of the federal transfer to woredas is used to cover administrative running costs, such as salaries. There are very limited budgetary resources to fund implementation of public activities, which therefore depend on support from NGOs and unpaid labour from local communities.

7.1 Introduction

A country's ability to respond to climate change and its effects depends in large part on the capacity of local governments to undertake mitigation and adaptation activities. Without such activities, national governments will not be able to comply with their international commitments (UN-Habitat, 2011). Local governments therefore have a critical role to play in the implementation of climate change initiatives within the framework of national climate change policy. This chapter examines the Ethiopian district level government, the woreda, to illustrate climate finance delivery at the sub-national level.

Woredas are a democratic local government structure, in charge of local planning and the provision of public services. There are 600 rural woredas and 100 urban woredas in Ethiopia. The analysis of how much funding reaches the woreda level and how much of it is climate change-related can provide evidence of the linkages between national planning on climate change and local planning and implementation.

This study's analysis at sub-national level was conducted in two districts, Yabelo and Mecha. These woredas were selected to provide evidence of climate finance delivery at the local level, but are not intended to be a representative sample of local governments in Ethiopia. They provide insights into what may be happening with regard to climate change finance at the local level, which can supply evidence for a more inclusive national climate change policy.

The methodology used combined a mix of qualitative and quantitative methods: a review of climate change-relevant sector offices' annual-work plans and performance reports; semi-structured interviews and focus group discussions with woreda officers[6]; as well as semi-structure interviews with NGO representatives with working relationships with climate change-related sector offices[7] on their understanding and perceptions of climate change; a mapping of financial sources for climate change related activities; and the tagging of climate change-relevant expenditures in local budget documentation.

7.2 The case studies: Yabelo and Mecha

Yabelo woreda is located in the southern lowlands of the Oromia region, 560 km south of Ethiopia's capital city Addis Ababa, whereas Mecha woreda is located in the highlands of the West Gojam zone in the Amhara region, 525 km north-west of Addis Ababa and 34 km south-east of Bahir Dar, the capital city of Amhara region. Yabelo is predominantly a pastoralist area, with 60 % of pasture land, whereas in Mecha, rain-fed agriculture is the major economic activity and source of livelihood of the population.

The selection of the woredas was based on availability of information. The Climate Science Centre of the University of Addis Ababa had previous experience of working on climate change studies in both Yabelo and Mecha jurisdictions; hence contacts were readily available for accessing public officials and data. Vulnerability to climate change was also a criterion for selection, as both woredas are perceived as highly vulnerable. In Yabelo, changes in precipitation patterns have affected water sources for cattle and human consumption, affecting food security; and in Mecha it has affected crop productivity. Both woredas are vulnerable to droughts and flash floods.

According to the Ethiopian Central Statistical Agency, the estimated population of Yabelo in 2007 was 102,385 (CSA, 2008). Yabelo has an estimated population density of 15 people per km^2 (only 17.1% are considered urban dwellers). The woreda has an estimated area of 5,523 km^2 and the altitude ranges from 350 to 1,800 meters above sea level. The climate is arid to semi-arid, receiving annual rainfall of between 240 and 900 mm. Of its total area, 10% is arable, 60% is pasture and 10% is forest. The remaining 20% is considered unusable land. Water shortage is a serious problem as there are no rivers or streams regularly draining the area. Livestock production is the main livelihood in Yabelo. Cattle constitute the dominant type of livestock although pastoralists also keep goats and camels. Crop production has been recently introduced as an alternative livelihood and is expanding. The main crops cultivated include *teff*, wheat, corn, haricot bean, sorghum and barley. The woreda has been repeatedly hit by droughts and flash floods, affecting the social and economic wellbeing of Yabelo's population. The

[6] Interviews were held with heads and employees of five sector offices in Yabelo woreda (Pastoral Development; Preparedness and Prevention; Rural Land and Environmental Protection; Finance and Economic Development; and Water, Mines and Energy) and four sector offices in Mecha woreda (Agriculture and Rural Development; Land Management and Environmental Protection; Water and Mines; and Finance and Economic Development). Interviews were also conducted with woreda administrations.

[7] Three NGOs in Yabelo Woreda (SOS Sahel Ethiopia, Gayo Pastoral Development Initiative and CARE International) and two project local coordination units in Mecha Woreda ('Tana & Beles Water Resources Development Project' and the 'Community-Based Integrated Natural Resource Management in Lake Tana Watershed' project) were interviewed.

frequency and intensity of droughts appear to be increasing and have thus become a serious livelihood challenge. Changes in rainfall patterns undermine crop and livestock production, exposing local communities to food shortages and increasing the risks of forced migration and conflict over water and pasture land.

In Mecha, the estimated population in 2007 was 292,250 (CSA, 2008). Located in the north-western highlands of Ethiopia, the altitude varies between 1,900 and 3,200 meters above sea level. The climate is sub-tropical with the mean annual rainfall ranging from 1,200 to 2,000 mm. Agriculture is the major economic activity and livelihood, characterized by mixed crop and livestock production. Wheat, barley, millet, *teff*, maize and potato are the main crops. Land degradation and water shortages are major problems. In particular, rainfall variability poses a serious challenge to the rain-fed system, leading to increased vulnerability to food shortage and reduced agricultural income. In response, the government has recently introduced small-scale irrigation to help smallholder farmers overcome water shortage and increase agricultural productivity.

7.3 Political and financial decentralisation in Ethiopia

Throughout much of Ethiopia's history a centralized system of government dominated the political landscape. This was changed when a federal structure was established in 1995 following the adoption of the Constitution of the Federal Democratic Republic of Ethiopia (FDRE). The FDRE comprises nine regional states and two autonomous city administrations. Currently, Ethiopia has five tiers of government: federal, regional-state, zone, woreda and kebele. As part of the decentralization process of the administrative structure, democratically elected councils have been established since 1995 at most levels, except for the zones.

According to Article 51 of the FDRE Constitution, the duties of the Federal government include formulating and implementing national policies, strategies and plans aimed at promoting the social and economic development of the country (FDRE, 1995). As a federal State, the Regional Councils are vested with legislative, executive and judicial powers to govern the internal affairs of the region with government activities and services organized into sector departments, known as bureaus. Within regions, Zone Administrations supervise all woreda activities, including the implementation of government policies and programs, based on woreda annual plans and budgets. Woredas review and approve kebeles' work plans every year and integrate them into woreda plans.

The federal budget is allocated to regions depending on population size, revenue collection capacity and capacity to use the budget effectively. In the 2006 Ethiopian Calendar fiscal year (2012-2013) 37.5% of the federal budget was allocated to the regions (Ethiopian Business Review, 2013). The larger regions – Oromiya; Amhara; and Southern Nations, Nationalities and People – were allocated 32.5%, 23.3% and 19.9% of this share. Sixty percent of the regional block grant is then allocated to woredas through the Zones, based on similar criteria. Performance in the previous year is also taken into account. This results in a highly varied allocation among woredas. For example, the difference between Yabelo and Mecha is significant: from 35 million Birr in Yabelo to 90 million Birr in Mecha. Woredas can also mobilize revenues locally to meet their expenditure requirements, though their revenue base is very limited. Regional guidelines establish that woredas allocate 6% of their block grant to capital investments, though regions are often responsible for undertaking capital investments that benefit woredas.

The 5-year Growth and Transformation Plan (GTP) provides the framework for the regions to design their own plans taking into account national targets (MoFED, 2010). Regions develop their policies to support national targets and these are translated into actions through a series of plans that are later distributed to zones and then to woredas. At the woreda level, each sector office is required to prepare an annual activity plan, called the physical plan, and a financial plan describing the budget required. The woreda's office of Finance and Economic Development (WoFED) coordinates the preparation of sector plans and provides the checklist of activities received from the Regional state, derived from the GTP. The WoFED submits the plans to the woreda administration for approval by the woreda cabinet. Monitoring is also conducted quarterly by the WoFED.

At a first glance, the planning process within the woreda appears 'bottom-up' since each sector office prepares its own annual plan. Planning ideas are gathered from the local community, with interviewed officials in both woredas claiming that the planning, particularly the identification and prioritization of activities, is carried out with participation of the local community. However, the sector offices plan to a framework containing mandatory activities for each sector that are derived from the GTP targets. Particular focus is given to the activities of poverty reducing sectors.

At the federal level, the Environmental Protection Authority (EPA) is the national focal point for climate change and the CRGE Strategy coordinator. This coordination is meant to trickle down through a Sector Reduction Mechanism (SRM) into Sector Investment Plans in each sector. However, the EPA is an authority without an institutional structure at the woreda level. No evidence was found during the present study that funding is channelled for climate change related activities from the EPA to Yabelo or Mecha woredas. Whereas the recent creation of the Ministry of Environment and Forests (MEF) may change this, institutional change will take time. Nevertheless, woreda plans usually contain activities that can be considered as related to climate change within various sectors.

The Climate Resilient and Green Economy Strategy (CRGE) is linked to the Growth and Transformation Plan (GTP), with the implementation of the former designed to contribute to the GTP goals (chapter 3). However, in both Yabelo and Mecha, key national climate change strategies such as the CRGE, NAPA and NAMA are not known to woreda sector heads and experts. In contrast, the GTP is well known and used as a mandatory planning framework for all public activities in the woredas. Approval of the woreda budget by the Zonal and Regional administrations considers consistency of the planned activities with the GTP.

7.4 Institutional framework for sub-national climate finance delivery

7.4.1 The Woreda administrative structure

The woreda structure can be divided in two dimensions, administration and technical. The general coordination and oversight of the woreda is done by the Administration Office, including the overall control of the planning and budget processes. The Administration retains a budget to run administrative functions such as salaries for support staff and office maintenance. The administrative structure receives support from the office of Finance and Economics Development (WoFED), which plays a key role in the allocation of woreda budgets, guided by the GTP. The Administrator chairs all meetings attended by woreda cabinet members, who are in charge of the approval of policies and budgets.

The technical dimension of the local government structure is relevant to climate change as it defines the mandates and roles that would support climate change implementation at the sub-national level. As at the federal level, different sectors are prioritised following the GTP. Six sectors: education; health; rural

roads; micro-credit; pastoral/agriculture development; and water, mines and energy have been identified as pillars for poverty reduction efforts and identified as priority areas for the allocation of the woreda budget. None of these sectors have been given a specific mandate to deal with climate change issues at the woreda level. For the purpose of this study, the following sector offices were considered as being climate change-relevant: (a) the pastoral development /agriculture and rural development office (PDO/ARDO); (b) the land management and environmental protection office (LMEPO); (c) the water, mines and energy office (WMEO); and (d) the disaster and prevention office (DPPO).

The technical capacity of the woreda administration is affected by staff availability. A shortage of staff is present in most of the sector offices considered as climate change-relevant (Table 7.1) particularly with recently established offices, such as land management and environmental protection, and water, mines and energy. Some of the shortages are due to recent changes in the woreda structure, with the establishment of new offices, and others are due to the low salaries of local government positions compared to the same positions in the non-governmental organisation (NGO) sector. This results in high staff turn-over. Given the shortage of staff, participatory planning processes, reporting and performance evaluations occupy most of the staff time. Work facilities are also inadequate at the woreda level.

Table 7.1: Staffing situation of selected woreda sector offices

Woreda sector office	Yabelo		Mecha	
	Established Posts	Filled Posts	Established Posts	Filled Posts
PDO/ARDO[1]	78	54	112	92
WMEO	34	20	25	16
LMEPO	25	12	30	11
DPPO[2]	9	3	-	-

1: Only DA positions are considered here

2: Functional in Yabelo woreda only

To improve capacity to implement government plans and programs, training has been programmed in different topics such as surveying tools for farm land certificates, and production of bio-fuel efficient stoves. However, there is no budget allocated for capacity building, so NGOs are looked to as the main source of funding. The International Livestock Research Institute (ILRI) has expressed interest to support the Mecha woreda land and environmental protection office, while SOS Sahel-Ethiopia is willing to provide financial support for Yabelo woreda water, mines and energy office. Capacity building for woreda staff includes support for further education (e.g. Bachelor or Master degrees) for senior employees.

7.4.2 Other institutions

Woreda administrations do not work in isolation. NGOs also interact with woreda offices and personnel (Table 7.2).

In Yabelo, local NGOs include Gayo Pastoral Development Initiative, SOS Sahel Ethiopia, and Action for Development; whilst international NGOs include Save the Children, CARE International, World Vision,

Helpage, and Goal. Most of these organisations work in the areas of livelihood diversification, disaster risk reduction, dryland forest management, and humanitarian assistance. NGOs design and implement projects, and they also provide support to woreda sector offices through capacity building for staff and by covering expenditures for transport and per-diems.

In Mecha woreda the presence of NGOs is more limited. The main climate change-relevant projects are linked to international cooperation: the 'Tana & Beles Water Resources Development Project' and the 'Community-Based Integrated Natural Resource Management in Lake Tana Watershed' project. The Government of Ethiopia signed a credit agreement with the World Bank's International Development Association (IBRD/IDA) to develop the 'Tana & Beles Water Resources Development Project' in 2008 (IDA, 2008). The total buget of the project is USD 70 million and is coordinated by the Ministry of Agriculture and Rural Development (World Bank, 2014). It supports the development of sub-basin management plans, soil erosion monitoring systems, and improved natural resources management practices in both Tana and Beles (World Bank, 2013). The operational budget for the period between 2008 and 2017 is 25 million Birr.

The International Fund for Agricultural Development (IFAD) has been implementing the GEF-funded project 'Community-based Integrated Natural Resource Management' during the period 2010-2017[8] (GEF, 2007). The project supports capacity building for local watershed and micro watershed planners (community and kebele-level platforms); improved pasture management and participatory forest management activities; and the establishment of communal grazing land associations.

Table 7.2: Description of NGOs with climate change-relevant projects in Yabelo and Mecha woredas

Woreda	Main service providers	Description of activities
Yabelo	Gayo Pastoral Development Initiative (GPDI)	GPDI is a local NGO which focuses on pastoral communities in Oromia region. Key areas of interventions include rangeland management by clearing invasive bushes, emergency response and disaster recovery, and rehabilitation of existing water ponds and construction of new water wells for livestock.
	CARE Borena	CARE Borena has been operating in Yabelo woreda for over three decades mainly in emergency services. CARE Borena strives to improve drought responses and pastoral livelihoods in the area.
	Action for Development (AfD)	AfD has been engaged in the implementation of various development and rehabilitation programs in the area. It has particularly been involved in the construction and maintenance of water points in the woreda.
Mecha	Community-based Integrated Natural Resource Management'	This project is an integrated community-based watershed management project. It is financed by GEF and co-financed by IFAD. It focuses on supporting communities prepare and implement watershed management plans.
	Tana Beles Project	This project has a watershed rehabilitation and management component and works in collaboration with the woreda office of agriculture.

[8] The project is implemented in 27 woredas.

National Biogas Program	The national biogas program is intended to improve the livelihood and quality of life of rural households through the exploitation of market and non-market benefits of domestic biogas. The program collaborates with SNV-Ethiopia which provides technical assistance through advisory services, resource mobilisation and knowledge brokering.

7.5 Climate change-relevant expenditure at sub-national level

7.5.1 Local perceptions of climate change

Implementation of climate change action depends on the level of understanding and engagement of local decision makers in climate change activities. In particular 'a shared understanding on goals and problem definitions' is necessary for joint knowledge production on climate change at the local level (Hegger, et al., 2012). For this study, the understanding and level of awareness of climate change by woreda officials and experts was explored in both woredas.

Perceptions on climate change varied accordingly to the main economic activity in each of the woredas. Impacts were perceived mainly in terms of reduced farm productivity and hence reduced income. In Yabelo, where pastoralism is the main livelihood, interviewed officials related climate change to general environmental issues such as water availability or land quality[9], but also to the recent changes in rainfall patterns. These include longer and drier seasons circumvented by shorter but heavier rains; increased frequency of flash floods[10]; and the increased frequency of droughts, from an average of one every 10 years to one every 3-5 years over the last three decades. Beyond reductions in yields and productivity, these changes are also affecting pastoralists' ability to forecast weather conditions in dryland environments. This has led to increased conflict over resources due to scarcity of grazing land and water resources (Amsalu and Alabāčaw, 2009; USAID, 2011). Changes attributed to human activity, such as population growth has led to the over-cultivation of agricultural lands, over-grazing of pasture lands and deforestation. In Mecha, were rain-fed agriculture is the main economic activity, climate change was mainly referred to in terms of changes in rainfall patterns.

From the interviews in both Yabelo and Mecha, climate change awareness at sub-national level is limited. Climate change national policy instruments, such as the CRGE or the climate change specific goals within the Growth and Transformation Plan (GTP) were not mentioned or recognized during interviews with officials. This means local-level actions related to climate change are not being guided by the CRGE strategy. The fact that EPA does not have a structure at the woreda level could help explain the lack of promotion of the CRGE in these two woredas.

Most of those interviewed stated that their official duties are related to mitigation and adaption to climate change at the local level. The activities include a wide range of environmental issues, such as waste management, flood management, environmental hygiene, water and soil conservation, tree planting, water treatment for human and animal consumption, and waste water treatment. Outreach activities to increase climate change awareness within Yabelo and Mecha population are led by the rural Land Management and Environmental Protection office, through their 'environmental clubs' and the 'land and environmental protection committees'. Training on environmental topics is organised for

[9] Encroachment of rangelands by alien and invasive bushes was mentioned in particular.
[10] In 2010, Yabelo town was affected by heavy flooding that washed away houses, businesses and caused damage to the town's infrastructure such as power, water and telephone installations.

target groups including community elders, kebele officials, school directors and health extension workers.

Some current activities in the woredas can be related to climate change adaptation strategies. These include diversification of livelihoods to include agro-pastoralism activities using productivity-enhancing technologies (e.g. fertilizer and seeds); the provision of reliable and timely early warning drought information; helping pastoralists restock drought-depleted herds through government and NGO support; and building community infrastructure (e.g. flood diversion channels) for communities affected by floods. According to those interviewed, pastoralists have begun to diversify their livelihoods, undertaking small-scale crop cultivation, and farmers have started to undertake non-farm activities such as small-scale trading. In the case of crop farmers in Mecha woreda, the focus has been on the introduction of quickly maturing crops, application of chemical fertilizers to increase crop production, and encouraging farmers to diversify their livelihoods (e.g., small-scale poultry farm, beekeeping and agro-forestry focusing on edible fruits). Long-term measures in both areas include watershed development and the enclosure of hillsides to allow for the regeneration of vegetation cover.

7.5.2 Public spending at woreda level

Decentralisation to the sub-national level under a federal framework represents an opportunity for the delivery of climate finance. For local governments, or woredas, funding sources include three sources: federal government transfers, locally generated revenues and donor funds.

Woredas are heavily dependent on budgetary resources allocated by the federal government through the regions (section 5.9). The allocation to the regions is in the form of grant transfers for activities that are in line with the GTP targets. The woreda administration receives a block grant and then the woreda cabinet distributes funding among the different sector offices.

Locally generated revenue by any sector office of the woreda is considered as part of the woreda budget, but the use by the woreda depends on the type of revenue. Taxes are collected locally, including income and property tax, but the revenue is then transferred to the regional government treasury. In Yabelo local revenue is generated from mining activities, specifically from the lease of sand and stone quarries, though this is not a significant amount. In the case of Mecha, no local revenue is generated. In addition, it is expected that local communities will contribute with free labour to perform some of the planned GTP related activities. Watershed rehabilitation, through afforestation and land conservation activities are performed mainly through community unpaid labour.

For activities outside the GTP priorities, the sector offices seek support from NGOs operating in the area. Sector offices prepare proposals and approach NGOs for financial or material support. For example, NGOs are the main providers of training for capacity development. In certain cases, the NGOs themselves invite the sector offices to prepare proposals for support on planned actions. However, the control of these funds remains in the hands of the NGOs.

Disaster preparedness and response as well as disaster risk management follow a different financial cycle. In case of an emergency, federal and regional special transfers are used (each woreda does not have a contingency budget to deal with emergencies). NGOs operating in the area also respond to such events, in coordination with the woreda.

7.5.3 Yabelo local government climate change-relevant public expenditure

The public expenditure analysis at the local level was conducted using a different approach compared to the national level due to limited data availability. At Yabelo, the budget only showed the categories of salaries, administration, capital and contingencies (Table 7.3). No information was available by activities or specific programmes. The only classification available was by each of the sector offices.

Table 7.3: Yabelo: Federal Budget allocation by category of expenditure 2010/11 – 2012/13 (million Birr)

Type	2010/11	%	2011/12	%	2012/13	%
Salaries	16.26	84	24.79	84	28.67	84
Administration	1.58	8	2.43	8	3.29	10
Capital	1.52	8	1.91	7	2.11	5
Other (reserve, contingency)	0.10	0	0.23	1	0.18	1
Total	19.46		29.36		34.25	

The federal budget allocation within the woreda supports mainly staff salaries (84%). The remaining resources are allocated to capital expenditure and operational costs. There is no budget availability for designing and implementing development projects, such as the building of water wells for pastoralist communities.

In terms of allocation by sector, most of the federal grant goes to support the six high priority sectors of the GTP: education; health; rural roads; agriculture and rural development; water and energy; and small-scale enterprises. Out of the 26 sector offices in Yabelo Woreda, these six priority sectors received most of the funding (61%) in 2012-2013 (Table 7.4). The highest share went to education, followed by health and agriculture.

Table 7.4: Yabelo: Budget allocated for poverty reducing sectors in 2012/13

GTP priority sector	Annual budget (million Birr)	% of the total woreda budget
Education	9.19	26.8
Health	4.63	13.5
Agriculture/Pastoral development	4.46	13.0
Water, Mines and Energy	0.71	2.1
Small-scale enterprises	0.50	1.5
Rural Roads	1.34	3.9
Total	20.91	61.0

Based on discussions held with local government officials in the two woredas, sectors that have climate change-relevant activities were identified. These sectors are pastoral development; land use and environmental protection; water, mines and energy; together with disaster preparedness and prevention in Yabelo only. The total expenditures of these climate change-relevant offices are considered to be climate change-relevant (Table 7.5). Specific programs or activities are mostly financed through the support of community labour or NGO financial or in-kind support, as previously described in Table 7.2. This explains why expenditure is close to 100% of the budgeted amount in most of the cases, as it is only used to cover running (recurrent) costs (Table 7.6).

Table 7.5: Yabelo - Climate change relevant expenditure by sector in cash terms (million Birr)

CC-relevant sector	2010/11	2011/12	2012/13	Total
Pastoral Development	3.70	4.14	4.46	12.29
Water, Mines and Energy	0.46	0.46	0.71	1.62
Land Use & Environmental Protection	0.25	0.35	0.50	1.10
Disaster Prevention and Preparedness	0.16	0.22	0.16	0.54
Irrigation		0.07		0.07
Total	4.57	5.24	5.82	15.62

Table 7.6: Yabelo - Comparison of budgeted vs. Outturn for climate-related expenditure (million Birr), 2010/11 – 2012-2013

Year	Budgeted climate related expenditures	Outturn climate related expenditure	Difference in cash terms	Outturn v. budget as a percentage
2010/11	4.53	4.56	0.03	101
2011/12	5.35	5.24	0.11	98
2012/13	5.81	5.82	0.01	100

When comparing the climate change-relevant expenditures over the 3-year period, an increase is observed from year to year (Table 7.7). The 15% of increase in 2011/12 can partially be explained by the 0.44 million Birr increased to the Pastoral Development office over the previous year.

Table 7.7 Yabelo: Growth in climate-related expenditure, 2010/11 – 2012-2013 (million Birr)

Year	Outturn climate related expenditure	Change from previous year	Percentage change from previous year
2010/11	4.57		
2011/12	5.24	+0.68	+15
2012/13	5.82	+0.58	+11

Federally funded projects are administered separately by the region or the relevant federal ministry and so do not go through the woreda administration's financial system. For example in Yabelo, soil and water conservation activities are supported through the Productive Safety Net Programme (PSNP) and the Household Asset Building Scheme (HAB). Some climate change-relevant activities are conducted through this project in the woreda in coordination with the Pastoral Development Office.

An example of the financial collaboration of the NGO sector with the woreda is training. Workshops for the Pastoral Development Office have been organised and financed by SOS Sahel Ethiopia during 2010-2011 for a total of Birr 34,000. In 2011-2012, support came from Gayo Pastoral Development Initiative, providing Birr 24,000 to conduct environmental awareness training for land and environmental protection committee members.

7.5.4 Mecha local government climate change-relevant public expenditure

The information available for Mecha woreda is similar to Yabelo. However, the budget allocated to Mecha is significantly higher. The federal budget allocation within the woreda supports mainly staff salaries, after which the remaining resources are allocated to capital expenditure and operational costs (Table 7.8). Budget availability for designing and implementing development projects remains limited. In terms of GTP priority sectors (Table 7.9), education received approximately 54% of the total woreda

budget in 2012/13, with the health sector being the second priority with 7% of the budget and agricultural development being in the third place with less than 2% of the total budget.

Table 7.8: Mecha - Federal Budget allocation by category of expenditure 2010/11- 2012/13 (Million Birr)

Type	2010/11	%	2011/12	%	2012/13	%
Salaries	38.94	87	52.81	87	61.13	81
Administration	4.42	10	4.66	8	9.08	12
Capital	1.59	3	3.46	5	4.86	7
Other	0.00	0	0.00	0	0.00	0
Total	44.95		60.94		75.08	

Table 7.9: Mecha: Budget allocated for poverty reducing sectors in 2012/13

GTP priority sector	Annual budget (Million Birr)	% of the total woreda budget
Education	40.34	53.7
Health	4.96	6.6
Agriculture development	1.34	1.8
Water, Mines and Energy	0.69	0.9
Small-scale enterprises	0.42	0.6
Rural Roads	0.32	0.4
Total	48.07	64.0

Climate relevant offices in Mecha are agricultural development, water, mines and energy, and land use and environmental protection (Table 7.10). Specific programs or activities are mostly financed through the support of community labour or NGO financial or in-kind support. For example, ILRI has recently donated a vehicle to the land and environmental protection office.

Table 7.10 Mecha: Climate change-relevant expenditure by sector in cash terms, 2010/11 – 2012-2013 (million Birr)

CC-relevant sector	2010/11	2011/12	2012/13	Total
Agricultural Development	3.99	5.70	6.74	16.44
Water, Mines and Energy	0.45	0.98	1.45	2.88
Land Use & Environmental Protection	0.86	1.10	1.30	3.25
Total	5.30	7.78	9.50	22.57

Table 7.11 Mecha: Comparison of budgeted vs. outturn for climate-related expenditure, 2010/11 – 2012-2013 (million Birr)

Year	Budgeted climate related expenditures	Outturn climate related expenditure	Difference in cash terms	Outturn v. budget as a percentage
2010/11	6.08	5.30	0.78	0.87
2011/12	8.47	7.78	0.69	0.92
2012/13	9.72	9.50	0.22	0.98

There is a significant year-on-year increase in climate change-relevant expenditures in Mecha, showing a 47% increase from 2010/11 to 2011/12 and a 22% increase from 2011/2012 to 2012/13 (Table 7.12). This can be explained by an increase of 1.70 million Birr for the 2011/12 in the agricultural development office, and a subsequent increase in the following year. The other two climate change-related offices also received increased budget in both years.

Table 7.12 Mecha: Growth in climate-related expenditure, 2010/11 – 2012-2013 (million Birr)

Year	Outturn climate related expenditure	Change from previous year	Percentage change from previous year
2010/11	5.30		
2011/12	7.78	+2.48	+47
2012/13	9.50	+1.72	+22

An example of the financial collaboration of the NGO sector within the woreda is training. Workshops were organised by the environmental protection and land management office focusing on environmental pollution (including school's Environmental Clubs), desertification, illegal logging and

wetlands. Such activities were supported by the projects 'Tana & Beles Water Resources Development Project' and the 'Community-Based Integrated Natural Resource Management in Lake Tana Watershed'.

7.6 Effectiveness of sub-national climate finance delivery

The analytical framework for climate finance effectiveness at the woreda level revisits the same indicators, criteria and principles as at the national level, considering policy, institutions and public expenditure. The national policy on climate change (CRGE) is directly related to the national development plan, the GTP, and this is used as the main planning document for the regions and woredas. However, climate change relevant activities are led by the EPA, which has no presence at the woreda level and therefore there is no clear route as to how the national climate change targets can be reflected in local planning and budgeting. Most line ministries have representation at woreda level, and the Ministry of Agriculture presence is particularly strong. However, none of these offices have a specific mandate from the EPA to work on climate change issues. This situation may change with the recent establishment of the Ministry of Environment and Forests (MEF), but changes at the local level will take time.

The delivery of public services, including climate finance, is constrained at the woreda level due the current level of capacity, particularly in climate change-relevant sector offices. In both case studies, the relevant offices were severely under-staffed. The working conditions, including low salaries and lack of office supplies, only contribute to the perpetuation of the current situation. Woredas are financially highly dependent on the federal transfers from zones for their current budgets, and on the local community for unpaid labour to implement their activities. NGO support also has a role to play in the provision of certain costs to support public activities.

The budget classification is not well developed at the woreda level. Information is not readily available, and in both case studies the figures for budgets and expenses had to be collected from each of the sector offices specifically for this exercise. In addition, this information in only classified by the nature of the expense (e.g. salaries, fuel) and not by activity. Furthermore, a significant proportion of the budget is used for running costs, as the budget for development programmes is kept under the management of regions. The amount transferred to the woredas covers mainly running costs, providing little budget space for any additional investment.

The institutional infrastructure at local level could provide a network for climate change actions once institutional roles are clarified for the different layers of government, including the woredas. The two woredas studied in this analysis show evidence of collaboration among the different sector offices and they are all guided by the national plan, the GTP. A particular coordination role was identified in the Finance and Budget woreda office.

Overall, the issue of climate change appears to have been given limited attention to-date, either institutionally or financially, in the two woredas assessed. No budget line has been created at the woreda level to undertake climate change actions. Neither Yabelo nor Mecha woredas have a designated institution responsible for the oversight of local climate change-related activities, so much remains to be done.

8 Conclusions

This study set out to identify climate change-relevant public expenditures within the Ethiopian federal budget system, and to carry out a preliminary assessment of whether such funding was being effectively deployed. Effectiveness has been measured through a governance and institutional lens, by examining how national policy processes and the institutions responsible for delivering government's climate change strategy relate to decisions over budget allocations.

This type of analysis has not been attempted before in Ethiopia. Adopting a methodology developed elsewhere, the present study has demonstrated that it is possible to derive an indicative estimate of the level of public spending on climate change, at least for the component of public expenditure that passes through the federal budget. Whist necessarily imprecise due to major definitional ambiguities, this first quantification of relevant public spending is a powerful tool that can be used to inform the policy debate over resourcing the national response to climate change.

These are early days in the national response to climate change. Considerable uncertainty exists over the as yet ill-defined boundary between present day climate variability and any significant shift in the parameters of Ethiopia's climate. Whilst the publication of the fifth assessment report of the International Panel on Climate Change provides an authoritative global view, understanding change at the national level remains problematic. This uncertainty raises doubts for policy makers who have to determine the appropriate level of funding going to climate change actions amongst the many development challenges facing the country.

However, much has happened in terms of defining Ethiopia's response to climate change over the last five years, with a theme that had little policy attention now firmly enmeshed in national planning processes. The publication of the Climate Resilience Green Economy strategy in 2011 was a major landmark. Its vision of securing sustainable development through carbon neutral economic growth, whilst at the same time building the capacity of the economy to cope with the adverse consequences of climate change, has provided a strong foundation for implementation actions. Attention now needs to turn to implementation of the national strategy and related sector-based plans. Implementation will depend on resourcing, both in terms of funding and the level of human and institutional capacities.

This study suggests that there are clear challenges ahead. The CRGE strategy had called for spending of USD 7.5 billion per year to ensure that Ethiopia can respond to climate change. With national budgetary resources for climate change-relevant actions estimated to be in the order of USD 440 million per year in recent years; and international sources adding tens of USD million per year, there appears to be a major financing gap. Therefore, if the strategy is to be delivered, much more effort needs to be exerted to mobilise additional resources both domestically and externally.

Further analysis required

This study has highlighted the fact that much remains unknown about climate finance delivery at the national and sub-national levels and further empirical research will be needed to guide the development of public policy in this area.

First, little is known about the factors that influence the flow of climate finance through existing international climate funds and climate financing mechanisms. National policies that put emphasis on

such funds as a major source of funding for climate change action may therefore have difficulty in ensuring effective financing of the policy responses if access to this source of funding is not improved.

Second, the present gap in the data on 'off-budget' financing for climate change delivered by traditional development partners and other international sources (as well as the Government's own off-budget expenditure), calls for an empirical study of these relevant flows to determine the true level of current commitments, actual disbursements and likely trends for future funding.

Finally, the two woreda case studies conducted as part of this study only provide a glimpse into the unfinished business of designing the appropriate policy response and climate finance delivery at the sub-national level. An in-depth study that builds on this preliminary analysis to improve understanding of the implications of the current financing architecture for climate change actions at the local level is essential for the full implementation of the Climate Resilient Green Economy strategy.

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Annex 1. Government climate change-relevant programmes and development projects 2008/9 – 2011/12

Ministry/Agency	Programme	Department	Project Code	Project Description	M/A	%	CC Relevance
Climate change adaptation projects							
EPA	Management and Administration	Support and Services		Afar integrated dry land management	A	100	H
EPA	Green Economy Implementation Capacity Building	Technology Transfer Directorate	001	Africa Adaptation Program	A	100	H
EIAR	Dry Land Agricultural Research	Research Centers	017	Dry land crops and natural resources research	A	100	H
EPA	State of Environment for Green Economy Development	State of Environment Assessment and Reporting Directorate	001	Global Climate Change Alliance -Ethiopia	A	100	H
NMA	Meteorological Services	Meteorological Analysis and Forecast Department	003	Capacity building for aeronautical meteorology	A	80	H
NMA	Basic Meteorological Information Services	Meteorological Information Services	003	Construction of meteorological stations	A	80	H
MoA	Early Warning and Response	Early Warning and Response Department	001	Early warning & response building	A	80	H
NMA	Meteorological Research & Analysis	Meteorological Research Department	001	Establishment of air pollution meteorological stations	A	80	H
NMA	Basic Meteorological Information Services	Meteorological Information Services	001	Establishment of meteorological stations	A	80	H
NMA	Meteorology Network Expansion	Administration and General Services	002	Establishment of regional metrological offices	A	80	H
NMA	Meteorology Network Expansion	Technical Services	001	Establishment of metrological stations	A	80	H
NMA	Basic Meteorological Information Services	Meteorological Information Services	002	IT Networking	A	80	H
NMA	Meteorological Analysis & Early Warning	Meteorological Analysis & Forecast Department	002	Purchase of aeronautical instruments	A	80	H
NMA	Meteorological Analysis & Early Warning	Meteorological Analysis & Forecast Department	003	Purchase of meteorological instruments	A	80	H
MoA	Early warning & Food Security	Early warning & Response Directorate	002	Technology facility for disaster reduction and recovery	A	80	H

MoWIE	Irrigation and Hydro Power Dam Works Development	Dam and Hydro Power Design Department	021	Abaya sub basin /Blate, Gelana, Gidabo & Boyo irrigation development study & Boyo dam construction	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	004	Adaa Becho gravity irrigation project	A	70	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Dam and Hydro Power Design Department	023	Arjo Dedessa irrigation study design & construction project	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	001	Arjo Dedessa dam & irrigation Project	A	70	M
EIAR			001	Biometrics, GIS and Agro-meteorology Project	A	70	M
MoA	Natural Resource Development, Conservation and Utilization	Natural Resource Development, Conservation and Utilization Directorate	009	Community-based integrated natural Resource management project	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	006	Ethio Nile irrigation design	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	026	Ethio Nile irrigation & drainage project	A	70	M
MoWIE	Basin Development	River Basin Development Study & Water Utilization Control Department	002	Genale Dawa river basin integrated master plan	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	021	Gidabo dam & irrigation project	A	70	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Dam and Hydro Power Directorate	021	Gidabo dam construction/Abaya sub basin	A	70	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Dam and Hydro Power Directorate	022	Gololcha Detaild irrigation design /Wabi Shebelle	A	70	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Irrigation and Drainage Development Study Department	011	Humera irrigation detail study design & construction	A	70	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Irrigation and Drainage Development Study Department	026	Irrigation study & design program II	A	70	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Dam and Hydro Power Design Department	019	Kesem - Tendaho dam & irrigation project	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	019	Kessem - Tendaho dam & irrigation project	A	70	M

MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	003	Kobo Girana gravity irrigation project	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	010	Koga irrigation & watershed management project	A	70	M
MoWIE	Trans-boundary River Rights and Utilization	Contract Administration Department	010	Koga irrigation & watershed management project	A	70	M
MoWIE	Water Resources Administration	Contract Administration Department	010	Koga irrigation & watershed management project	A	70	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Irrigation and Drainage Development Study Department	012	Lake Tana Area irrigation development study, detail design & construction mobilization Project	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	007	Megech dam & irrigation project	A	70	M
MoWIE	Basin Development	River Basin Development Study & Water Utilization Control Department	003	Nile River Basin Authority organizing project	A	70	M
MoWIE	Basin Development	Basin Master Plan Study & Implementation Directorate	014	Nile watershed management project	A	70	M
MoA	Natural Resource Development, Conservation and Utilization	Natural Resource Development, Conservation and Utilization Directorate	004	Participatory small scale irrigation development program	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	002	Raya gravity irrigation project	A	70	M
MoWIE	Basin Development	River Basin Development Study & Water Utilization Control Department	001	Rift Valley Lakes integrated master plan project	A	70	M
MoWIE	Basin Development	Basin Master Plan Study & Implementation Directorate	001	Rift Valley Lakes integrated master plan project	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	012	Rib dam & irrigation project (Tana Zuria)	A	70	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Irrigation and Drainage Development Study Department	004	Small scale irrigation & agricultural capacity building project	A	70	M
MoA	Natural Resource Development, Conservation and Utilization	Natural Resource Development, Conservation and Utilization Directorate	005	Sustainable land management project	A	70	M
MoWIE	Water Resources Administration	Watershed Development & Management Directorate	031	Tana-Beles integrated water development project	A	70	M
MoWIE	Basin Development	River Basin Development Study & Water Utilization Control Department	031	Tana-Beles integrated water development project	A	70	M
MoWIE	Basin Development	Basin Master Plan Study &	031	Tana-Beles integrated water	A	70	M

		Implementation Directorate		development project			
MoWIE	Irrigation and Hydro Power Dam Works Development	Dam and Hydro Power Design Department	022	Wabi Shebele Basin /Gololcha, Erer, East Gode & Emmi irrigation study & detail design	A	70	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Irrigation and Drainage Development Study Department	018	Wolkayit irrigation development project	A	70	M
MoWIE	Irrigation & Drainage Development	Irrigation & Drainage Directorate	020	Ziway gravity irrigation project	A	70	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Dam and Hydro Power Design Department	020	Zway irrigation project study & design	A	70	M
EIAR	Administration and Finance Service	Crop	005	Aromatic, medicinal and bioenergy crops research	A	50	M
MoA	Food Security	Food Security Department	001	Food security program	A	50	M
MoA	Food Security	Food Security Department	003	Food security project	A	50	M
MoWIE	Water Resources Administration	Ground Water Study & Development Directorate	013	Ground water study, design & construction	A	50	M
EIAR	Soil and Water Management Research	None	016	Integrated watershed management research	A	50	M
EIAR	Soil and Water Management Research	None	015	Irrigation, drainage and water harvesting research	A	50	M
EIAR	Administration and Finance Service	Crop	006	Plant protection and biotechnology research	A	50	M
MoA	Food Security	Food Security Department	002	Productive safety net program	A	50	M
EIAR	Soil and Water Management Research	Research Centers	016	Soil and water conservation, irrigation and drainage research	A	50	M
EIAR	Soil and Water Management Research	Research Centers	015	Soil Fertility and Resource Characterization Research	A	50	M
MoWIE	Establishment of Water Resources Database Management System	Hydrology Department	008	Surface water resource & sediment	A	50	M
MoWIE	Irrigation and Hydro Power Dam Works Development	Irrigation and Drainage Directorate	013	Underground water study design & construction Project	A	50	M
Water Development Fund Office	Drinking Water Supply	Administration & General Service	012	Urban water supply & sanitation project	A	50	M
MoWIE	Water Supply and Sanitation Service Development	Rural Water Supply and Sanitation Services Department	017	Water supply and sanitation program	A	50	M
MoWIE	Drinking Water Supply	Drinking Water & Sanitation	017	Water supply services coordination	A	50	M

	Services	Directorate		project			
MoA	Agricultural Extension	Agricultural Extension Directorate	010	Agriculture growth program	A	40	M
EIAR	Soil and Water Management Research	None	014	Integrated soil fertility soil fertility management and crop productivity improvement research	A	40	M
EIAR	Others	Research Centers	025	Agricultural biotechnology research	A	30	M
EIAR	Agricultural Extension Research and Technology Transfer	Research Centers	022	Agricultural extension & technology transfer research	A	30	M
EIAR	Others	Research Centers	048	Agricultural research & training project	A	30	M
EIAR	Crop Research	Research Centers	010	Breeding and genetic base for Teff improvement	A	30	M
EIAR	Crop Research	Research Centers	001	Cereal research	A	30	M
EIAR	Crop Research	Research Centers	008	Coffee & tea research	A	30	M
MoA	Agricultural Extension	Agricultural Extension Department	003	Coffee improvement project	A	30	M
EIAR	Administration and Finance Service	Crop	004	Coffee, tea and spices crops research	A	30	M
MoA	Natural Resource Development, Conservation and Utilization	Natural Resource Development, Conservation and Utilization Directorate	008	Food for Work program	A	30	M
MoA	Natural Resource Development, Conservation and Utilization	Natural Resource Development, Conservation and Utilization Department	006	Food for Work project	A	30	M
EIAR	Crop Research	Crop	003	Horticulture crops research	A	30	M
MoA	Agricultural Extension	Agricultural Extension Department	006	Livestock development master plan study project	A	30	M
EIAR	National Plant Protection Research	Research Centers	021	Plant protection research	A	30	M
MoH	Improvement of Health Care Delivery	Disease Prevention and Control Department	011	Prevention and control of Malaria & other vector borne diseases	A	30	M
MoH	Heath Promotion and disease Prevention	Agrarian Health Promotion and disease Prevention Directorate	011	Prevention and control of Malaria & other vector borne diseases	A	30	M
MoH	Management and Administration	Disease Prevention and Control Department	011	Prevention and control of Malaria & other vector borne diseases	A	30	M
EIAR	Crop Research	Crop	002	Pulse, Oil and fiber crops research	A	30	M
EIAR	Others	Research Centers	024	Seed and research centers development & management	A	30	M

EIAR	Crop Research	Crop	007	Teff breeding and genetics	A	30	M
EIAR	Crop Research	Research Centers	004	Vegetable & floriculture crops research	A	30	M
EIAR	Crop Research	Research Centers	002	Agro Biodiversity Conservation project	A	20	L
MoWIE	Capacity Building and Support Services	Human Resources Management Directorate	024	Ethiopian water technology project center	A	20	L
EIAR	Animal Science	Research Centers	013	Forage, pasture, animal nutrition & apiculture Research	A	20	L
MoUDHC	Industry and Urban Development Program	Housing Development Department	010	Integrated House Development Project	A	20	L
MoUDHC	Urban Good Governance Capacity Building	Urban Good Governance Capacity Building Bureau	003	Public Sector Capacity Building Project	A	20	L
EIAR	National Plant Protection Research	Research Centers	022	Removing barriers to Invasive Plants management project	A	20	L
EIAR	Animal Science	None	009	Ruminant animals research	A	20	L
MoH	Improvement of Health Care Delivery	Family Health Department	009	Strengthen family planning & reproductive health	A	20	L
MoH	Improvement of Health Care Delivery	Family Health Department	010	Strengthen integrated childhood illness Prevention and control	A	20	L
MoUDHC	Urban Development Capacity Building	urban development capacity building office	002	urban centers decentralized service delivery	A	20	L
MoUDHC	Urban Development Capacity Building	urban development capacity building office	003	Urban Development Fund project	A	20	L
MoUDHC	Urban Good Governance Capacity Building	Urban Good Governance Capacity Building Bureau	002	Urban Development Fund Project	A	20	L
MoUDHC	Urban Good Governance Capacity Building	Urban Good Governance Capacity Building Bureau	001	Urban Infrastructure Development Expansion Project	A	20	L
MoUDHC	Urban Development Capacity Building	urban development capacity building office	005	Urban local government development project	A	20	L
MoUDHC	Federal Urban Planning coordination	Integrated Urban Planning Department	001	Urban plans preparation	A	20	L
MoWIE	Water & Energy Sector Capacity Building	Water Technology Training Center	004	Water technology & research capacity building project (Regions)	A	20	L
MoA	Natural Resource Development, Conservation and Utilization	Natural Resource Development, Conservation and Utilization Department	001	Agricultural sector support project	A	10	L
MoA	Agricultural Extension	Agricultural Extension Department	001	Agricultural technical and vocational education and training program	A	10	L
MoA	Centers	National Animal Health Research Center	001	Animal health research program	A	10	L
EIAR	Animal Science	Research Centers	014	Animal health research	A	10	L

EIAR	Crop Research	Research Centers	012	Apiculture & Sericulture Research	A	10	L
MoH	Improvement of Health Care Delivery	Hygiene and Environmental Health Department	016	Basic hygiene & environmental health education	A	10	L
MoH	Improvement of Health Care Delivery	Health Service and Training Department	006	Develop health service standards	A	10	L
MoH		Planning and Programming Department	024	Establishing & strengthening health systems	A	10	L
ERA	None	None	011	Ethiopian Roads Authority	A	10	L
EIAR	Animal Science	None	011	Fish & aquatics research	A	10	L
EIAR	Animal Science	Research Centers	012	Fish research	A	10	L
MoA	Agricultural Extension	Agricultural Extension Department	007	Fishery Development Master Plan Study Project	A	10	L
MoH	Improvement of Health Care Delivery	Health Service and Training Department	030	Health service extension package	A	10	L
MoH	Heath Promotion and disease Prevention	Agrarian Health Promotion and disease Prevention Directorate	030	Health service extension package	A	10	L
MoH	Management and Administration	Health Service and Training Department	030	Health service extension package	A	10	L
MoA	Agricultural Extension	Agricultural Extension Directorate	005	Livestock and Livestock Products Quality Project	A	10	L
EIAR	Soil and Water Management Research	Research Centres	013	Management of problematic soil research	A	10	L
EIAR	Animal Science	Research Centers	010	Poultry research	A	10	L
MoA	Agricultural Extension	Agricultural Extension Department	002	Rural capacity building project	A	10	L
MoI	Private Sector Development Program	None	007	Strengthening private sector capacity	A	10	L
Climate change mitigation projects							
EPA	Green Economy Development Effectiveness Monitoring &Control	Monitoring and Control Directorate	001	Climate change & environmental Sustainability	M	100	H
MoA	Natural Resource Development, Conservation and Utilization	Natural Resource Development, Conservation and Utilization Directorate	007	Climate Change Project	M	100	H
EPA	Environmental Protection Policy Establishment & Follow Up	Environmental protection policy	001	Environmental protection policy capacity building	M	100	H
MoA	None	Administration and Finance Service	001	Environmental protection	M	100	H

EPA		Environmental System Design Directorate	001	Spanish M.D.G	M	100	H
MoWIE	Energy Development	Alternative Energy Technology Development & Transfer Directorate	001	Biogas technology development project	M	80	H
MoWIE	Energy Activities	Alternative Energy Technologies Transition Directorate	001	Biogas technology development project	M	80	H
MoWIE	Energy Activities	Alternative Energy Technologies Transition Directorate	009	Electrification of remote rural areas	M	80	H
Ethiopian Electric Power Corporation	None	None	001	EPPCO's universal access program	M	80	H
EIAR	Forestry research	Research Centers	020	Natural Forest Research	M	80	H
MoWIE	Energy Development	Alternative Energy Technology Development & Transfer Directorate	008	Rural electrification - small hydro	M	80	H
MoWIE	Energy Development	Alternative Energy Technology Development & Transfer Directorate	007	Rural electrification - solar	M	80	H
MoWIE	None	None	004	Rural energy development and promotion program	M	80	H
MoWIE	Energy Activities	Alternative Energy Technologies Transition Directorate	004	Rural household energy efficiency	M	80	H
MoWIE	Energy Development	Alternative Energy Technology Development & Transfer Directorate	009	Study on alternative energy technologies	M	80	H
MoWIE	Energy Activities	Alternative Energy Technology Study & Development	014	Study on alternative energy technologies	M	80	H
MoWIE	Energy Development	Alternative Energy Technology Development & Transfer Directorate	010	Transfer of alternative energy technologies	M	80	H
Ethiopian Electric Power Corporation	None	None	001	Universal electrification programme	M	80	H
MoWIE	Energy Development	Hydro Power Studies & Dams Directorate	007	Bekoabo, Mendeya hydro feasibility study	M	70	M
MoWIE	Energy Development	Hydro Power Studies & Dams Directorate	010	Didessa Hydro prefeasibility study	M	70	M
MoA	Administration and Management	Forest Land use and Soil Conservation	001	Forest plant supply development project	M	70	M
EIAR	Forest Research	Research Centers	019	Forest resources, tree improvement research	M	70	M
MoWIE	Irrigation and Hydro Power Dam Works	Dam and Hydro Power Design Department	007	Medium scale hydropower study	M	70	M

	Development						
MoA	Natural Resource Development, Conservation and Utilization	Natural Resource Development, Conservation and Utilization Directorate	006	Participatory Forest Management	M	70	M
MoWIE	Energy Development	Hydro Power Studies & Dams Directorate	009	Tekeze 2 hydro prefeasibility study	M	70	M
MoWIE	Energy Development	Hydro Power Studies & Dams Directorate	008	Wabe Shebelle hydro feasibility study	M	70	M
EIAR	Forestry research	Research Centers	017	Plantation and agroforestry research	M	50	M
EIAR	Crop Research	Research Centers	008	Removing alien species in Africa (GEF)	M	50	M
EIAR	Administration and Finance Service	Research Centers	008	Removing alien species in Africa (GEF)	M	50	M
MoA	Agricultural Extension	Agricultural Extension Directorate	009	East Africa agricultural production program	M	10	L
MoA	Natural Resource Development, Conservation and Utilization	Natural Resource Development, Conservation and Utilization Department	002	Eastern Africa bamboo development project	M	10	L
MoI	Manufacturing Industries Sector Capacity Building	Industry Production and Marketing Directorate		Private sector capacity building	M	10	L

M/A: Adaptation or Mitigation expenditure (A, M)

%: Climate change relevance weight (percent)

CC relevance: Three categories (high - H, medium - M, low - L)

See Chapter 2 and Annex 2 for further details.

Annex 2. Measuring the effectiveness of public climate finance delivery at the national level[11]

1. Introduction

This framework proposes the use of a hierarchy of principles, criteria and indicators (PCI) that, taken collectively, can provide guidance for the analysis of how public climate finance is managed. The principles are drawn from the international literature and indicate what climate finance delivery should look like in an ideal world. The criteria and indicators differ in nature, as they are limited to reflect a progression towards compliance with the principles. They are not intended to define an ideal, but provide a pragmatic challenge to current practice and highlight important areas for progress. The framework provides, therefore, an outline for 'lines of enquiry' rather than a 'best practice' ideal.

In many ways, the principles attempt to formulate what 'good governance' in the sphere of climate finance management should look like. Extensive literature 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 discussion, it is important to recognise that most government institutions, their policies and 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 will depend on further country-specific refinement.

2. What makes climate finance delivery effective in the national context?

In the absence of an internationally agreed definition of what makes national climate finance delivery effective, we have identified three interlinked elements of national public administration that can provide information on the performance of the systems in place to manage climate finance delivery. These elements are not separate spheres of activity, but are intimately related, with many interactions:

- first, 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.
- second, 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.
- third, the financial systems through which climate change-related expenditures are channelled, e.g. the national budget and other funding mechanisms. Such funding supports activities, projects and programmes that are recognised as being part of the national response to climate change.

This approach builds on the methodology adopted for a series of country studies implemented by the United Nations Development Programme (UNDP) in South-East Asia that began the detailed analysis of climate finance delivery at the national and sub-national 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 'World Governance Indicators') and very specific diagnostic tools (e.g. the Public Expenditure and Financial Accountability (PEFA) framework). The approach taken in this paper is to develop a more 'meso' or 'intermediate' level of analysis that is specific to climate change. This provides more detail than

[11] Adapted from http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8303.pdf

that found in high level indices – which do not have a specific 'climate financing' element – or those specific metrics that provide detailed scoring, such as PEFA. The hope is that this intermediate level of analysis will capture more contextual detail on the real day-to-day operation of policies, institutions and public expenditure management and make the analysis more relevant for both country governments and the international community.

3. Applying the principles, criteria and indicators (PCI) approach within each of the three elements

The PCI approach 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 can be applied to each of these three elements of the national public administration 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 principles, criteria and indicators that we have identified under each element.

3.1 Policy requirements for effective climate finance delivery

We identify four principles from the literature that underpin the development and implementation of policy, and are relevant to the effective delivery of national climate change finance:

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

Climate change policies shall be designed for ease of implementation

Any framework to assess 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 (which is proving a major challenge for climate change policies), should 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 ensure the effective delivery of finance it needs to come with a set of implementing instruments and regulations: a complete 'policy package'.

The legitimacy of climate change policies shall be recognised by stakeholders

In many cases, climate change policies will require new governance arrangements and involve a wide set of stakeholders, as climate change requires 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). Legitimacy in the policy-design process is aided by the representation of different stakeholders, including those at greatest risk from climate change (Burton et al., 2002). However, the equal representation of different groups is unlikely, in reality, as it depends on the relative influence of different actors. For instance, those directly affected by climate change at the local level are unlikely to have a powerful voice with which to influence the executive and policy-makers in government.

Climate change policies shall be coherent with national development policies

Climate change policies need to be coherent with 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 to ensure the coherence of resource allocation is a major challenge. Although this challenge is not limited to climate-related policy, the interdisciplinary and cross-sectoral nature of climate change makes it essential to secure strong coordination and coherence, which may have to overcome vested interests.

Climate change policies shall promote transparency in climate finance delivery

Transparent funding decisions are essential to demonstrate effectiveness in climate finance delivery. Climate change policy should, therefore, contain appropriate guidance that commits all the key actors along the climate finance delivery chain to high standards of transparency. Transparency of policies and public spending plans may be secured through the official records of the national legislature.

These four principles can be developed further by identifying criteria that are consistent with each principle, and indicators of compliance for each that reflect current-day practice (Table 1). These criteria and indicators are not intended to be comprehensive, but focus on areas where the authors have observed some debate and traction in policy circles.

Table 1: Policy-related effectiveness principles, criteria and indicators (PCI) for climate finance delivery

Principle	Criteria	Indicators
Climate change policies shall be designed for ease of implementation.	• Policy objectives are clearly expressed.	• 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.
	• Subsidiary instruments for implementation accompany the policies.	• 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.
The legitimacy of climate change policies shall be recognised by stakeholders.	• Key stakeholders' interests are represented in policy-making processes.	• 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.
	• Policy-making is evidence-based.	• 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. • Relevant policy documents contain explicit references to background analytical work and contributions from policy think tanks.
Climate change policies shall be coherent with national development policies.	• Policy statements on climate change acknowledge national development goals.	• Reference is made to national development in the national climate change policy.
	• Climate change actions are consistent with strategies and planning processes for national development.	• Climate change strategy documents and national development goals refer to each other.

Principle	Criteria	Indicators
Climate change policies shall promote transparency in climate finance delivery.	• Climate change policies provide for the establishment and operationalisation of mechanisms and modalities to promote transparency.	• Mechanisms and modalities exist to promote transparency of climate finance.

3.2 Institutional requirements for effective climate finance delivery

Effectiveness is a performance measure and its scope depends on the identification of an objective or problem to be solved, which is determined within a particular context. In this case, an institutional assessment would help determine to what existing institutions enable or hinder climate finance delivery, allowing an understanding of their ability (or lack of ability) to achieve this objective. It is important to keep in mind that different disciplines 'look at effectiveness through different lenses and routinely reach divergent conclusions' (Young, 2003:99). An explicit analytical framework is needed, therefore, to conduct the assessment in a replicable manner. The proposed approach consists of an investigation of public, private, and civil society organisations, as well as the rules governing their interaction and dynamics, as part of the institutional architecture for effective climate finance delivery. With this in mind, a literature review was conducted to identify common principles that underpin institutional performance.

We identified three principles from the literature that relate to institutional performance and that are relevant to the effective delivery of national climate change finance:

- coordination (Booth, 2010; Flynn, 2011)
- having the capacity to change and innovate (Imperial, 1999; Peters et al., 2012)
- use of locally-anchored institutions (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 co-production 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 finance delivery is made more complex by the fact that 'the governance of climate change is highly dispersed and fragmented […]. Responsibilities are shared among a multitude of actors operating across numerous scales and in a bewildering number of sites' (Newell, 2011: 34). In most cases, the Ministry of Environment holds the lead on climate change policy and is the national UNFCCC focal point, but decisions over the majority of climate-related public expenditures are often made in parallel by the Ministry of Finance or Planning (Miller, 2012). Fragmentation of inter-ministerial decision-making is exacerbated by multiple channels of external financial flows (Thornton, 2011). A robust coordination mechanism between national leads on climate change policy and expenditure would ensure that when national climate policies are put in place, those priorities are translated into expenditure decisions in the budgetary process.

When parts of external finance are channelled through extra-budgetary funds, donor agency programmes and civil society organisations, an extended mechanism would also 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

Ability to cope with high levels of complexity and uncertainty in the face of new challenges is crucial in terms of capacity for change (Harris and Penning-Rowsell, 2009). Considering that climate change policy – and hence its funding – is relatively new, and that the vulnerability context changes constantly because of the interactions between social and environmental conditions (Eriksen et al*.,* 2011), the ability to demonstrate such innovation is an important institutional characteristic to secure the effective delivery of climate finance. Mapping how the current institutional infrastructure responds to such challenges indicates the level of change and innovation capacity of the institutions concerned.

Climate change institutions shall be anchored locally

'Meeting the needs of the most vulnerable to climate change will require a strong local financial delivery mechanism' (Bird, 2012: v). Such a mechanism will depend on the capacity of institutions that have a local (i.e. sub-national) 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). This principle can, therefore, be expected to exert a strong influence on the effectiveness of climate change finance delivery.

The effectiveness of climate change finance delivery will depend on how far these three institutional principles are respected. Table 2 lists these principles, together with the criteria and indicators that we have selected to support the assessment of progress towards each of the principles.

Table 2. Institutional effectiveness principles, criteria and indicators (PCI) for climate finance delivery

Principle	Criteria	Indicators
A national mechanism shall exist for coordination between institutions involved in climate finance delivery.	• Leadership of the national response to climate change in terms of climate finance delivery is established within the government administration.	• The national lead institution has appropriate authority 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.
	• The roles played by actors in the delivery of climate finance are known by key stakeholders	• All mandated national institutions report their expenditures on climate change activities each financial year.
	• Other actors within the policy making process outside government (e.g. the legislature, party-governing committees) review and challenge policy.	• 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.
	• Institutional arrangements are in place for inter-agency collaboration	• 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	• The national response to climate change facilitates the adoption of change and promotes innovation.	• 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 be anchored at the local level	• Institutional arrangements respond and adapt to local needs.	• Funding is directed within the national budgetary system to local climate change institutions.

3.3 Public expenditure frameworks to assess the effectiveness of climate finance delivery

Policies and institutions provide the guidance and background against which climate finance will actually flow and there is, therefore, a strong interrelationship and feedback across all three PCI elements. We will now examine what effective expenditure management systems should look like to support climate finance. High level principles for effective public financial management (PFM) are set out in numerous handbooks provided by various leading donors agencies (e.g. Schiavo-Campo and Tommasi, 1999; Allen and Tommasi, 2001; Shah, 2007; Potter and Diamond, 1999). In addition, the PEFA methodology represents the most developed and widely-used diagnostic tool to assess country performance in public expenditure management. As noted, the approach outlined here does not use the PEFA methodology, as this approach 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.

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

Good practice budget preparation would involve the scrutiny and challenging of spending proposals, based on the results of the monitoring and evaluation of performance in previous years. It would also involve consultations with external stakeholders, such as local civil society institutions, culminating in detailed information on the proposed budget and an understandable public explanation of the budget's intentions.

This matters for climate change expenditure as it helps to ensure compatibility with other areas of spending, ensuring that the adaptation and mitigation goals that are incorporated support climate-compatible development. Where climate spending is 'off-budget', such mainstreaming and scrutiny becomes less likely. An effective planning and budgeting process should require all climate-related expenditure bodies that submit expenditures to the Ministry of Finance to highlight their climate-related plans. A political process would then determine the relative priority of these proposals and generate agreement among climate expenditure agencies that they will abide by the results of the process. This prioritisation process should be informed by monitoring and evaluation of climate-related expenditure from previous years to give decision makers an understanding of the progress being made against overall climate change adaptation and mitigation strategies.

The proposed budget would, ideally, identify climate-related expenditures across different categories of spending (e.g. current versus capital spending; allocations to different ministries) supported by publicly-available budget documents. This is, typically, an area of weakness for national budgets, as few have systems in place to identify climate-related spending, which makes it difficult to track. Ministries of Finance tend 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-related expenditure shall be executed through government systems using the budget

Spending agencies should follow a standard process: commit expenditure, verify delivery of goods and services, authorise and make payment, and then record the transaction appropriately (Potter and Diamond 1999: Section IV). The Ministry of Finance, 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 expenditure to anticipate expenditure shocks, and to ensure that climate-related activities they have outlined in their budget proposals are reflected in their expenditure.

Effective cash management is often a challenge as domestic revenue and international funding may not be spread equally across the budget period. This presents knock-on challenges for spending agencies that

implement plans without sufficient funds to pay for the necessary goods and services. Such challenges are often particularly acute for sub-national governments (e.g. district and provincial authorities) as they are, typically, less powerful than central government agencies. They may not be fully connected to the integrated financial management system, while also facing communication difficulties because of sheer geographic distances. Many of these will have formal responsibility for the delivery of local services that may have significant climate-related impacts.

Given the challenges of identifying climate-related spending within the budget, regular reports for all expenditure generated by the Ministry of Finance are unlikely to provide information on the in-year position of climate-related spending. As donors are likely to have contractual requirements for spending reports on their financing, additional reporting requirements may well be in place for specific projects or funds. Although this means that the contractual requirements of the funds or projects can be met, too little information on climate spending is available to government and stakeholders.

Climate-related expenditure shall be subject to reporting and accounting

Ideally climate-related expenditure would follow the standard pattern of reporting and accounting, with PFM systems able to capture and record expenditure as part of a comprehensive system of accounting. Accounting for expenditure should be done on the same basis as the original budget, allowing for rapid and straightforward comparison of expenditure against original plans. In practice, this means classifying individual expenditures against the same coding system used in budget planning.

The climate public expenditure and institutional reviews carried out in South-East Asia[12] highlighted the progress needed to establish common financial reporting systems across government for climate change-related activities. It found that, in general, the systems in place are not comprehensive. In Nepal, for example, donors, central government and local government use different reporting systems, and in Bangladesh the budget submissions of ministries do not identify climate change activities (Government of Nepal, 2011; Government of the People's Republic of Bangladesh, 2012). In Samoa, it was recommended that financial monitoring and tracking systems should be strengthened in terms of both inputs and outputs (ODI, 2012).

Analyses of spending on climate-related activities is only possible if a system to identify climate spending is in place, or by ensuring that budgets for climate adaptation and mitigation activities contain adequate funding to monitor and evaluate climate-related expenditure.

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

Climate-related expenditures should be seen as part of the whole-of-government approach to 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 and assuring the accuracy of transactions and the correct reconciliation of accounts, and assessing the evidence that correct procedure has been followed.

Expenditure for climate change adaptation and mitigation strategies should be reviewed and audited in the same way as any other government expenditure. Audit reports should highlight areas of incorrect practice, non-observance of financial rules and any grounds for concern over fraud or misappropriation. Where climate-related expenditures are identified, it should be possible for the audit body to focus on performance in this area of the budget. However, given the current absence of systems to track and monitor climate-related

[12] http://www.aideffectiveness.org/CPEIR

expenditure, specific climate analysis is unlikely. Instead, climate spending that is on-budget is captured within the wider audit. For off-budget funds, specific audit requirements are likely to be in place that are signed off by the funds' governing bodies.

It is also normal for the legislature to be involved in 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 audit 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 governments to respond to specific findings. Climate-related spending may well be included in the remit of such committees alongside other types of spending, and is unlikely, therefore, to receive specific attention. This is yet another area where the challenges of separately identifying and monitoring climate-related spending has a negative impact on the understanding of national climate change adaptation and mitigation.

Table 3 details criteria and indicators that are relevant to assessing present day practice against these four principles for public expenditure management.

Table 3. Public expenditure effectiveness principles, criteria and indicators (PCI) for climate finance delivery

Principles	Criteria	Indicators
Climate change expenditure shall be planned and budgeted for in the annual budget formulation process.	• Budget preparation captures the actors involved in climate-related expenditures.	• Adherence by all climate-related actors to a budget calendar for the formulation of the national budget. • Representation of climate concerns in the discussion and scrutiny of spending proposals, resulting in the development of the national budget's priorities. • Ex ante scrutiny, challenge and approval of the national budget, and its climate change provisions, by a legitimate authority (e.g. the national legislature).
	• Budget preparation identifies key climate-related expenditure.	• Budget classification structures allow for climate-related expenditure to be identified across ministries, departments and agencies. • Budget information that includes climate-related expenditure is publicly available.
	• Budget preparation captures climate-related expenditure in a medium-term policy framework.	• The government has a medium-term policy and expenditure framework for key areas of spending, including climate-related expenditure.
	• Budget preparation takes into account the findings of the evaluation and monitoring of government programmes.	• The key recommendations of any monitoring and evaluation exercises for climate-related programmes are considered.
Climate change expenditure shall be executed through government	• The Ministry of Finance manages cash flow to ensure that resources are available to spending agencies in line with the	• Cash is available to agencies to fulfil their climate-related commitments in line with the approved budget.

systems during the budget year.	approved budget.	
	• In-year adjustments to the budget are done only when unavoidable and aim to maintain delivery on the government's budget priorities.	• Spending agencies maintain oversight of their climate-related operations to manage any unexpected financial shocks.
	• Climate funds are spent in line with the planned budget.	• 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.	• Government accounts for all expenditure, including climate-related expenditure, are undertaken.	• Spending agencies record and reconcile climate-related transactions as part of routine accounts reconciliation processes. • Government accounts that cover climate-related and all other expenditure are published in a timely manner after the end of the budget period. • Accounts can be related back to the original budget format, allowing assessment of climate-related expenditure compared to the approved budget.
Climate change-related expenditure shall be subject to external oversight and scrutiny.	• Government accounts are audited.	• An independent audit authority undertakes a timely audit – to international public sector standards – of government financial statements, including those of climate-related elements. • Findings from these financial 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-related expenditures where appropriate.
	• The legislature reviews government accounts and audit findings and provides challenge and scrutiny.	• Audit findings, including those relevant to climate 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 its relevant committees engage in a scrutiny and challenge function regarding government financial performance, including performance against climate-related objectives, based on their findings.

4. Conclusion

This framework is, primarily, a research tool that is intended to assist country level studies on climate finance delivery. It approaches the effectiveness question through a focus on institutional and governance processes and, by so doing, emphasises the earlier stages of the impact continuum. Further study will be required on effectiveness measures based on substantive outcomes associated with the national response to climate change.

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