

Climate Finance Tracking and Projection Approach and Methodology in Ethiopia

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Acronyms

CC	Climate Change
CFF	Climate Fiscal Framework
CCFF	Climate Change Fiscal Framework
CFTPM	Climate Finance Tracking and Projection Methodology
CPEIRs	Country Public Expenditure and Institutional Reviews
CRGE	Climate Resilient Green Economy
DFA	Development Finance Assessment
FDRE	Federal Democratic Republic of Ethiopia
GHG	Greenhouse Gas Emission
GTP	Growth and Transformation Plan
IFC	International Financial Corporation
IPCC	Intergovernmental Panel on Climate Change
INDC	Intended National Determined Contribution
INFF	Integrated national financing framework
MoFEC	Ministry of Finance and Economic Cooperation
MoFED	Ministry of Finance and Economic Development
MDBs	Multilateral Development Banks
OECD	Organization for Economic Cooperation and Development
PER	Public Expenditure Reviews
PEIRs	Public Expenditure and Institutional Reviews
PEERs	Public Environment Expenditure Reviews
SD	Sustainable development
SDGs	Sustainable Development Goals
UNDP	United Nations Development Programme
ODA	Official Development Assistance
OOF	Other Official Flows

Executive Summary

The Government of Ethiopia has determined to deepen and enhance rapid growth and structural transformation to achieve a lower middle income status by 2025 with net-zero greenhouse gas (GHG) emission growth trajectory, while simultaneously building the resilience of the economy to climate shocks. In doing so, not only substantial public investments are being made to support CRGE implementations, but also a considerable amount of CRGE related investment is being delivered through community mobilization and non-state actors. In addition, legal and institutional reforms have been made to create an enabling environment to proactively engage private sector and community in CRGE investment. Ethiopia has also mainstreamed its Climate Resilient Green Economy (CRGE) strategy into its second Growth and Transformation Plan (GTP-II) to help greening the economy. As articulated in the country's Intended Nationally Determined Contribution (INDC), the government envisages to reduce national greenhouse gas emission by 64 percent by 2030 compared with the 'business as usual'.

The CRGE strategy indicates investment requirements of about USD 7.5 billion per year to make the economy climate smart and ensure the sustainability of economic growth between 2010 and 2030. This estimate doesn't provide a clear financing breakdown regarding the contributions of different stakeholders (i.e. government, communities, private sector, bilateral and multilateral development partners, etc.) including the mode of contributions (i.e. grant, concessional loan, etc.) nor does it provide guidance on what constitutes climate finance for Ethiopia.

It should be noted that the resources required for the realization of vision 2025 and 2030 significantly exceeds current supply. At the same time, there is a need for a full account of baseline climate financing from a variety of sources (e.g. public, private, community and non-governmental organization), which will help to estimate the gap between demand and supply for climate finance.

The main objectives of this report is to develop a climate finance tracking and projection methodology to enable Ethiopia undertake a comprehensive assessment of baseline climate finance invested from between 2011 and 2015, project climate finance flows and climate related investment, and design appropriate CRGE financing strategy for Ethiopia. The methodology constitutes analytical frameworks as well as instruments and protocols for data gathering and analysis and assessment of financing/investment options. The CRGE Facility in collaboration with sector ministries, development partners and other stakeholders will ensure the application of the climate finance tracking and projection methodology in a consistent manner.

Before delving into climate finance tracking and projection, it is important to formulate a working definition of climate finance in Ethiopia, identify climate change relevant investments across the key CRGE sectors and review literature and international good practices. There are two common analytical frameworks that can be used to analyse climate change related activities and climate finance: Development Finance Assessment (DFA) and Climate Fiscal Framework (CFF). The DFA framework

helps to establish the link between climate change related activities and climate finance with the overall development agenda including policy and institutional arrangements. The DFA methodology requires a design of an integrated national financing framework (INFF) as a holistic approach that provides coherence to the planning and finance systems. It also simultaneously considers the technical and political factors that affect the functioning of both the planning and financing systems. The DFA framework provides an understanding and identification of the potential sources of resources including domestic (e.g. public and private) and external (both public and private) finance resources needed for implementing development initiatives in a sustainable manner. Note that although the DFA framework provides pertinent information on the economy-wide development finance flows, the framework can also be adapted to the analysis of climate change related investments and finance.

The climate fiscal framework (CFF) focuses on climate change related financing needs and sources of finance and it is a useful tool in understanding policy options to mobilize and deliver finance for inclusive climate-related investments as it combines the sources and use of climate finance in an integrated framework. This framework helps identify potential sources of climate financing (both public and private) and how these resources could best be accessed, combined and sequenced. By so doing, the framework can be used to determine: (i) division of climate funds and their allocation to relevant sectors, (ii) identification of the demand for climate fund, and expenditure responsibilities, (iii) Areas of financial sources, by identifying national and international financing options; and (iv) A governance framework for climate change funds under the national fiscal policy. Hence, the CFF provides an account of fiscal developments and resource estimates for short-, medium-, and long-term climate expenditures. Specifically, the climate fiscal framework helps answer the following questions. How much climate finance is needed from different sources to deliver low-carbon and climate-resilience development pathway? How much investment is already flowing? Who are the key actors? And what is the balance between different forms of climate finance (e.g. public versus private resources)? How does the setoral composition of climate finance look like?

A practical challenge relates to identifying climate related investment and finance is setting an operational definition of what constitutes climate finance in the Ethiopian context that would help assess climate change activities and financial flows. This part of the study proposes an operational definition of climate change activities and climate finance based on literature and national policies, strategies and plans which is subject to validation through consultations with relevant stakeholders.¹ The operational definition helps classify activities and finance into climate and non-climate related components which helps to dig deeper into the analysis of climate change related activities and finance. Having identified climate change related activities and finance, the next step is to estimate the current gap between climate change investment needs and financing and project the same for 2030. This involves two elements. First, climate related expenditures will be forecasted using development plans as a guide (e.g. Growth Transformation Plan, GTP-II) and sectoral climate resilient strategies). Second, the mode of financing climate change related interventions will be made, taking into account different

¹ The earlier version of this report has been distributed to development partners and other stakeholders. In addition, an Expert Group Meeting held to discuss and validate the methodology on November 3, 2017.

sources of finance (such as public versus private, domestic versus external). For the latter, two scenarios will be considered. The first scenario considers that each climate finance sources will be assumed to grow at their respective historical average growth rates over the projection period. The second scenario considers future prospects and likely trends of the different climate finance sources which help adjust historical growth rates. Based on the adjusted growth rates, each climate finance sources will be projected. Based on the above scenarios, different climate finance sources trends will be evaluated which help identify the anticipated financing gaps and articulate challenges facing the country in terms of mobilizing climate finance. This exercise is used to extrapolate from current trends to estimate climate finance during the GTP-II period and beyond (possibly up to 2030) along with estimates of climate finance needs required to achieve the targets as stipulated in the INDC.

1. Introduction

1.1 Background

The Ethiopian government has increasingly become aware of and better informed about sustainable development (SD) more than a decade or so ago. The Supreme law of the land (or the Constitution) of the Federal Democratic Republic of Ethiopia (FDRE), which was enacted more than two decades ago, recognizes the importance of sustainable development. Guided by the principles of the supreme law of the land, the government has made enormous strides in articulating sustainable development in its development policies, strategies and plans. All national policies, strategies, plans and programs are geared towards achieving sustainable development and eradicating poverty. Ethiopia is committed to address the many acute and co-mingled economic, social and environmental issues which stand in the way of sustainable development, the greening of the economy and improvements in human wellbeing, quality of life and happiness. Specific targets include to meet the socioeconomic Sustainable Development Goals (SDGs) by 2030, and to achieve lower middle-income status by 2025. Economic goals include raising productivity in agriculture, improving social services, promoting industrial development, and filling significant remaining gaps in power, transportation (both road and rail) and telecommunications infrastructure. In doing so, the Government of Ethiopia has determined to deepen and enhance rapid growth and structural transformation, with net-zero GHG emission growth trajectory, while simultaneously building the resilience of the economy to climate shocks.

The main planning instruments are series of development plans including the first generation Growth and Transformation Plan (GTP-I) (MoFED, 2010) and the second generation of Growth and Transformation Plan (GTP-II) (NPC, 2015). Most of the measures mandated under the GTP-II require public sector fiscal resources (either in terms of spending requirements or the foregoing of revenue in the case of incentives).² In response to the growing risk resulting from climate change, Ethiopia has been implementing the CRGE strategy since 2011 (FDRE, 2011) and has further integrated the Client Resilient Green Economy (CRGE) strategy into the second Growth and

² Framed in terms of the developmental state model, the GTP-II draws on a wide range of tools requiring Government spending, including: targeted financial support (subsidies, bank loans, and equity participation); tariff exemptions for production inputs; tax incentives, including tax holidays, partial profit exemptions, and free trade zones to attract FDI and to promote priority sectors, particularly those facing handicaps such as inadequate specific infrastructure; strategic government procurement (e.g. assured profit margins for domestic pharmaceutical manufacturers in government health-care procurement); publicly financed infrastructure, particularly power, telecommunications and transportation, both internal expansion of the road and rail network and improving the trade corridors; and the creation of public corporations.

Transformation Plan (GTP-II) (2015/16-2019/20). This ensures that the CRGE strategy is part of a comprehensive national plan for public investments as well as the legal and institutional reforms necessary to create an enabling environment for private sector and community engagement. The strategy focuses on improving agricultural productivity, developing the industrial sector, expanding and improving electricity generation and distribution, reforestation, and introduction of clean production technologies. In this regard, substantial public investments are being made to support CRGE interventions. In addition, legal and institutional reforms necessary to create an enabling environment for private sector and community engagement in CRGE action are ongoing. It is also recognized that a considerable amount of investment in CRGE is being delivered through community mobilization and non-state actors.

However, it is well recognized that the resources required for realization of vision 2025 and 2030 significantly exceeds current supply. At the same time, there is a need for a full account of baseline financing from the variety of sources (e.g. public, private, community and non-governmental organization) involved in CRGE financing; based on this, the gap between demand and supply for climate finance/investment can be determined.

1.2 Ethiopia's Response to Climate Change

The government of Ethiopia is very clear on the current and future impacts of climate change on society, economy and ecosystems. There is a deep link between environment and economic and social development in Ethiopia. Climate change can jeopardize the hard-won economic and social development of the country. Cognizant of this, the Government of Ethiopia has taken bold steps to fight climate change domestically and advocate for continental and global joint actions. In 2011, the government has declared its domestic commitment through the adoption of the Climate Resilient and Green Economy (CRGE) strategy. The strategy has elaborated a number of low carbon emitting actions across key economic sectors, which can lead Ethiopia to achieve its vision of building a carbon neutral lower middle income economy by 2025. The government of Ethiopia has also advocated and added its voice for the adoption of a binding global climate agreement during COP-21 in Paris last December. Few months before the adoption of a binding global climate agreement in Paris, Ethiopia has submitted its ambitious Intended Nationally Determined Contribution (INDC) to the UNFCCC. The Ethiopian INDC sets out plans to reduce 64 percent of the national greenhouse gas emission by

2030 compared with the 'business as usual'. This is despite the facts that Ethiopia contributes only 0.02 percent of global emissions, and about 70 percent of its population lacks access to electricity. Since the official declaration of the CRGE Strategy in Durban in 2011, the government of Ethiopia has aggressively embarked on operationalizing the strategy and implementing low emission and climate resilient actions. The government has established a new institutional set-up for effective development and implementation of the CRGE strategy from federal to district levels. The ***Environmental Council***, chaired by the Prime Minister Office and comprising members from federal ministries, presidents of regional states, and private sector and civil society representatives provides overall oversight and responsibility for the realization of the CRGE Vision. Line Ministries have also established ***CRGE units***, with the overall responsibility of coordinating and facilitating the planning and implementation of sectoral CRGE strategies. The former Environmental Protection Authority (EPA) has been upgraded into Ministry of Environment, Forest and Climate Change to technically coordinate the delivery of the strategy. The Ministry of Finance and Economic Cooperation (MoFEC) has also established the CRGE Facility in order to mobilize and access climate finance from bilateral and multilateral sources.

1.3 Financing the CRGE Vision: The Ethiopian INDC (EINDC)

The CRGE Strategy/EINDC has not only identified climate smart actions across the key economic sectors but also estimated the financial requirements of the actions. Accordingly, Ethiopia requires expenditure of around US\$150 billion in order to realize its vision of building a low-carbon and climate resilient middle income country status by 2025. In other words, the government has to invest USD 7.5 billion to make the economy climate smart and ensure the sustainability of economic growth. The above estimation doesn't include the climate change resilience building requirements of specific sectors of the economy. According to the Climate Resilience Strategy of Ministry of Water, Irrigation and Electricity, it is anticipated that the sector requires about USD 895 million³ for climate resilience building interventions. The climate change resilience building resource requirement of the Agriculture and Forest sector has been estimated at USD 1508 million. This huge resource should be mobilized from domestic and external sources including from private sector in the form of foreign direct

³ Ministry of Water and Energy (2014), *Climate Resilience Strategy: Water and Energy*, Addis Ababa.

investment (FDI), from bilateral and multilateral sources in the form of grant, concessional loan and other instruments.

The CRGE Strategy classifies the CRGE initiatives into three categories based on their financing requirements, return on capital and benefits to the society. Accordingly, Category A initiatives are those which can generate positive return on capital and benefits to the society in the short term, usually within the first five years from the start of the initiative. These initiatives by nature have short-term upfront financing requirement. Category B initiatives are those which require high upfront investment and generate positive return on capital as well as benefits to the society in the long-run (i.e. until 2030). As opposed to the above, Category C initiatives are those which require high upfront investment and operating expenditure and don't generate return on investment even in the long-run (i.e. from the start of the initiative up to 2030).

Although the CRGE strategy provides the overall policy context, it does not provide the detail required to define a climate finance framework for Ethiopia. In addition, the CRGE strategy doesn't provide clear breakdown regarding the contributions of different stakeholders (i.e. government, communities, private sector, bilateral and multilateral development partners, etc.) including the mode of contributions (i.e. grant, concessional loan, etc.). As stated earlier, it categorizes initiatives based on their short, medium and long term economic gains. It is therefore relevant to take this further and undertake comprehensive assessment of past, current and anticipated climate finance and relevant investment needs in Ethiopia across sectors. This ultimately will inform resource allocation and mobilization strategy.

1.4 Purpose and scope

The overall aim of the Climate Finance Tracking and Projection Methodology (CFTPM) is to enable Ethiopia undertake a comprehensive assessment of baseline climate finance invested from 2011-2015, (2011-2015), identify financing options and assess financing/investment flow in Ethiopia including, domestic and international public and private sources and community contributions over three-time scale (up to 2020, 2020-2025, and 2025-2030) and design appropriate CRGE financing strategy. The CFTPM constitutes methodologies and analytical frameworks as well as instruments and protocols for data gathering and analysis and a model/s for projection and assessment of financing/investment options. The specific objectives of the CFTPM include among others:

- Determine economy wide baseline (2011-2015) of CRGE financing/investment (including public, private, NGO's, communities, etc.) using nationally approved tools, but informed by best practice in the industry practice area (climate finance);
- Undertake CRGE financing need analysis for (2015-2020), (2020-2025) and (2025-2030);
- Identify and assess CRGE financing options from varieties of sources, including national and international public and private sector, non-state actors and communities, and provide finance/investment “demand and supply” and propose strategy for gap filling;
- Help the government of Ethiopia to strategically position the CRGE/INDC initiatives and mobilize finance from different sources; and
- Undertake extensive and relevant CRGE data collection and analysis from variety of sources including review of relevant assessments and studies by national and international entities.

1.5 Approach and method

The overall methodological approach has been inspired by recent international research work on access to finance in general and access to climate finance in particular. Four strands of work are of particular relevant to the analysis including the following: (i) the *role of the state in financial sector development*, which includes several papers published since the mid-2000s and culminated with the publication of the *Global Financial Development Report*; (ii) recent research work on *financing the post-2015 sustainable development goals* (SDGs): Development Finance Assessment (and Integrated National Financing Framework); (iii) recent research works on climate fiscal framework (CFF) or climate change financing framework (CCFF); (iv) lessons learned from evaluations and other empirical studies on climate finance and other relevant documents such as multisectoral investment plans and carbon pricing studies on Ethiopia.

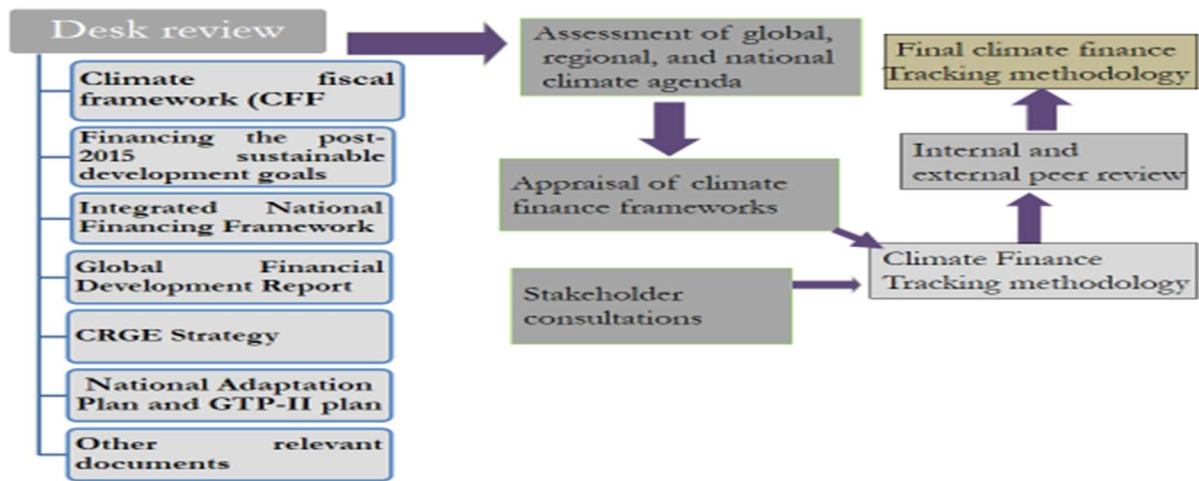
From an operational point of view, the design of the methodology has been supported by a two pronged approaches including (i) desk work, aimed at reviewing relevant literature and consolidating the information available in secondary sources, and (ii) stakeholder consultations, covered expert group discussions and key informant interviews to collect data on climate finance.

Desk review: Desk work involved the review of a wide range of studies and policy documents, including (i) reviewing and understanding the relevant government policies, strategies and plans of the government (such as the CRGE Strategy, GTP plans, and sector strategy documents particularly the

CR strategies, of the key CRGE Sectors, (ii) Planning and budgeting processes, (iii) Annual reports, budget speeches and allocations by source and type, and other studies on climate finance. Desk work involved the analysis of various statistical sources and review of experience of other countries and good practice guidelines.

Stakeholder consultations: There are many stakeholders consulted during the development of the Climate finance tracking and projection tool. These include sector ministries such as the Ministry of Finance and Economic Cooperation (CRGE Facility), Ministry of Environment, Forest and Climate Change, Ministry of Agriculture and Natural Resources, Ministry of Water, Irrigation, and Electricity and other relevant sector ministries. In addition, development partners were also consulted. Overall, the development of the methodology benefited from comments and suggestions obtained of these consultations.

Figure 1: Operational framework



Source: Own construction

2. The literature and country experience

2.1 Conceptualization of development and climate finance

The global community deliberates on new development goals to eradicate poverty, but climate change threatens to slow and even reverse progress in human development (Stern, 2009; Bird, 2014). According to the 2010 World Bank report, many of the most severe impacts of global warming will be felt in the world's poorest countries. Although interventions to mitigate greenhouse gas emissions have the potential to reduce the impacts of climate change over the long term, some degree of global warming is inevitable (IPCC, 2013). As a result, developing countries and vulnerable people need to adapt to the risks that will come with climate change. Beyond the physical science, climate change will have far-reaching social, economic and environmental consequences. In response, international and national governments promote investment in low carbon climate resilient development pathway to address the challenges and opportunities provided by climate change. This investment is expected to achieve, protect and enhance development gains made by households and the economy in the context of escalating climate change impacts. Thus the long-term impacts of climate change are contingent on both adaptation policies of developing economies, and mitigation policies of developed economies. Finance plays a key role in implementing low carbon and climate resilient development (LCCRD) pathway. This will entail mobilizing the scale of finance required to meet the climate related investments needs.

2.1.1 Climate-related investments

Climate change (CC) issues typically fall into two major categories: adaptation and mitigation. Adaptation implies to actions, which will help societies and natural systems cope with the consequences of climate change. Mitigation on other hand refers to actions which reduce GHG emissions into the atmosphere or absorption of GHGs from the atmosphere (IFC, 2013). However, the question is: what constitutes climate-related initiatives or activities? According to the World Resources Institute (WRI), climate activities are those that help societies to develop resilience in adapting to the negative effects of climate change (i.e. adaptation) and reduce greenhouse gas (GHG) emissions (i.e. mitigation). The OECD (2011) framework also provides guidance on the difference between adaptation and mitigation activities. According to the OECD, an activity can be classified as adaptation-related if it intends to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and

resilience. For instance, activities aim at promoting diversified agricultural production to reduce climate risk can be considered as climate change adaptation. On the other hand, an activity is said to be climate change mitigation related if it contributes to the objectives of stabilization of greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system by promoting efforts to reduce or limit GHG emissions or to enhance GHG sequestration (OECD, 2011). For instance, development of the forestry sector through sustainable forest management, afforestation and reforestation activities can be classified as climate change mitigation as it protects and enhances sinks and reservoirs of GHGs. Another example could be replacing fossil fuel use, either through product substitution or use of biomass from forests, forms part of bio-energy production. These activities can be classified as climate mitigation.

Ethiopia has decided to make low-carbon development pathway a national policy through the adoption of the CRGE Strategy in 2011 and the eventual integration of climate change into the second mid-term development plan (GTP-II). The CRGE strategy of Ethiopia identifies both adaptation and mitigation as key means of addressing the adverse impacts of climate change. Thus, using the CRGE strategy, development aspirations, and the literature as guide, Ethiopia's climate-related activities constitute activities geared towards developing resilience in the face of climate-related impacts and reducing GHG emissions.

2.1.2 Climate finance

Developed country Parties have made commitment “to a goal of mobilizing jointly \$100 billion dollars a year by 2020” in climate finance at the 15th United Nations Convention on Climate Change (UNFCCC) Conference of the Parties (COP 15) in Copenhagen in 2009. In spite of this, there is no universally accepted definition of “climate finance”. According to the UNFCCC's Standing Committee on Finance (2014), “Climate finance aims at reducing emissions, and enhancing sinks of greenhouse gases and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts”⁴. Climate finance refers to the flow of funds toward activities aimed either at (i) ‘mitigation’, for example, investment on technologies and innovations which can reduce greenhouse gas (GHG) emissions, or (ii) ‘adaptation’, i.e. helping societies to develop resilience in adapting to the negative effects of climate change.

⁴ UNFCCC Standing Committee on Finance (2014), “Biennial Assessment and Overview of Climate Finance Flows Report 2014”, Bonn, Germany.

A fundamental challenge in quantifying and monitoring climate finance is that there is no agreed definition of what counts as ‘climate finance’. Policy makers, investors, financial intermediaries and analysts do not always have the same understanding of key climate finance terms and concepts. Building a common understanding of key climate finance terminology would improve ongoing discussions on how best to estimate climate finance, clarify efforts to measure its effectiveness, and help identify where public sector interventions can best impact the scale up of climate finance (Falconer *et al.*, 2014)⁵. The literature offers two types of definitions related to climate finance. According to the broad definition, climate finance is the flow or allocation of funds toward activities that reduce greenhouse gas emissions or help society adapt to climate change’s impacts. It is the totality of flows directed to development projects that include climate benefits.⁶ A narrow definition of climate finance might include finance that supports discrete climate activities, but excludes activities in which climate considerations are mainstreamed into traditional development assistance through a “climate-proofing” process.

The principles of the UNFCCC suggest that developed countries mobilize ‘new and additional’ financial resources to meet the ‘incremental costs’ of climate change. The practical interpretation of this principle, however, has been a source of debate and controversy (Watson *et al.*, 2012)⁷. According to this definition, only those financial commitments and investments beyond a ‘business-as-usual’ case would be included under climate finance. Again there is no a common understanding on what is considered as “additional”.⁸

Distinguishing climate finance from other forms of finance (e.g. official development assistance) is another challenge inherent in all climate finance quantification and monitoring efforts, whether by a contributor or a recipient. Countries and contributor institutions use a variety of definitions to identify climate finance, with significant implications for questions regarding the quantity and characteristics of this finance. Note that some activities are not being undertaken specifically to address climate

⁵ Angela Falconer and Martin Stadelmann (2014), What is climate finance? Definitions to improve tracking and scale up climate finance. A Climate Policy Initiative Brief.

⁶ See also <http://www.wri.org/blog/2013/04/why-climate-finance-so-hard-define>

⁷ Charlene Watson, Smita Nakhooda, and Alice Caravani (2012), The practical challenges of monitoring climate finance: Insights from Climate Funds Update, Climate Finance Policy Brief.

⁸See also <http://www.wri.org/blog/2013/04/why-climate-finance-so-hard-define>

change, but may in fact still generate benefits for multiple policy objectives simultaneously, making the distinction between “climate change finance” and finance for other activities somewhat arbitrary.

2.2 Climate Finance Assessment frameworks

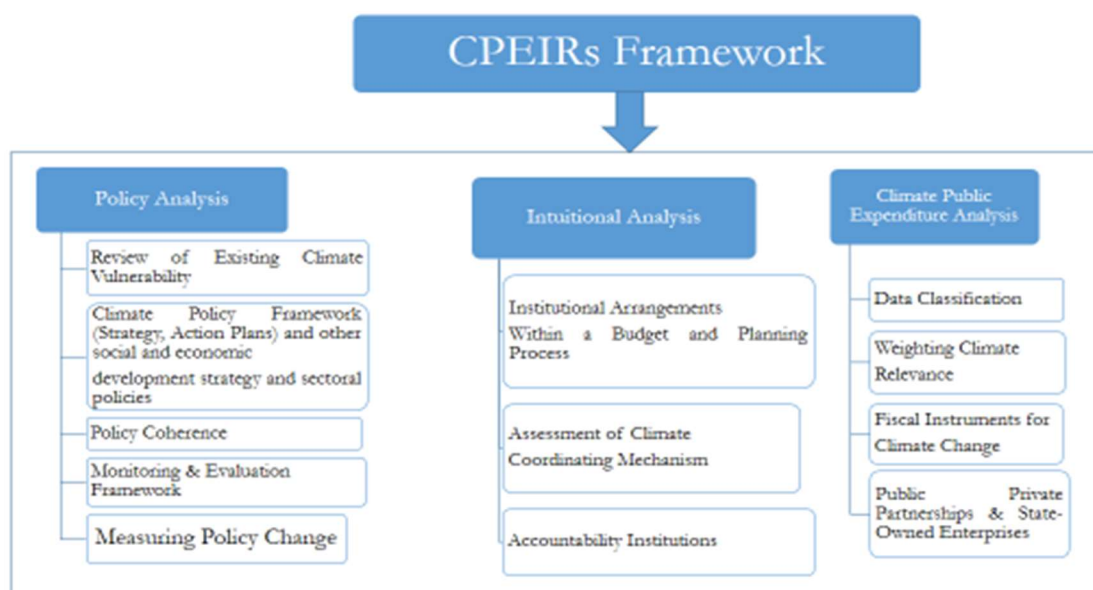
The literature provides guidance on assessment of climate activities and climate finance. Two assessment frameworks are often used in the analysis of climate-related activities and climate finance. These are development finance and climate fiscal framework.

2.2.1 Climate public expenditure and institutional review (CPEIR)

Based on World Bank’s work on Public Expenditure Reviews (PER), Public Expenditure and Institutional Reviews (PEIRs) and Public Environment Expenditure Reviews (PEERs), UNDP developed the CPEIRs methodology in 2011, and applied it to the cross-cutting theme of climate change.

The CPEIRs methodology involves a review and analysis of three main areas with regard to climate change: policies, institutions and budgeting (UNDP, 2015a). In particular, the finance aspect shows the proportion of public expenditure relevant to climate change and its distribution across sectors, as well as the proportion that is domestically/externally funded. The methodology provides information on the following information: policy and institutional architecture regarding translation of climate change objectives into budgets; definition of climate change relevant expenditures, trends in budget allocations related to climate change; and extent of external finance flows.

Table 1: CPEIR Analytical Framework



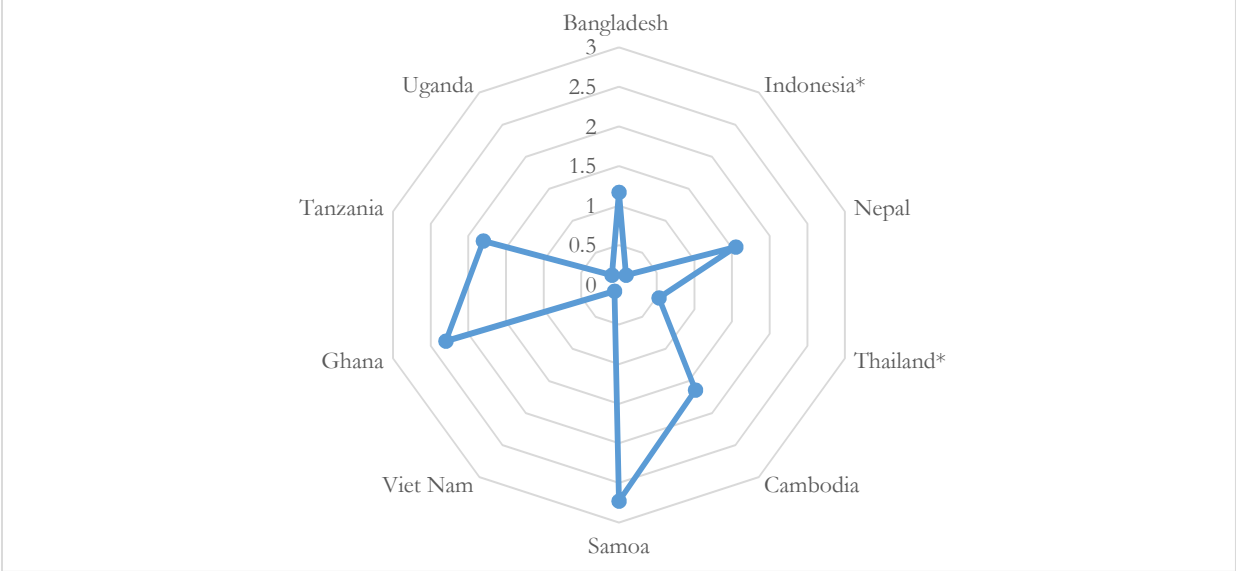
Source: UNDP (2015a)

The CPEIRs methodology requires certain steps to be followed to identify and estimate how much governments are spending on climate change related activities. The climate public expenditure analysis part of the CPEIRs framework quantifies the climate relevant expenditure out of the total national budget and it also measures fiscal policies, such as tax incentives and subsidies, as part of climate financing instruments (UNDP, 2015a). In doing so, the CPEIR reviews the expenditures for sectoral policies and programmes which are expected to contribute to the national climate change response. The process involves three steps: identification of climate-related government expenditure, classification of government-related expenditure and weighting relevance. In identifying climate-related government expenditure, it is to identify which government policies and programmes are relevant to climate change. Currently, there is no agreed functional classification of climate change related expenditure. In addition, there is no marker for climate change in the budget. This means the classification is based largely on expert judgment.

The methodology has been applied in a number of countries across the world not only to identify the magnitude of climate-related government expenditure but also to assess policy and institutional

arrangements with respect to climate change. Climate related expenditure ranges from 0.1 percent of GDP in Vietnam to 2.7 percent in Samoa. Country reviews indicate that domestic finance accounted for a large proportion of climate related expenditure.

Figure 2: Country level CPEIRs applications



* For Indonesia, the figure includes climate change mitigation public spending only; the figure for Thailand does not include climate change related spending from off-budget channels.

Source: UNDP (2015b); Bird *et al.* (2016)

One of the strengths of the CPEIRs methodology is that it links climate public expenditure with policies and institutional arrangements. It also helps to capture all public expenditure, including recurrent and development and including domestic and external funding. But this methodology doesn't capture climate-related investments by other institutions such as private sector and other non-state actors. In addition, the framework, at least explicitly, doesn't deal with the supply of climate finance from different sources.

2.2.2 Development finance assessment (DFA) framework

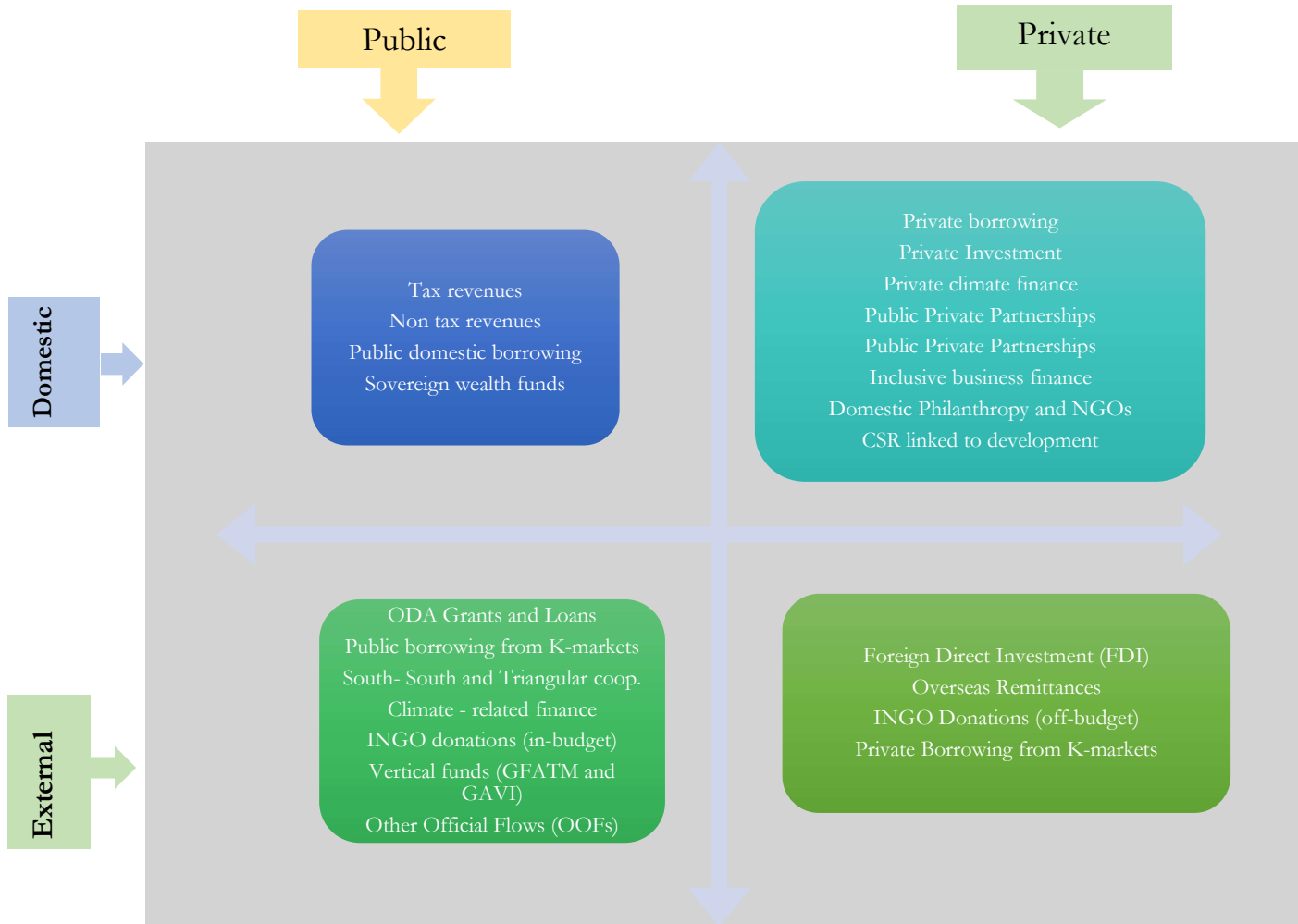
Climate change is no longer an environment concern only as it is also an economic and social concern. Both climate activities and finance are undertaken within the overall development perspective. These require the need for establishing the link between climate related activities and climate finance with the overall development agenda including policy and institutional arrangements. The development finance assessment (DFA) framework can serve this purpose as it provides an understanding of the potential sources of resources including domestic and external resources needed for implementing development initiatives (Figure 1). Domestic resources include public sources such as tax and non-tax

revenue, and domestic private sources such as domestic private investment and domestic philanthropic organizations, while the external resources include official development assistance (ODA), climate finance and South-South cooperation (SSC) and external private sources (e.g. FDI and remittances). In addition, the DFA framework includes an assessment of relevant policies, institutional arrangements, technical systems and tools and human resource capacity to mobilize, manage, deliver, monitor and report on existing and future flows, together with recommendations on the way forward. This will entail mobilising the scale of finance required to meet the costs and timeframes of climate investments. The DFA framework provides pertinent information on the economy-wide financial flows by origin which will be linked to climate related investments or activities.

The DFA provides a comprehensive assessment of the main development finance flows that are available in a country. It provides detailed information on recent evolution and trends, relevance of each flow in financing development goals, policy and institutional setting governing and affecting the development of the flow and availability of data and information to support policy decision making. The framework also shows the degree of governments' influence over different types of development financing. While governments control public finance, with competing interests within government and coordination complexities, governments have direct but limited control over development cooperation providers. On the other hand, governments have no direct involvement with private investments but can indirectly incentivize the way financing is used.

The framework also helps understand the policy options to mobilise and deliver finance for inclusive climate-related investment in Ethiopia. The framework supports policymakers in tracking and assessing how the design of financial intermediaries, instruments and planning systems can enhance the flow of finance from its source to its end use (Kaur *et al.*, 2016).

Figure 3: Development financing tools and resources



Source: Based on Stratta (2015) and AP-DEF and UNDP (2016)

The Development Finance Assessment (DFA) is a tool designed to establish evidence and analysis, and introduce policy and institutional reforms for managing the increasing complexity of domestic and international sources of finance for development. DFAs seeks to bring together fragmented approaches on the use of the different sources of funds that may not all be primarily dedicated to addressing development (AP-DEF and UNDP, 2016). The DFA methodology has been applied to different countries to support the policy-making process and development of national development plans of countries by providing a disaggregated information on finance sources. The DFA is a useful tool to quantify the different sources of development finance and to identify the relative importance of finance sources in the overall development finance landscape which helps countries to articulate a holistic financing structures, based on both domestic and foreign sources of funding.

Table 2: Applications of DFA in selected countries

Country	Additional uses of DFA
Bangladesh	DFA helps develop a financing strategy for the 7th Five Year Plan as well as informs institutional restructuring within the Ministry of Finance to more effectively manage flows of development finance.
Fiji	DFA supports the design of a long-term financing strategy to support the country's ambitious integration of its Green Growth Strategy with the newly developed National Development Plan 2016-203.
Mozambique	DFA is used to strengthen government coordination, especially within the Ministry of Planning and Finance, with private sector, development partners, and CSO.
Malawi	DFA is used to inform the revision of the Aid Effectiveness policy architecture, while broadening the scope beyond ODA to include consideration of other finance flows.
The Gambia	DFA has been used to inform the national development cooperation dialogue and its resource mobilization strategy.

Source: AP-DEF and UNDP (2016)

Although the DFA methodology has the advantage of providing a comprehensive information on supply of development finance by origin, it doesn't indicate the magnitude of development finance allocated to climate related expenditure nor does it provide information to classify climate relevant expenditure.

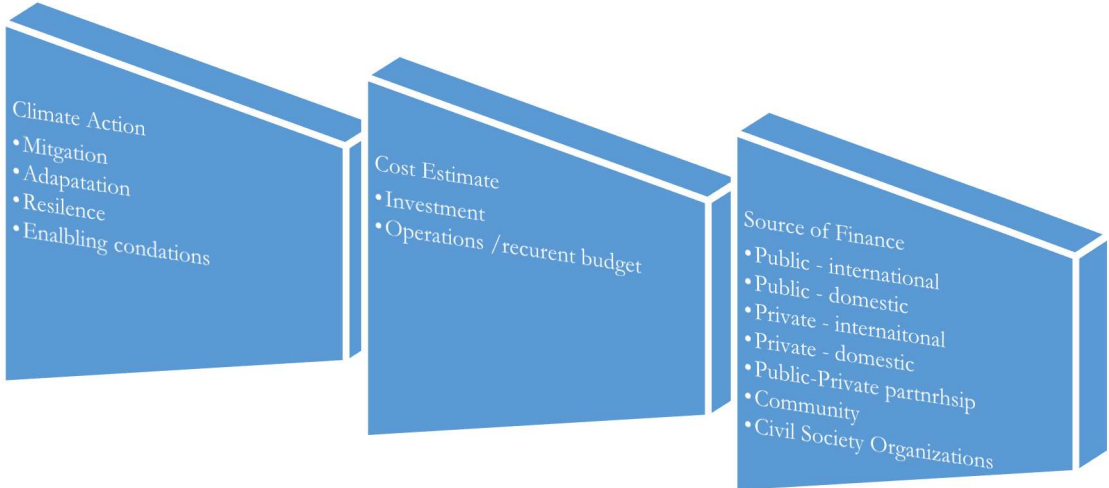
2.2.3 Climate fiscal framework (CFF)

The climate fiscal framework is useful to understand the policy options to mobilize and deliver finance for inclusive climate-related investments as it combines the sources and use of climate finance in an integrated framework. The framework provides principles and tools for informed climate fiscal policy making by identifying demand and supply sides of climate funds to ensure sustainable fiscal policy in the long-term and effective utilization of external and internal finances in addressing climate change (Ampri, 2009; UNDP, 2014). The climate fiscal framework helps identify all potential sources of climate financing (both public and private as well as national and domestic) and how these resources could best be accessed, combined and sequenced. Thus, the framework can be used to determine: (i) division of climate funds and their allocation to relevant sectors, (ii) identification of the demand for climate fund, and expenditure responsibilities, (iii) Areas of financial sources, by identifying national and international financing options; and (iv) A governance framework for climate change funds under the national fiscal policy (Ampri, 2013). By so doing, the CFF provides an account of fiscal developments and resource estimates for short-, medium-, and long-term climate expenditures. It also supports analysis of to what extent climate change-related expenditures are being integrated into

national budgetary processes. In the climate fiscal framework, ‘climate finance’, ‘climate expenditures’, and ‘climate-related expenditures’ expressions are used interchangeably, referring to adaptation- and mitigation-related finances and expenditures.

The framework also focuses on how financial intermediaries, financial instruments and financial planning systems can be designed to enhance the flow of climate finance from its source to its end use (Figure 3). This will help in mobilizing the scale of finance required to achieve the financing needs of climate-related investments. The climate fiscal framework helps answer the following questions. How much climate finance is needed from different sources to deliver low-carbon and climate-resilience development pathway? How much investment is already flowing? Who are the key actors? And what is the balance between different forms of climate finance (e.g. public versus private resources)? How does the sectoral composition of climate finance look like?

Figure 4: Key elements of climate fiscal framework



Source: Own construction

As indicated above, the CFF helps (UNDP, 2014): (i) identify existing expenditures and modalities for delivering climate-related finance; (ii) identify additional expenditure requirements, (iii) estimate financing gaps and modalities for delivering further sources of public investment (external and domestic); and (iv) create an enabling environment for private financial flows.

2.2.4 Weighting climate related expenditures

General guidelines also exist in classifying the relevance of climate change related activities under the climate public expenditure and institutional review (CPEIR) methodology (Bird *et al.*, 2012a). An activity or expenditure component is said to be of:

- high climate change relevance if it has clear primary objective of delivering specific outcomes that improve climate resilience or contribute to mitigation,
- medium climate change relevance either its secondary objectives related to building climate resilience or contributing to mitigation, or mixed programs with a range of activities that are not easily separated but include at least some that promote climate resilience or mitigation, and
- low relevance to climate change if activities have only very indirect and theoretical links to climate resilience.

Relevance is defined as (Bird *et al.*, 2015) ‘relevant to: (i) improving climate resilience (for adaptation) or (ii) to mitigation of climate change’. However, programmes that address (i) and (ii) are already in national development budgets to address the ‘adaptation’ or ‘development deficit’ which makes the identification of expenditures as climate relevant or not climate related difficult. There is subjectivity in defining how relevant different types of activities and expenditure are to climate change. It should be noted that the issue of ‘relevance’ needs to be based on stated policy objectives, rather than evidence that funds are actually being utilised to contribute to goals of climate change mitigation and adaptation (Bird *et al.*, 2012b).

The literature provides guidance on weighting climate relevant activities and transactions. The OECD Rio markers methodology helps assigning weights to climate relevant by categorizing expenditures into three groups based on objectives of programs or interventions. For programs where climate is the principal (primary) objective, the methodology assigns a weight of 100 percent. If climate is a significant, but not predominant objective, then it is considered as 40 percent climate related. In other expenditures where climate is not the target objective, the methodology assigns a weight of zero percent. A recent CPIER methodology offers rather detailed weighting assignments and provides more flexible options in terms of capturing activities and transactions (UNDP, 2015). In the CPIER weighting methodology, there are four weighting categories (Table 3).

Table 3: CPEIR weighting methodology

Relevance	Rational	Weight (%)
High	Clear primary objective of delivering specific outcomes that improve climate resilience or contribute to mitigation	≥ 75
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	Between 50 and 74
Low	Activities that display attributes where indirect adaptation and mitigation benefits may arise	Between 25 and 49
Marginal	Activities that have only very indirect and theoretical links to climate resilience	Less than 25

Source: UNDP (2015)

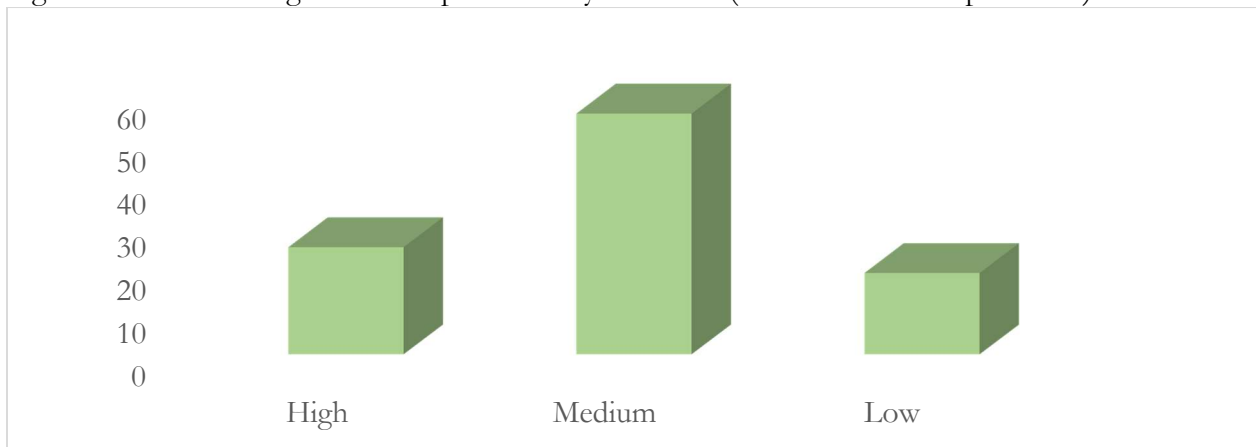
2.3 The Ethiopian context: Climate change related expenditure

In response to the growing risk resulting from climate change, the Government of Ethiopia adopted a Climate Resilient Green Economy (CRGE) strategy to deal with current as well as future impacts of climate change in 2011 (FDRE, 2011). The goal of the CRGE strategy is to transform the economy from low income country status to a lower middle income status by 2025, through rapid growth and investment in a low carbon and climate resilient development (LCCRD) pathway. This investment pathway is expected to achieve, protect and enhance development gains made by government, households and other actors in the context of escalating climate change impacts. The green economy strategy takes an economy-wide approach to achieving development goals whilst limiting greenhouse gas emissions in 2030 to 2010 levels, which are estimated at 150Mt CO₂e (FDRE, 2011). However, achieving this target requires significant climate related investment, in the order of USD 7.5 billion per year. Although the formulation of CRGE strategy and other sectoral strategies and their subsequent integration into the national development plan reflect government's commitment towards addressing current and future climate change risks, there is a knowledge gap in estimating the size of climate change related spending in the country.

Eshetu *et al.* (2014) made the first attempt in estimating the magnitude of public budget allocation to climate change in Ethiopia using the CPEIRs methodology. The study indicated that the estimated average annual percentage share of climate change related public expenditure accounted for about 15 percent of total government expenditure or 1.8 percent of GDP between 2008/2009 and 2011/2012. This estimate doesn't include off-budget climate change related expenditure. Domestic finance sources covered a large (80 percent) proportion of total climate change related public expenditure in 2011/12, while external finance sources accounted for only 20 percent, indicating that this country appears to depend primarily on its own resources for financing public activities designed to address climate change.

In terms of relevance, most climate change-relevant spending was concentrated in medium relevance expenditures, indicating that climate change was one of several objectives of public expenditure. This seems consistent with government's strategy that focuses on economic development and transformation with due consideration of climate change. Medium relevant climate change expenditures account for just over half (56 percent) of the total climate change expenditure between 2008/2009 and 2011/2012, while high relevant climate change expenditures accounted for about 25 percent share of total public expenditure. Low relevant climate change activities expenditure accounted for the remaining.

Figure 5: Climate change related expenditure by relevance (Percent of total expenditure)



Source: Eshetu *et al.* (2014)

The study by Eshetu *et al.* (2014) was the first attempt in estimating climate change related public expenditure in Ethiopia and provided pertinent information on the magnitude and sources of climate change related public expenditure. However, there are certain gaps which need to be addressed. First, the study focused on federal government's spending on climate change only, but spending by regional

governments has not been included. Second, spending on climate change related activities by other non-state actors including off-budget spending was not considered in the analysis. Third, the period covered by the study was largely before the adoption of the CRGE strategy. There are quite significant changes and initiatives taking place since the official launch of the strategy which likely increase the magnitude of climate change related spending by both the government and private sector. In addition, following recent global commitments (e.g. The Paris Agreement on climate change), the sources and types of climate change related finance could potentially change. Thus, there is a need to capture recent developments and estimate the extent of climate change related expenditure in the country. A comprehensive understanding of economy-wide estimate of climate change related spending is required for the following reasons. First, it is useful to have information on the relative contributions of government and non-government sectors to climate change spending. Second, a full account of climate change related spending is used to forecast the balance between the flow of climate change finance and demand for climate change investments in the future. This requires designing a methodology to assess recent trends in development finance in general and climate change finance in particular, and estimate economy-wide climate change related expenditure in Ethiopia. This methodology is also used to forecast both the demand and supply of climate change finance in the future in Ethiopia.

3. Quantifying climate transactions in Ethiopia

3.1 Definition of climate finance in Ethiopia

In the Ethiopian context, climate finance refers to flow or allocation of funds from public, private, bilateral and multilateral sources toward financing *adaptation* and *mitigation* initiatives as specified in the CRGE Strategy and GTP-II. The literature provides guidance on the distinction between adaptation and mitigation aspects of climate change responses (OECD, 2011). Adaptation refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. An activity is classified as climate change adaptation related if it intends to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience (IDFC, 2014).

Mitigation refers to human interventions to reduce the sources, or enhance the sinks, of greenhouse gases (GHGs). Hence, an activity is classified as climate change mitigation related if it contributes to reducing, avoiding greenhouse gas (GHG) emissions or to enhance GHG sequestration (IDFC, 2014). Hence, all climate change mitigation actions are intended to reduce or avoid the concentration of atmospheric GHGs. This conceptualization of climate finance is consistent with Ethiopia's CRGE strategy and the international climate finance architecture. The relative importance of finance towards adaptation and mitigation may change over time. In the short to medium-term, climate finance targeting adaptation measures may constitute a lion's share as the country's contribution to GHG emission is low. However, with envisaged transformation and structural change, the relative size of climate finance towards low carbon development activities may increase. The balance of actions aimed at addressing the two policy objectives provides important information on the nature of the government's response to the public policy challenge of climate change. Thus, the operational definition of climate change finance in Ethiopia includes any finances sources towards financing adaptation (A), mitigation (M) and a combination of A&M interventions.

3.2 Identification of climate change relevant initiatives

A practical challenge relates to identifying climate change expenditure within the national budget is setting an operational definition of what constitutes climate finance in the Ethiopian context so that the most important aspects of climate change spending can be analysed. First, based on national and

sectoral policies and strategies as well as literature as a guide, sectoral activities or programs will be classified as climate sensitive. In particular, the CRGE strategy, Sectoral Climate Resilient (SCR) strategies, the Intended National Determined Contribution (INDC) and other relevant documents are used to classify sectoral activities or programs. According to the CRGE strategy and Ethiopia's Intended Nationally Determined Contributions (EINDC)⁹, programs and activities that contribute to reducing greenhouse gas emission (M) and reducing the vulnerability of the Ethiopian population (A), environment and economy to the adverse effects of climate change can be considered as climate relevant. In addition, for specific programs or initiatives where climate is the principal or significant objective, then it can be considered as climate change related.

The second step involves, using the first step as a guide, identifying climate related activities and programs as indicated in the second Growth and Transformation Plan (GTP-II) as well as sectoral development plans. This provides list of climate related activities across sectors and over time. This step intends to establish the link between development plans and CRGE policy objectives and classification of budget items. Note that some activities could have both adaptation and mitigation (A/M) components, creating the theme of adaptation and mitigation element.¹⁰ So, activities can be divided into four themes: adaptation, mitigation, A/M and supporting areas. Each climate sensitive sector selected from the first step will be linked to themes and activities.

3.3 Weighing of climate change relevant initiatives

With climate relevant initiatives identified, the next step involves weighting of climate change related activities based on the Rio+ climate marker which considers the responsiveness of policies and their programs to the vulnerability of people and areas to climate change. The Rio+ climate markers (or policy markers) is used to mark each funded program or project as either (i) targeting climate change as a 'principal objective' or (ii) a 'significant objective', or (iii) not targeting the objective. Note that the difference between a 'principal' or 'significant' objective is that the former implies that budget or finance would not have been allocated but for that objective, while the latter refers to a budget has

⁹ See <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Ethiopia/1/INDC-Ethiopia-100615.pdf>

¹⁰ Examples include renewable energy development (mitigation) in a remote village primarily to provide electricity for groundwater pumping to maintain subsistence agricultural production (adaptation); the development of drought-resilient fodder crops for livestock husbandry (adaptation) specifically bred to reduce GHG gas emissions from livestock digestion processes (mitigation).

been allocated to help meet the objective (OECD, 2011).¹¹ The ‘principal objective’ is fundamental in the design of the program or project and which are an explicit objective of the program or project, while ‘significant objective’ is one of the main reasons for undertaking a program or project. The answer to the following question can help distinguish between ‘principal objectives’ and ‘significant objectives’: *Would the program or project have been undertaken without its indicated objective?* If the answer to this question is ‘yes’, then it can be categorized as “significant’, otherwise ‘principal’.

Table 4: Criteria for eligibility for the Rio+ marker methodology

A program or project is eligible for the climate change adaptation/ mitigation marker if:	
Climate Change Adaptation	the climate change adaptation objective is explicitly indicated in the activity documentation, and the program or project contains specific measures targeting climate change adaptation
Climate Change Mitigation	contributes to the mitigation of climate change by limiting anthropogenic emissions of GHGs, including gases regulated by the Montreal Protocol; or contributes to the protection and/or enhancement of GHG sinks and reservoirs; or contributes to the integration of climate change concerns with development objectives through institution building, capacity development, strengthening the regulatory and policy framework, or research; or helps to meet other climate change obligations

Source: OECD (2011)

A budget or fund that targets both mitigation and adaptation objectives can be simultaneously marked for both to reflect this overlap in objectives. Thus programs and projects need to be mapped against their declared objectives as per the Rio markers methodology. The template for data collection is annexed.

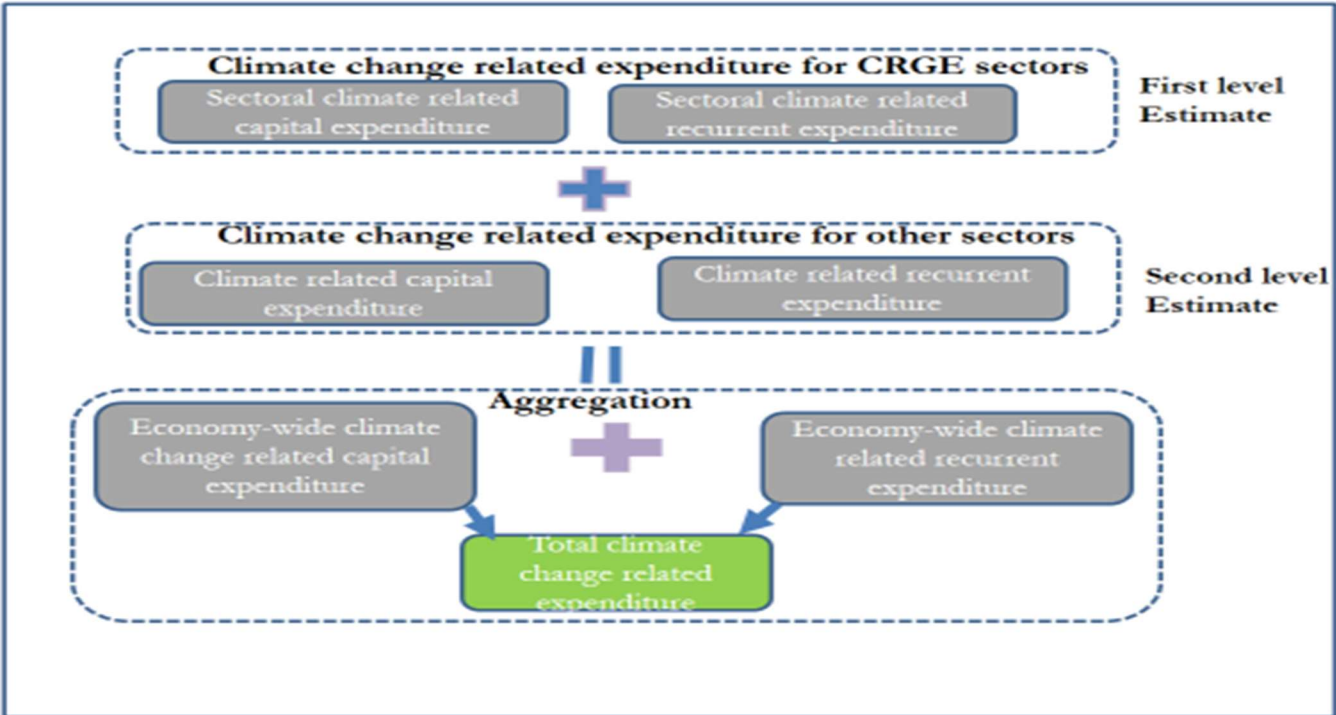
3.4 How much has been spent in climate change related activities?

Having identified climate change related programs or projects, the next step is assessing the proportion of the budget line that is related to climate change outcomes according to the weighting criteria indicated above. Programs and projects will be categorized according to climate change related expenditure and ranked from highly-relevant (greater than or equal to 75 percent of expenditure line item) to marginally relevant (≤ 25 percent) expenditure line items. Then mapping budget allocations against the marked programs and projects will be made which will capture budget allocation and expenditure on climate change relevant interventions in the country. This assessment involves both actual and planned expenditures on climate related activities and programs.

¹¹ The Rio+ climate marker was initially designed to track climate change related development assistance.

In terms of the practical implementation, a layered approach is suggested. First, identification of climate expenditures will be made for climate sensitive sectors as indicated in the CRGE strategy and SCR strategies. This takes a ‘prioritised’ approach to identifying climate change relevant expenditure for the CRGE sectors, and then drills down into the details of sector financing in order to identify and categorise expenditures. This provides the first level, perhaps conservative estimate of climate change related expenditures. Finally, with CRGE sectoral expenditures identified, a lower and detailed level analysis is to undertake stock of climate change relevant expenditures by programs and activities by including sectoral CR investment needs not indicated in the CRGE strategy. At the lower level, those climate change relevant activities and expenditures undertaken by other actors are considered and will be included in the climate change related expenditure analysis.

Figure 6: A layered approach to climate change relevant expenditure classification



Source: Own construction

3.5 Projecting financial needs for climate-related investments

3.5.1 Projecting climate relevant expenditures

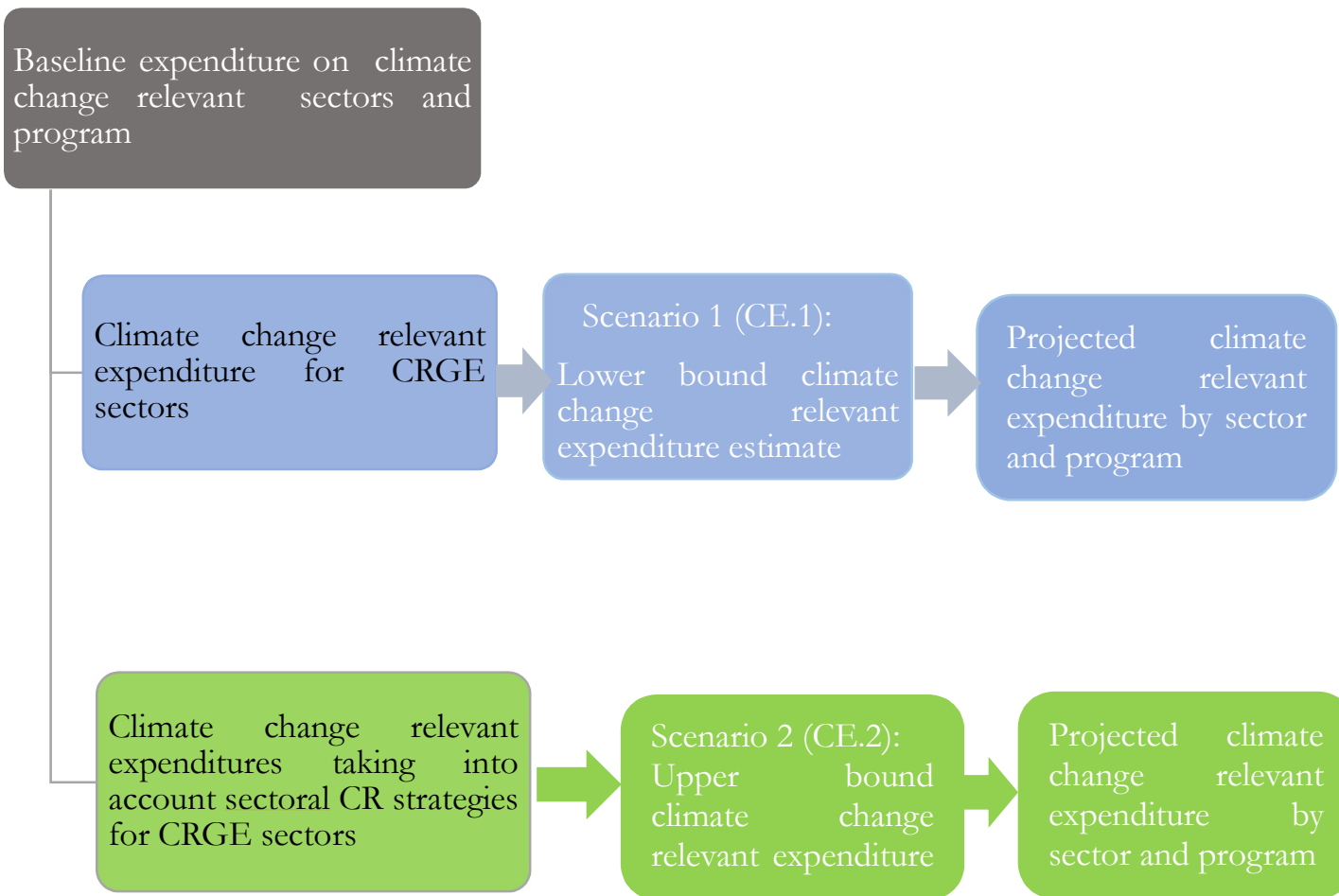
The Government of Ethiopia has mainstreamed the CRGE strategy into its second Growth and Transformation Plan (GTP-II), which is the main guiding plan for the period covering 2015/16-2019/20. With the baseline climate relevant activities and expenditures identified, climate investment projection needs to be made for the GTP-II period (Figure 4). Since most sector ministries and institutions undertaking climate relevant activities do not have costed plans for actions to combat potentially negative climate change effects, there is little means of estimating future expenditures that might be incurred. In these cases, projections of future climate costs will be mainly based on past expenditure trends. Two scenarios will be used to estimate and project climate investment expenditures between 2015/16-2019/20.

Scenario 1 (CE.1)¹²: The first scenario considers climate investment expenditures as reflected in GTP-II. This provides a lower estimate of climate change relevant expenditures since it does not include sectoral climate resilient expenditures for some sectors.

Scenario 2 (CE.2): The second scenario considers climate change relevant expenditures included in GTP-II (including sectoral plans) and those climate change relevant expenditures indicated in the sectoral climate resilient strategies and other actors which are not included in GTP-II. This scenario captures total climate change relevant expenditures by sector and program.

Figure 7: Projecting climate change relevant investment expenditures

¹² 'CE' refers to scenario for *climate relevant expenditure*.



Source: Own construction

3.3.2 Projecting climate relevant finance

Having estimated and forecasted climate change relevant expenditures, the next task will be to identify the mode of financing. This involves assessing the various climate finance sources to demonstrate the relative importance of different climate finance sources based on CRGE documents, GTP-II investment projections, sectoral programs, etc. Note that an array of climate finance sources will be considered such as government treasury, multilateral development banks, private sector, and climate-related ODA. Official finance comes from domestic and international sources and is divided into concessional and non-concessional flows. Other Official Flows (OOF) denotes non-concessional international public flows: primarily loans by Multilateral Development Banks (MDBs), Development

Finance Institutions (DFIs), as well as public guarantees, insurance, and export credits (Schmidt-Traub and Sachs, 2015). For accounting purposes, climate finance is separated from domestic and international sources of finance (e.g. DBR-CF, ODA-CF and OOF-CF). Private financing is divided into two categories: (i) Private Funds Mobilized (PFM) through DBR, ODA, and/or OOF that support development and climate change finance, and (ii) commercial finance, such as foreign direct investment that does not rely on public co-financing.

Table 5: Potential sources of finance for development and climate change

		Official (Public)		Private	
		Concessional	Other official flows (OOF)	Private funds mobilized (PFM) through official flows	Commercial private finance
Domestic	Domestic budget for development	Domestic Budget Revenues (DBR)		Domestic Private Funds Mobilized (DPFM)	Domestic private commercial (DPC)
	Domestic climate finance (CF)	DBR-CF		DPFM-CF	DPC-CF
International	Finance for development	Official Development Assistance (ODA)	Other Official Flows (OOF)	International PFM (IPFM)	International private commercial (IPC)
	External climate finance	ODA-CF	OOF-CF	IPFM-CF	IPC-CF

Source: Based on Schmidt-Traub and Sachs (2015)

Looking forward, a climate finance projection framework is proposed to estimate the potential climate finance sources during the GTP-II period and beyond (possibly up to 2030) (Figure 5). The framework is based on different scenarios and assumptions such as historical growth rates and factors affecting different sources of climate relevant finance derived from various documents. First, baseline data will be generated for each finance source. Second, adjustments will be made such as removing overlap in the finance sources. Next, scenarios will be developed. For the sake of brevity, two scenarios will be considered.

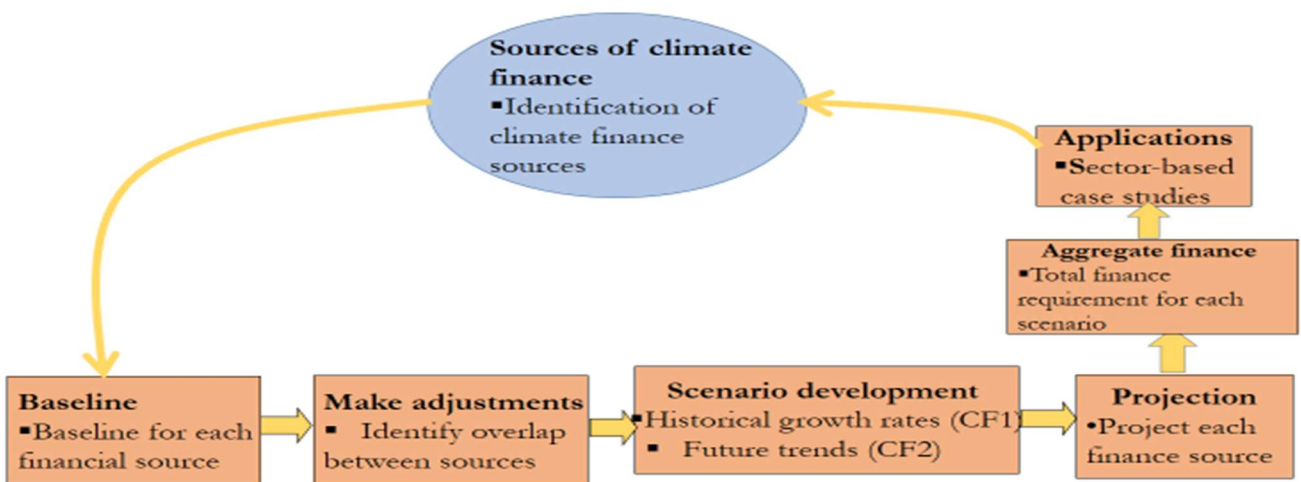
Scenario 1 (CF.1)¹³: In this scenario, each climate finance sources will be assumed to grow at their respective historical average growth rates over the projection period. The growth rates will be applied to each source.

¹³ 'CF' refers to scenario for climate relevant finance source.

Scenario 2 (CF.2): This scenario considers future prospects and likely trends of the different climate finance sources which help adjust their growth rates. Based on the adjusted growth rates, each climate finance sources will be projected.

Based on the above scenarios, different climate finance sources trends will be evaluated which help identify anticipated financing gaps and articulate challenges facing the country in terms of mobilizing climate finance. The objective of this exercise is to extrapolate from current trends to estimate climate finance during the GTP-II period and beyond (possibly up to 2030) along with estimates of climate finance needs required to achieve the targets as stipulated in the INDC.

Figure 8: Steps in climate finance projection by source and activity



Source: Based on Westphal *et al.* (2015)

In summary, a combination of approaches will be followed in estimating climate change related expenditure. While the development finance assessment framework can be used to identify sources of finance (domestic and external finance sources), the CPEIRs and climate fiscal framework are used to estimate climate change related activities and expenditures as well as help weight and rank climate change related activities. The following steps will be followed.

Step 1: Definition of climate finance;

Step 2: Identification of climate change relevant programs and projects based on the list of climate relevant initiatives listed in the CRGE strategy, GTP-II, INDC, NAP, etc.;

Step 3: Weighting of climate change programs and projects based on the Rio+ climate marker;

Step 4: Mapping budget allocations against the marked programs and projects;

Step 5: Analysis of current climate change related expenditures;

Step 6: Analysis of current climate finance by source; and

Step 7: Forecast climate change related expenditure and climate finance and identify the gap between the two. This will provide an estimate of how much more climate finance will be required from each source.

Reference

- African Development Bank (2009), *Financial Sector Policy Reforms in the Post-Financial Crisis Era: Africa Focus*, Working Paper Series 100, July 2009.
- AP-DEF and UNDP (2016), *Achieving the Sustainable Development Goals in the era of the Addis Ababa Agenda: progress on establishing integrated national financing frameworks in the Asia Pacific Region*, Bangkok, Thailand.
- Ampri, I. (2013), Fiscal framework for Indonesia's green economy in the context of REDD+', Fiscal Policy Agency, Ministry of Finance, Indonesia.
- Bird, N., Asante, F., Bawakyillenuo, S., Trujillo, N., Eshetu, Z., Tumushabe, G., Yanda, P., Norman, M., Tagoe, C., Amsalu, A., Ashiabi, N., Mushi, D., Muhumuza, T., Kateka, A. and Simane, B. (2016), Public spending on climate change in Africa: Experiences from Ethiopia, Ghana, Tanzania and Uganda, Overseas Development Institute, UK.
- Bird, N. (2014), *Fair share: climate finance to vulnerable countries*, Overseas Development Institute (ODI), UK.
- Bird, N., Beloe, T., Hedger, M., Lee, J., Nicholson, K., O'Donnell, M., Gooty, S., Heikens, A., Steele, P., Mackay, A., and Miller, M. (2012a), Climate public expenditure and institutional review (CPEIR) methodological note: a methodology to review climate policy, institutions and expenditure, A joint UNDP / ODI working paper.
- Bird, N., Beloe, T., Hedger, M., Lee, J., Nicholson, K., O'Donnell, K., and Steele, P. (2012b), The Climate Public Expenditure and Institutional Review (CPEIR): developing a methodology to review climate policy, institutions and expenditure. UNDP/ODI.
- Climate Policy Initiative (2014), *The Global Landscape of Climate Finance 2014*, CPI Report.
- Eshetu *et al.* (2014), *Climate finance in Ethiopia*, Overseas Development Institute, London, UK.
- Falconer, A., and Stadelmann, M. (2014), What is climate finance? Definitions to improve tracking and scale up climate finance: A Climate Policy Initiative Brief.
- IDFC (2014), IDFC green finance tracking methodology, International Development Finance Club.
- Intergovernmental Panel on Climate Change (2013), *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. [T.F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)] Cambridge, UK and New York: Cambridge University Press.

- Kharas, H., Prizzon, A. and Rogerson, A. (2014), *Financing the post-2015 sustainable development goals (SDGs)*, Overseas Development Institute (ODI), UK.
- OECD (2011), *Handbook on the OECD – DAC climate markers*, Paris: OECD.
- Savage *et al.* (2014), *Climate finance and water security Ethiopia case study*, Oxford Policy Management, London, UK.
- Stratta, N. (2017), *Building Integrated National Financing Frameworks: A compendium of country experiences*, UNDP and the Asia-Pacific Development Effectiveness Facility, Bangkok, Thailand.
- UNFCCC Standing Committee on Finance (2014), “Biennial Assessment and Overview of Climate Finance Flows Report 2014”, Bonn, Germany.
- UNDP (2014), *Bangladesh Climate Fiscal Framework*, Dhaka.
- UNDP (2015a), *A methodological Guidebook: Climate Public Expenditure and Institutional Review*, Governance of Climate Change Finance; www.ClimateFinance-DevelopmentEffectiveness.org
- UNDP (2015b), *Budgeting for climate change: How governments have used national budgets to articulate a response to climate change; Lessons Learned from over twenty Climate Public Expenditure and Institutional Reviews*, *Governance of Climate Change Finance*, (UNDP Bangkok Regional Hub).
- Withana, S., Baldock, D., Illés, A., Rayment, M., and Medarova-Bergstrom, K., (2014), *Tracking system for climate expenditure in the post-2013 EU budget: Making it operational*, Final summary report for the European Commission-DG CLIMA, Institute for European Environmental Policy, London/Brussels.
- Watson, C., Nakhooda, S., and Caravani, A. (2012), *The practical challenges of monitoring climate finance: Insights from Climate Funds Update*, Climate Finance Policy Brief.
- World Bank (2013), *Financing for development: Post-2015*, Washington DC.
- World Bank (2012), *Global Financial Development Report 2013: Rethinking the Role of the State in Finance*, World Bank, 2012.
- World Bank (2010), *Annual Report 2010*. Washington DC: World Bank. Available at: <http://siteresources.worldbank.org/EXTANNREP2010/Resources/WorldBank-AnnualReport2010.pdf>

Annexes