Guidelines for Building a National Landscape of Climate Finance

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CLIMATE
POLICY
INITIATIVE

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ABOUT CPI

CPI is an analysis and advisory organization with deep expertise in finance and policy. Our mission is to help governments, businesses, and financial institutions drive economic growth while addressing climate change. CPI has six offices around the world in Brazil, India, Indonesia, Kenya, the United Kingdom, and the United States.

SECTOR

Climate-related Finance

REGION

National

KEYWORDS

Climate finance tracking, Domestic climate finance tracking

RELATED CPI WORKS

Uncovering the Private Climate Finance Landscape in Indonesia

Global Landscape of Climate Finance 2019

Global Landscape of Climate Finance 2019 - Methodology

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CONTENTS

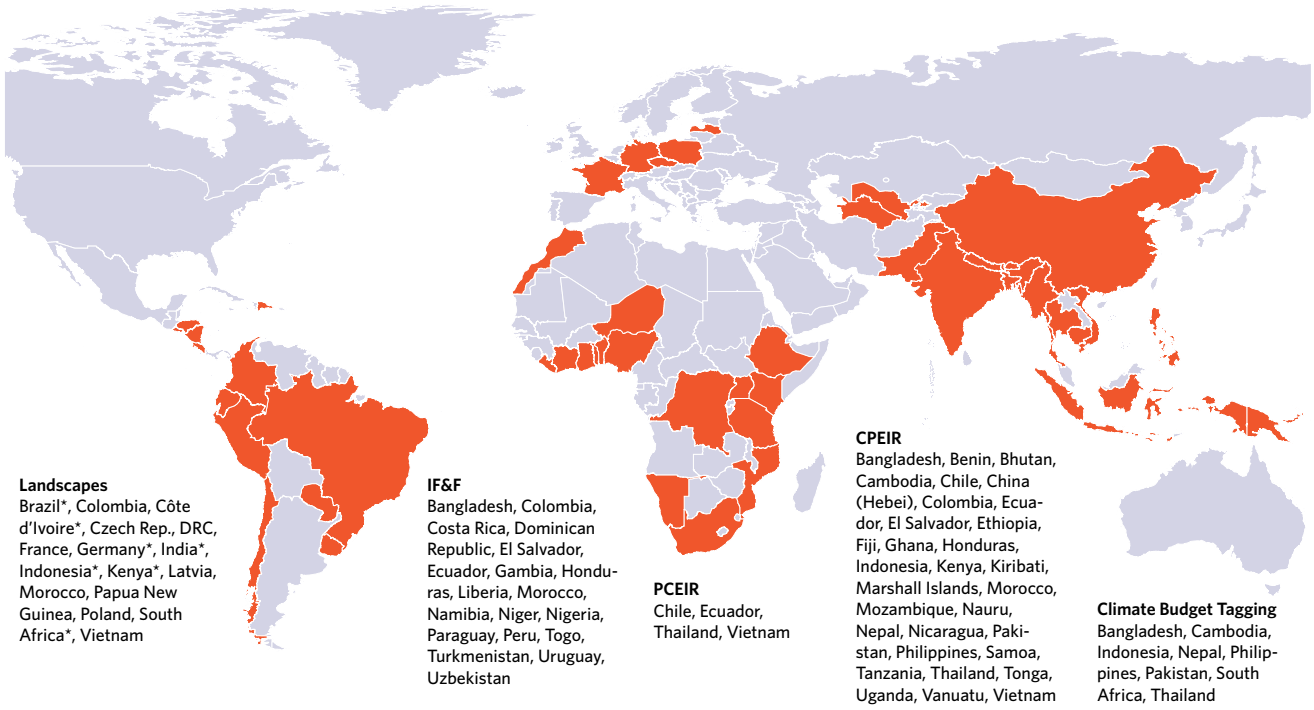
1. INTRODUCTION

Since 2011, Climate Policy Initiative (CPI) has produced The Global Landscape of Climate Finance series (the Landscape), which is the most comprehensive inventory of climate change investment available. It provides a visual and descriptive snapshot of how much and what kind of finance is flowing toward low carbon and climate resilient actions globally in order to identify gaps and opportunities to scale-up investment. When updated regularly, such analysis can also reveal trends in climate finance over time.

Over the years, CPI has worked with local partners to produce national landscapes of climate finance, including for Germany, Côte d'Ivoire, Indonesia, India, Kenya, and Brazil[1]. Figure 1 highlights the countries that have developed, or are in the process of developing, national landscapes of climate finance using CPI's methodology. It also shows the countries that have carried out national climate finance tracking using methods and tools from other organizations, most notably the Climate Public Expenditure and Investment Review (CPEIR)[2], and Private Sector Climate Expenditure and Institutional Review (PCEIR)[3], the Investment and Financial Flows (IF&F)[4] approaches supported inter alia by the United Nations Development Programme (UNDP). Countries that have designed and applied Climate Budget Tagging (CBT)[5] in their Public Financial Management System are also included.

1 The national landscapes for Kenya and Brazil are underway and yet to published.
2 CPEIR: Climate Public Expenditure and Investment Review', is a systematic analysis of country's public expenditure and its relationship to climate change. https://www.climatefinance-developmenteffectiveness.org/about/what-cpeir. The first CPEIR country was published in 2011.
3 PCEIR: Private Sector Climate Expenditure and Institutional Review enables countries to meet their mitigation cost by using public sector funds to leverage private investments. https://ndcpartnership.org/toolbox/private-sector-climate-expenditure-and-institutional-review-pceir
4 IF&F allows are forward looking assessments that allows quantifying costing of NDC implementation and inaction based on climate change impact by sector. https://www.ndcs.undp.org/content/ndc-support-programme/en/home/our-work/focal/ndc-finance-and-investment/investment-and-financial-flows--iff--assessments.html
5 Climate Budget Tagging (CBT) is a tool for monitoring and tracking of climate-related expenditures in the national budget system. https://www.climatefinance-developmenteffectiveness.org/topic/climate-budget-tagging-cbt

Figure 1: Previous and ongoing national climate finance tracking initiatives



Note: Landscapes marked with* are co-produced by CPI. This is graphic is based on available information at the time of writing the report. Non-Annex I Parties, mostly developing countries, report in their biennial update reports (BURs)submissions to UNFCCC on the financial, technical and capacity building needs and support received for activities relating to climate change.

This document draws on CPI's experience developing several national landscapes of climate finance in various countries throughout the past ten years. While not a comprehensive instruction manual, we hope that this will help guide government officials and practitioners looking to track climate finance using our Landscape approach. Throughout this document, we aim to provide answers to some of the key questions that may emerge at different stages when completing a national climate finance tracking exercise. This document borrows from the Land-use Finance Tool (EFI and CPI, 2018), developed by the European Forest Institute and CPI, expanding from land use sectors to all major mitigation and adaptation sectors.

In this document, we outline the process for developing a national climate finance landscape in four steps. By working through each step, countries will learn key insights to how, when, and from whom finance is flowing towards climate action. Figure 2 summarizes the objectives and key parameters for each step. Early consideration of the desired outcomes of the landscape of climate finance work will help to focus analytical efforts including scope and approach.

Figure 2: Key steps in tracking domestic climate finance

Objective

Develop a vision for the project and set a clear purpose, in context of stakeholder engagement.

Identify elements of the national climate finance mapping framework.

Identify data sources and fill potential gaps.

Understand options for data consolidation, data analyzing and how to present and interpret results and inform policy or project processes.

Key Considerations

- Scoping dimensions
- Sources and types of finance
- Stakeholder mobilization

- Defining climate finance
- Categorizing investments
- Dimensions of the flows

- Sources of data
- Data gaps and limitations

- Selection and cleaning the datasets
- Key qualitative and quantitative questions
- Format of the output

BENEFITS OF TRACKING NATIONAL CLIMATE FINANCE

Clear information about climate finance flows at the national level is crucial to achieving economy-wide transformation to support low carbon and green growth. Such information helps to identify gaps and opportunities, measure, and benchmark progress, and optimize the deployment of domestic budgetary resources in a way that can effectively and efficiently unlock private investment at the transformational scale needed (EFI and CPI, 2018). Furthermore, this information can be instrumental in the implementation of the enhanced transparency framework (ETF) of the Paris Agreement by countries and feed into the first 'Global Stocktake' in 2023[6] to assess the collective progress towards achieving long-term climate goals.

In Table 1 we summarize key ways in which climate finance tracking can support the policy process by using examples from national landscapes published (or forthcoming) by CPI and other organizations.

6 Article 14 of the Paris Agreement requires a periodic stocktake of its implementation and to assess collective progress towards achieving the purpose of the Agreement and its long-term goals. The first global stocktake will take place in 2023 and occur every five years thereafter.

Table 1: Key benefits and outcomes of tracking national climate finance

Key Objectives	Benefits for relevant stakeholders	Examples
Monitoring, evaluation, and reporting ***Helps increase transparency, accountability, and trust among relevant stakeholders. It can inform international and national reporting on support received vs. support needed or help to fulfil specific donor reporting requirements.***	**National and sub-national governments** Facilitate developed and developing countries reporting on international commitments and contribute to the ETF (Enhanced Transparency Framework7) requirements. **Donor governments, developmental financial institutions, and international funds** Improved monitoring reporting and verification (MRV) systems can increase coordination and accountability among different capital providers.	**The Landscape of Climate Finance in Kenya (forthcoming)** Supports the implementation of Kenya's Nationally Determined Contribution (NDC) by providing the National Treasury with a baseline and methodology for collecting and reporting on climate expenditure data from the public and private sector.
Planning, budgeting, and awareness ***To understand the nature and magnitude of domestic and international climate finance, and set a baseline understanding of climate finance flows which can be tracked subsequently over time.***	**National and sub-national governments** Stronger guidance on the integration of safeguards or activities in budget programing. Specific policy reforms to adapt goals to the reality of spending and investments. Specific financial mechanisms and instruments to leverage or redirect greater amounts of finance to climate finance activities. **Public and private actors including civil societies and advocacy groups** Improves transparency on government actions and allocation of resources. Opportunity to initiate a discourse on the political action needed to create transformative policies.	**The Landscape of Climate Finance in Indonesia (CPI, 2014 and CPI, 2020b)** Feeds directly into the Finance Ministry's efforts to enhance the budgeting systems to better track, monitor, and report climate finance across several line ministries in support of implementing its NDC.

7 https://unfccc.int/enhanced-transparency-framework

Resources mobilization ***Acts as a basis for cross-sectoral, cross-government, and government-donor discussions on the priorities for resource mobilization for climate action.***	**National and sub-national Governments** Provides evidence on the government's existing climate spending, estimating the existing funding gap. Informs government engagement with development partners to broaden efforts to mobilize additional resources. **Private actors including financial sector, commercial lenders, and investors** Increased transparency can help mobilize private capital by reducing the risks and/or capital cost for the private sector. **Public actors including developmental financial institutions and international funds** Improved MRV and reporting systems can lead to more strategic allocation of support and help align private and investments with the national climate objectives.	**The Landscape of Climate Finance in France (I4CE, 2018)** Provides a basis for public debate on the mobilization of climate finance by presenting investments in relationship to energy transition objectives.

Cleary defining the objectives (e.g. MRE, planning, resource mobilization, to identify opportunities and raise ambition) is key to ensure that a) the desired outcomes from the study are achieved and; b) the scope and framework is set accordingly. For instance, if the objective of the study is to align investments with the Paris Agreement, then a landscape should consider tracking both private and public actors, and their investments in not only climate aligned activities but also environmentally harmful activities (see section 3.2 for more details).

2. STEP 1: SCOPING OF THE NATIONAL LANDSCAPE OF CLIMATE FINANCE

A key step when tracking national climate finance is to define the scope of the exercise. Outlining the desired outputs and outcomes beforehand, based on the intial objectives of the study, will help develop the project plan and focus the analytical efforts while saving time and resources.

2.1 KEY SCOPING DIMENSIONS

The scope of the analysis should be determined in consultation with key stakeholders at the outset of the study and may include the following dimensions.

Table 2: Key scoping dimensions for developing a climate finance landscape

Sector focus	In order to identify which sectors to focus on, it is important to address key questions, including: Are both adaptation and mitigation of primary concern? What are the major greenhouse gas (GHG) emitting sectors? How are these sectors likely to change in the future? Which activities are involved in these sectors? Which actors are involved in these activities? Certain sectors might be interesting for a country seeking opportunities for additional external funding and could be the focus of a targeted climate finance tracking. It may also depend on the client requirements or mandates. For example, tracking of financial flows contributing to France's climate targets is a legal obligation (IKEM and I4CE, 2019) and used to inform public debate on the financing of 'Energy Transition for Green Growth Act.' It provides some guidelines to the type of investments to be captured across five key economic sectors - energy efficiency, renewable energy, sustainable infrastructures, nuclear power, and non-energy processes. Inclusions and exclusions for the sector will largely depend on which taxonomic approach is being followed and how its climate relevance is defined. Section 3 elaborates the definitions and typology of CPI's suggested approach.
Geographic scope	Depending on the priorities and the structure of domestic financial systems, tracking can focus on national and/or sub-national (regional, state or, city level) flows. Tracking sub-national climate finance could be particularly useful in countries with decentralized governance and budget systems. However, it may be challenging to access, aggregate, and consolidate data.
Temporal coverage	Setting the timeframe of the analysis can be: Annual vs. Multiple year: While tracking over a multiple year period will allow for a more comprehensive landscape and overview of trends, this will likely require more work to gather data and reconcile any inconsistencies across the years covered. Ex-post vs. ex-ante: CPI's landscapes of climate finance have focused on tracking past expenditures and investments. It would be possible to prepare an ex-ante landscape to show planned flows e.g., *Landscape of Climate Finance in Central Highlands, Vietnam* by EU REDD Facility and Central Institute for Economic Management tracked planned or ex-ante data for 2016 - 2020 (EFI and CPI, 2018).

Commitments and/or disbursements	Commitments are defined as financial obligations backed by necessary funds made at the time of financial close of a project contract (or similar actions). When tracking national climate finance, it may make more sense to track disbursements as opposed to commitments, as this will align closer to budgets. For example, the *Landscape of Green Finance in India (CPI, 2020)* captured annual financial disbursements supporting emission reduction or mitigation activities based on empirical data. While the *Landscape of Climate Finance in Indonesia* aims to track both financial commitments and disbursements (when available).
Primary and/ or secondary transactions	Most landscapes capture primary transactions representing investment into new productive assets targeting green outcomes. Secondary market transactions - such as non-project bonds, listed or unlisted equities, mergers and acquisitions, insurance, and reinsurance - do not necessarily represent new money targeting climate-aligned outcomes, but rather money changing hands. However, depending on the scope of exercise such information could be useful for actors (both private and public) seeking to align their investment portfolios with the goals of the Paris Agreement, especially Article 2.1c which calls for making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development. Also, gathering information on post-issuance reporting by green bond issuers can contribute to gathering project-level data on corporate and financial institution investments in climate friendly projects.
Climate vs. non-climate flows	Depending on the objectives of the study, the landscape can track activities, assets, and projects that are climate aligned, climate mis-aligned (i.e. environmentally harmful flows), or transition finance which aims to start a transition from high to low carbon intensity, but does not necessarily reach the ultimate goal. See section 3.2 for more details.

2.2 SOURCE AND TYPE OF FINANCE

National landscapes of climate finance can focus on tracking only public domestic, international, or private sector climate finance depending on the scope of the study and the availability of data and resources. If the sources and data allow, ideally national landscapes would cover both public and private investment to provide a more comprehensive landscape. Table 3 outlines the potential sources and types of climate finance that could be included in the landscape.

It is important to note that overlaps may exist in the data when capturing multiple or all types of finance from various sources and databases. This may lead to double counting. Hence, if such transactions are being included, caution must be exercised to eliminate any intersections. Steps 3 and 4 discuss specific issues around double counting.

Table 3: Different sources and types of climate finance

Types of finance	Instruments	Actors providing this type of finance
Domestic public-flows	• Domestic public budget expenditure • Transfers from national governments to local government, State Owned Enterprises (SOEs), and financial institutions • Loans (Concessional and non-concessional) • Balance sheet financing, equity, and debt from SOEs and public financial institutions • Sovereign bonds • Grants • Taxes and non-tax instruments (levies, royalties, fees)	• Central governments and relevant line ministries • State Governments • Local governments, if decision-making and budget spending occurs at a sub-national level • Public agencies supporting ministries' mandates (ex. Environmental agencies) • Public trust funds • SOEs operating in relevant sectors • Public financial institutions

Domestic public incentives	• Taxes and fees • Subsidies • Tax breaks • Low-cost subsidies • Guarantees and risk mitigation instruments	• Central governments • Central banks • Local governments
International public flows	• Loans (Concessional and non-concessional) • Grants • Balance sheet financing, equity, and debt • Others (guarantees, risk mitigation instruments, etc.)	• Development Finance Institutions (DFIs) - multilateral and regional, bilateral, and national • Donor government and its agencies • National and multilateral climate funds
Private investment flows – domestic and international	• Bonds • Equity • Balance sheet finance • Grants • Loans • Guarantees	• Institutional investors (commercial financial institutions and impact funds) • Corporates and project developers • NGOs • Research and academic institutes • Philanthropists • Commercial banks and funds

Source: Adapted from the Land-use Finance Tool (EFI and CPI, 2018)

2.3 STAKEHOLDER MOBILIZATION

To build ownership and strong engagement for data collection, as well as buy-in when formulating policy recommendations, relevant stakeholders should be engaged at every step of the tracking exercise. During the scoping stage, it is useful to identify key stakeholders, their role in the exercise, and the engagement approach. Key stakeholders can include:

(i) Project champions, typically a government entity like the ministry of finance or environment that can help the core team ensure access to public data, and enable buy-ins with the local governments and help mobilize resources.

(ii) Steering committee or core stakeholder group to provide technical inputs, guide scoping tasks, validate results from the analysis, provide quality control, and increase policy and political relevance of the analysis. This may include a broader list of experts and knowledge providers like relevant ministries (such as Finance, Environment, Forestry), government agencies, and private sector partners (such as commercial banks, associations, or research organizations).

(iii) Other stakeholders including policymakers, NGOs, and civil society organizations may be useful in publicizing and utilizing the findings and feeding it into the country's policy framework.

Through our research for the various national landscapes, it was identified that securing a strong buy-in and ownership from the relevant government agencies and line ministries is a) pivotal for adopting recommendations from the study; b) ensures integration of the study results into ongoing policy processes; and c) ensures that expected outputs can be tailored to stakeholders' needs.

For instance, during the preparation of CPI's Uncovering the Private Climate Finance Landscape in Indonesia (CPI 2020b), a lack of depth and accessibility to private climate finance data posed substantial challenges, as it was the first-time a private climate finance tracking exercise was conducted. In such cases information gathered through news and press releases needs to be vetted by relevant stakeholders. Creating a formal institutional

relationship with the Indonesian Fiscal Policy Agency (BKF) and Financial Services Authority (OJK) helped substantially in connecting with other public/private institutions. Similarly, the Kenya Landscape of Climate Finance benefited substantially from close collaboration with the National Treasury of Kenya and Kenya Climate Innovation Centre – which enabled access to a wider set of local public and private entities (including the Kenya Bankers Association and Kenya Private Sector Alliance), that in turn improved the engagement and response rate to the data collection surveys.

3. STEP 2: DEFINITIONS AND SETTING THE FRAMEWORK

The development of a detailed typology are prerequisites for tracking climate finance. The purpose of this step is to ensure that the definitions and typology of the national landscape are grounded in the national policy framework. Continuous engagement with the steering group and sectoral experts during the process is vital to developing a comprehensive, widely accepted taxonomy.

3.1 DEFINING CLIMATE FINANCE IN A NATIONAL CONTEXT

There is no single, internationally agreed definition of climate finance. Instead, various international institutions, national governments, and others in this field have developed their own definition based on their specific objectives and needs. In the absence of a pre-existing national definition for climate finance, a climate finance definition should be built in consideration of the national context, in consultation with key stakeholders.

Table 4 presents the definition of climate finance used in CPI's Global Landscape for Climate Finance (GLCF) (CPI, 2019) along with definitions and taxonomies used by international institutions and data aggregators. Most of these definitions and taxonomies provide: (1) a positive list of activities that can be considered compatible with their respective definitions of climate finance; (2) a negative list of activities, technologies or sectors excluded from such financing; and (3) quantitative and technical criteria and metrics like emissions intensity etc. for eligibility. These positive lists of activities and criteria provide a good starting point for developing a climate finance definition in a country context, in addition to the public documents like low carbon development strategy, climate change action plans, etc.

Table 4: Definitions of climate finance

CPI definition of climate finance (aligned with the operational definition of the UNFCCC[8])	**Climate finance is defined as capital flows directed towards low carbon and climate resilient development interventions with direct or indirect greenhouse gas mitigation or adaptation benefits (CPI, 2019b).**	
	Mitigation	**Adaptation**
	Mitigation finance is defined as resources directed to activities: • Contributing to reducing or avoiding GHG emissions, including gases regulated by the Montreal Protocol; or • Maintaining or enhancing GHG sinks and reservoirs.	Adaptation finance is defined as resources directed at activities aimed at reducing 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.

8 The UNFCCC Standing Committee on Finance states that "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."

Common examples	Renewable energy generation, solar heating and cooling, afforestation/reforestation, improved cookstoves, building insulation, sustainable transportation, etc.	Flood resistant roads and infrastructure, waste management, drought tolerant crops, improved irrigation practices, etc.
Definitions and taxonomies used by international financial institutions and others	**Multilateral development banks (MDBs):** MDB climate finance refers to financial resources (own and MDB managed external resources, committed to develop operations and components which deliver climate change mitigation and adaptation as well as dual benefits[9] (EBRD, 2018). For mitigation, it provides a positive list of activities that are compatible with low-emission pathways. While for adaptation, it recognizes that eligibility for criteria should follow a context- and location-specific, conservative and granular approach. **IPCC:** The term "climate finance" is applied both to the financial resources devoted to addressing climate change globally and to financial flows to developing countries to assist them in addressing climate change (IPCC, 2019). **IDFC:** According to IDFC methodology, "green finance" comprises of "climate finance' and finance for 'other environmental objectives' with climate finance being composed of 'green energy and mitigation of GHG' and adaptation to climate change (IDFC, 2019) **OECD-DAC:** Rio markers were originally designed to track the mainstreaming of environmental considerations into development cooperation rather than providing a quantification of finance. Following the definition and eligibility criteria, it distinguishes between activities targeting climate change objectives as either "principal" or "significant." **The EU Sustainable Finance Taxonomy:** This provides a list of economic activities and associated technical criteria that serves six environmental objectives: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, waste prevention and recycling, pollution prevention and control, and protection of healthy ecosystems. For eligibility, an economic activity must make substantial contribution to at least one or more of the six environmental objectives, and does no significant harm to the other five (EC, 2020). **Climate Bond Initiative Taxonomy:** This provides a positive list and negative list of assets, projects and financial instruments which can be compatible with a low carbon economy, based on compliance (or non-compliance) with a set screening requirement (CBI, 2019).	
Definitions used by various national landscapes	**India:** The taxonomy used in the *Landscape of Green Finance in India* (CPI, 2020a) aligned with the green finance taxonomy landscape paper prepared by CPI and cKinetics; It captures finance that a) support mitigation and adaptation actions that will address climate change and, b) other environmental objectives that are necessary to support sustainability, and in particular aspects such as biodiversity and resource conservation. It does not track adaptation. **Indonesia:** *Uncovering the Landscape of Private Climate Finance in Indonesia* (CPI, 2020b) used the same taxonomy and scope as in the GLCF with the addition of hybrid electric vehicles. **France:** Follows a hybrid definition of 'climate investments' and seeks to identify the investments that contribute (or are counterproductive) to the achievement of French climate-related objectives. This takes into consideration France's national strategies and plans (the national low carbon strategy (SNBC) and multiannual energy plan) and international guidelines, standards, and taxonomies (EU sustainable finance taxonomy, Climate Bond Initiative, GCLF). It includes tangible investments into five key sectors – energy efficiency, energy generation, sustainable infrastructure, nuclear, and non-energy. (I4CE, 2019). **South Africa (forthcoming):** Based on climate finance definition provided by the South African National Treasury (NT, 2020), the landscape tracks investments in sectors that are in line with national priorities and policies, and currently have the most market impact on South Africa's climate emissions.	

9 Dual benefits refer to certain activities that render benefits for both "climate change mitigation" and "climate change adaptation" by meeting the respective criteria. For instance, retrofitting old buildings to make it more energy efficient is an example of a "dual benefit" project because it brings significant adaptation benefits, while also making a positive contribution to mitigation (GLCF, 2019).

Furthermore, a 'Transition Finance Study Group' organized by Research Institute for Environmental Finance (Japan) have proposed creating a global standard for 'transition' finance. Such finance would aim to capture activities and investment deployed by high carbon intensive businesses to move to low or zero carbon models in a phased and timely manner (RIEF, 2020). For instance, transition pathway for a natural gas power plant can be in two phases; first phase that entails repairs to pipeline to reduce methane leakages; and second phase which involves fuel conversion to biogas or hydrogen gas to reach net zero. Developing this concept of 'transition finance' would require more detailed country level goal setting of the transition, monitoring processes, and verifying the outcome for mitigating climate change or enhancing environmental sustainability.

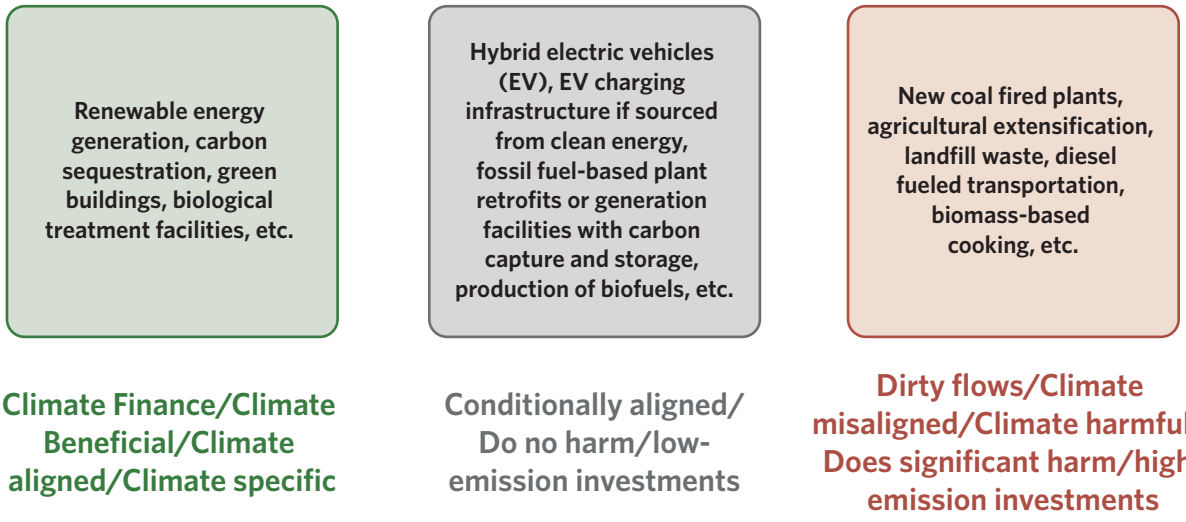
Climate Bond Initiative (CBI, 2020) has also defined 'climate mitigation transition' as transition that entities, activities and assets need to make from today's high greenhouse gas emissions to levels commensurate with meeting the goals of the Paris Agreement. It calls for developing a robust and standardized framework to implement 'transition' concept which can ensure a credible brown to green transition aligned with the Paris Agreement, recognizing that nature of transition differs across entities and institutions. Also, Canadian Standards Association (CSA, 2020) is currently leading development of 'Transition Finance Taxonomy' as a National Standard of Canada for Transition Finance, that can support Canada's transition to a low carbon economy.

3.2 FRAMEWORK FOR CATEGORIZING INVESTMENTS AND ACTIVITIES BASED ON CLIMATE FINANCE DEFINITION

Based on international guidelines and standard explored in Table 5, climate investments and activities can be classified into different groups. These classifications are shaped by the adopted definition of climate finance, the geographic setting in which investments take place, and the ability of investments to meet technical criteria, among others.

For example, a fossil fuel-based power plant with carbon capture and storage technology can avoid being climate-harmful if it captures 100% of the resulting GHG emissions. Furthermore, fossil fuel-based sources, such as natural gas plants, may be classified as a 'transition' technology in some countries, while it would be deemed 'climate harmful' or 'dirty finance' in others. As another example, I4CE in its French landscape (I4CE, 2018) categorizes 'nuclear power generation' and 'dedicated transmission and distribution infrastructure' as climate beneficial, while most taxonomies following the 'do no harm' approach and exclude nuclear altogether. Figure 2 provides a few examples of classifications of investments based on their potential contribution to global carbon emissions.

Figure 3: Classification of activities based on their impact on carbon emission



Additional categorization of transactions may be helpful, e.g. the Landscape of Climate Finance in Germany (IKEM and I4CE. 2019) followed three dimensions to categorize end-use investments, depending on the scope and context of the study undertaken:

- **Climate-specific** (e.g. carbon sequestration) **versus climate-related** or climate relevant (e.g. retrofits of transmission lines). See Box 1.
- **Tangible investment contributing towards gross fixed capital formation** (e.g. manufacturing of photovoltaics cells) **versus intangible investments** (e.g. campaigns, capacity building and Research and Development); and
- **Incremental cost** reflecting additional expenditure over business-as-usual practices (e.g. additional cost of a high energy efficiency appliance compared to a standard one) **versus total capital investment** (e.g. total cost of a renewable energy installation)

Most of the landscapes, including CPI's Global Landscape of Climate Finance, generally track climate-specific tangible flows covering capital investment for all investment flows, as opposed to incremental cost, with a few exceptions. For instance, the Landscape of REDD+ Aligned Finance in Côte d'Ivoire (CPI, 2017) tracked all REDD+ aligned activities and REDD+ related activities which could be aligned if only certain enabling conditions were met. The French and German landscapes capture incremental investment only into energy efficiency in buildings defined as the difference between the project's total investment cost meeting energy efficiency criteria and the average cost of the same building under a business-as-usual approach.

While considering these different categorizations, types of support, and capital it is critical to ensure that appropriate double counting checks are in place. For instance, R&D expenditure may already be subsumed in the project transaction value. Similarly, policy-induced revenue support mechanisms, such as those generated by feed-in tariffs and carbon credits, may pay back investment costs, so including them would constitute high double counting risks. Also, risk mitigation instruments, such as guarantees, risk sharing facilities, and insurance, are designed to reduce private investment needs and are contingent upon uncertain future events.

It is important to assess these expenditures independently to understand their support for climate finance investments within the context of country landscape. Further, in order to establish credibility and maximize accuracy, it is helpful to convene frequent roundtables with stakeholders from relevant sectors and provide technical briefings. It is also advisable to create a steering committee/review group that includes experts and policymakers to review the methodology framework and advise on potential methodological pitfalls.

Box 1. Climate tagging or applying weights to identify climate relevant investments

Manual budget tagging, or applying weights to the components of the financial flows to apportion the climate relevance of investments, can offer an alternative way to identify climate finance expenditure. For example, the Kenya Landscape entailed identifying and manual tagging of climate related expenditures of the national budget line items, obtained from the national financial accounting system (IFMIS). The goal was to identify which expenditures from each Kenyan state department contributed to climate mitigation and/or adaptation outcomes.

To do so, the OECD-DAC Rio Markers methodology were applied to screen, identify, and tag climate-related expenditures. For certain sectors and activity types, the approach deviated from the Rio Markers methodology and took different considerations and assumptions. The accuracy of the tagging was highly influenced by the availability of detailed project descriptions and objectives.

A scoring system of three values was used, in which activities are "marked" as either:

(i) Targeting mitigation and/or adaptation outcomes as a principal objective (score 2);

(ii) As a significant objective (score 1); or

(iii) Not targeting any climate outcome (score 0).

For activities identified as 'Principal' (score 2), 100% of the budget or expenditure amount was allocated as climate relevant, while activities identified as 'Significant' (score 1) only 40% of the amount was marked as climate finance. While activities not targeting any climate related objectives are not included in the analysis.

Countries may already be using a climate-tagging methodology depending on the country context and availability of data, like the UNDP Climate Budget Tagging or the OECD-DAC Rio Markers. For instance, Nepal, one of the first countries to adopt UNDP's Climate Budget Tagging in 2012, adopts the following criteria system (UNDP, 2015):

- Highly Relevant: above 60% of expenditures allocated to climate activities
- Relevant: 20-60%
- Neutral: below 20%

It can prove advantageous to keep the stakeholders, such as the sectoral experts, involved throughout the process to ensure accuracy of the analysis. It will be crucial to document the data sources, calculations, assumptions, and classification rules for transparency and continuity, to benefit a formal climate budget tagging system in the future.

3.3 DIMENSIONS OF FINANCIAL FLOWS

After identifying the types of finance to be included, as well as the actors and instruments, the framing of the final output may be set. This will determine the dimensions to be captured in the landscape Sankey, which is a visual representation of climate finance flows through its life cycle from source to end use. This may contain categories and sub-categories as shown in Table 5. These categories can then be applied when data is processed.

Table 5: Dimensions of the financial flows

Categories	Sub - Categories	Sensitivities/challenges
Sources and intermediaries (Which entities provide or intermediate the finance?)	Public finance providers: central government, local government, public financial institutions, public trust funds, SOEs, as well as international public actors such as other governments, financial institutions, and funds. Private finance providers: institutional investors such as commercial financial institutions and impact funds, corporate actors, project developers, service providers, households, High net worth individual (HNIs), family funds, and philanthropists.	While the exercise strives to map national climate finance, it is likely that some flows' original providers are international actors. It is thus of interest to include the dimension of domestic/international to gain a better understanding of the nature of the climate finance flowing in the country.
Instruments (What financial instruments are used as vehicles for the finance?)	Grants, balance sheet finance, concessional loans, commercial loans, bonds, equity, and guarantees.	While it is advisable to not include policy incentives in totals to avoid double counting, it is often of interest to include data separately to gain better insight into how the public sector aims to incentivize the private sector, and a landscape would benefit from including at least a qualitative consideration of these mechanisms in the tracking exercise.
Disbursement channels (Which entities does the finance through close to disbursement?)	Tracking the disbursement channel can be a useful way to understand how finance is delivered to end recipients. These entities can include central governments and implementing ministries, local governments, public agencies, public-private partnerships, SOEs, unions/industry associations and funds, NGOs, international partners, private companies, academic and research centers, and other civil society actors.	It may be difficult to differentiate between the implementing entity, executing or disbursement agency, and the final recipient/beneficiary. Identifying the role of various actors and their position in the value chain can help in this distinction. Most tracking exercises do not provide detail on the final recipient/beneficiary. However, in some instances the final recipient/beneficiary can be inferred from the sector and activity. For example, in India since 2017, state governments have been borrowing directly from overseas lending agencies, such as JICA to fund infrastructure projects (acting as the recipient) and further disbursing it down to nodal agencies, the actual beneficiaries.
Activities and sectors What activities are being financed?	In the context of national tracking, the activities financed, or beneficiaries can either be grouped in sectors or policy areas, depending on the specific framework. Examples from other tracking initiatives: • India's Landscape of Green Finance provides a breakdown by sector and sub-sectors (CPI, 2020a). • Indonesia's Landscape of Public Climate Finance (CPI, 2014) maps direct and indirect investments, in addition to a breakdown by sector.	Sometimes an activity can provide both mitigation and adaptation benefits. For example, a water basin management project involving reforestation to reduce flood risk while increasing carbon sequestration.

Source: Adapted from the Land-use Finance Tool (EFI and CPI, 2018)

Before embarking on data analysis, it is useful to prepare a qualitative visual overview (like a Sankey, see Section 5.3 for more details) of the dimensions the climate finance landscape will capture, and how they relate to one another. For instance, in several cases a proportion of climate activities may be implemented by national or local government agencies or private sector companies but are financed by external sources (e.g., development finance institutions, philanthropic foundations and other donor agencies). For instance, in case of Kenya, DFIs and donor agencies channel funding through industry associations like the Kenya Private Sector Alliance and various civil society organizations to build capacity and support policy development to create a sound enabling environment for climate investments.

4. STEP 3: DATA COLLECTION AND VERIFICATION

Data collection, aggregation, and quality checks are central to the tracking exercise. This step is necessary to ensure that all relevant datasets are identified, accessed, and checked for accuracy. Primary stakeholders that may be consulted for the exercise include various project champions, data providers, and other sectoral experts (see Section 2.3).

4.1 SOURCES OF DATA

Developing a list of potential data sources is a good starting point for conducting national climate finance tracking. Data gathering is best conducted in close collaboration with key stakeholders. This will increase the likelihood that: (a) all relevant data is accessed and gathered; and (b) data analysis or interpretation issues are easily solved. Hence, key contacts and data providers need to be engaged from the beginning to access data.

Table 6: Potential sources of data

	Domestic public actors	International public actors	Private sector finance
Key Questions	• What is the planning and budgeting process? • How is the government budget structured? • How and by whom are the central government budget and related data managed? • Where can qualitative data on projects be found to interpret the information from the government budget? • What is the role of provinces in implementing national programs? Is information on sub-national budgets centralized and/or sub-national budgets shared with the national government?	• Do donors directly support the national government/province on mitigation or adaptation sectors? • What reporting requirements are in place for international development partner funding and what is the compliance rate? • What other reporting initiatives exist? • Should a survey approach be followed?	• What are the main industries/ private sector actors, associations active in the relevant sectors? Where are investors mostly from (domestic/international)? • What are the main policies and instruments used to stimulate private investments? • Is there data available on the amount of investment?
Sources of information	• Central government budget • Line ministries' budgets and project documents • Interviews with govt. stakeholders and policymakers • Audit reports, evaluation reports, annual reports of funds	• Government budgets • Program documents for programmatic support • Bilateral donor surveys • OECD-DAC database	• Company annual reports and financials • Sustainability reports • Industry associations • Surveys and interviews

Potential Challenges	• Differences in estimated, actual and audited budgets • Climate relevance of a particular budget or a budget entry remains unspecified in the absence of a standard budget tagging requirements • Intense engagement with various actors might be required • Decentralized and inaccessibility of local budget data • Segregation between recurring/ operational expenditure and actual capital expenditures	• Tracking the final use of budget support and tracking whether it is related to climate activities or not maybe time consuming • Programmatic expenditures may not be detailed in the budgetary records at all (off-budget) or in a timely manner • Inconsistencies between data sources and in relation to commitments vs. disbursements	• Lack of systematic and comprehensive tracking by the private sector • Lack of established taxonomy and • MRV structures for climate-aligned finance • Difficulties in obtaining data for private actors due to confidentiality and in comparing tracking methods
Examples from national landscapes	• The following sources of data were consulted to prepare the Landscape of Climate Finance in Kenya (forthcoming): • Public sector expenditures: Integrated Financial Management System, (IFMIS)[10], sector reports, surveys and desk-based research.	*Landscape of Green Finance in India (CPI, 2020b)*: Multilateral and bilateral development banks were the principal international actors under consideration. The following sources were used: • OECD- CRS database • DFI project databases[11] • Media publications *Landscape of REDD+ Aligned Finance in Côte d'Ivoire (CPI, 2017):* International development data was obtained from Comité de Mobilisation des Ressources Extérieures (COMOREX), an agency within MoF which monitors and manages finance from development partners, along with surveys sent to international development partners.	Landscape of Climate Finance in Indonesia (CPI, 2020): The following data sources were considered for private finance tracking: • Company annual reports[12] • Sustainability reports • Philanthropy databases • Equity and bond issues prospectus *The Landscape of Climate Finance in Kenya* (forthcoming): Private sector financing in the Kenya landscape was collected through surveys to private sector associations, interviews, and workshops with stakeholders, sustainability reports of mapped Nairobi Securities Exchange (NSE) listed companies, etc. Commercial infrastructure finance databases (like BloombergNEF and IJ Global) were also used.

Source: Adapted from the Land-use Finance Tool (EFI and CPI, 2018)

Fragmented and insufficient data availability, especially for private sector actors, continues to be a prevailing bottleneck in developing climate finance landscapes. In the absence of actual investments figures, an investment unit cost approach can be applied to fill such a gap. For instance, households' retail purchases of electric vehicles and governments' public incentives can be estimated using EV volumes and EV prices. Direct rebates for manufacturers and consumers, tax exemptions or differentiated taxes for EV compared with diesel and petrol vehicle can be classified as public expenditure while the remaining expenditure can be allocated as private household expenditure (CPI, 2018). This approach is often applied in the French landscape, where it is possible to obtain disaggregated unit level data like number of projects or equipment and prices per unit (14CE, 2018). For instance, square meters of buildings retrofitted, megawatt of installed capacity of renewable energy by technology, and energy efficient equipment. Based on reliable data and assumption of volumes and

10 Integrated Financial Management Information System is an automated public financial management system. See http://www.treasury.go.ke/publications/category/1-integrated-financial-management-informatonsystem.html?download=2:ifmis-re-engineering-updates

11 See KfW project database for an example: https://www.kfw-entwicklungsbank.de/Interdomestice-Finanzierung/KfW-Entwicklungsbank/Projekte/

12 State-owned companies listed on the stock exchange are considered as private actor.

unit prices, respectively, it is possible to estimate investment expenditures with reasonable accuracy.

4.2 DATA GAPS AND LIMITATIONS

Data availability and quality are often reported as key challenges in the data collection process, especially in countries where data is decentralized among various levels of government. To address this, one may develop an acquisition strategy where publicly available data does not meet data quality requirements provided in Table 7.

Table 7: Data quality requirements and challenges

Challenge	Reason	Approach Taken
Accessibility	Data source not centralized, for example local governments	Bottom-up approach to aggregate available data Conduct case studies
	Publicly available data highly aggregated and does not show sufficient level of detail to be accurately classified	Acquire unpublished data directly through bilateral requests, surveys, and interviews
Timeliness	There are records in the datasets describing a period before or after the chosen project period	Engage with data manager/provider to see whether an update is possible, for example using the latest estimated budget data and accepting its uncertainty Experts' judgement on adjusting the numbers by inflation or deflation on an annual basis
Incompleteness	Not all relevant fields covered (such as transaction value, financial instrument used, beneficiary, etc.)	Consultation with government and data providers and experts Engage with data manager/provider and check why dataset is incomplete (database query did not cover all fields) Cross-check against other data sources to identify problems
	Insufficient qualitative information available on project scope, objectives, sub-components, activities realized and so forth, to assess the use of funds and their potential impact on forests	Engage with data providers to collect qualitative information bilaterally (i.e., project notes, reports) Interview of technical staff engaged in the project
	Not all data points covered (columns complete, while rows are incomplete) intl. program grants only partly covered	Consultation with government, data providers, and/or experts Fill missing information with default/proxy data Consolidate with other data sources
Inconsistency	Discrepancies between different datasets (govt. budget and public donor reporting show different numbers on inter-domestic expenditures)	Consultation with government and data providers and experts
	Data on climate finance provided based on a different definition/methodology than the one used for the climate finance tracking	Acquire unpublished data to double-check Expert judgement

Source: Adapted from the Land-use Finance Tool (EFI and CPI, 2018)

5. STEP 4: DATABASE CONSOLIDATION, ANALYSIS, AND PRESENTATION

Data consolidation and analysis form the core of the Landscape typology. The purpose of this step is to standardize and define the data consolidation rules and procedures to ensure transparency, credibility, and replicability of the Landscape. It is also crucial to ensure that the collected data is carefully interpreted and presented in a format that is constructive and sheds light on the most relevant observations and conclusions of the analysis.

5.1 SELECTION AND CLEANING THE DATASETS

A dataset would commonly comprise of sets of rows and columns wherein the rows represent climate relevant primary transactions, and the columns represent several key parameters for each of those transactions. Depending on the scope of the Landscape, contents of the columns or 'key fields' need to be identified. Typically, if using CPI's methodology, the key fields could include sources of finance, amount, currency, intermediary of finance, instrument used, and/or recipient. This should typically reflect the qualitative framework developed in Section 3.3. Default fields in the procured datasets may not align with the designed framework, hence it is advisable to check for relevance, consistency, accuracy, completeness, and validity of the data.

After cleaning the dataset, different formats must be collated into a single spreadsheet or database. The selection of the database format depends on factors such as resource availability, skillsets of the team, and scope of the exercise.

Relational databases, such as MySQL can be designed and used if the focus is on managing significantly large and complex data efficiently, consistently, and permanently. For most national tracking initiatives where the datasets are reasonably sized and the typology is constantly evolving, **an Excel spreadsheet** will likely be sufficient.

Please refer to Module 6 of the *Land-use Finance Tool (EFI and CPI, 2018)* which provides a sample database structure and potential solutions to data quality issues.

5.2 KEY QUALITATIVE AND QUANTITATIVE ANALYTICAL QUESTIONS

The qualitative and quantitative analysis should link back to the objective and initial questions for climate finance tracking. There are certain qualitative and quantitative questions that will help to a) quantify key dimensions of the flows b) understand trends and variations among different sources of finance and, c) provide context and comparability to otherwise disparate data.

Table 8: Key qualitative and quantitative questions for analysis

Qualitative questions	Quantitative questions
• What recommendations for fiscal incentives, polices, and regulations should be considered? • What changes should be introduced in the tracking processes, metrics, and systems to improve future reporting? • What role and coordination mechanism is envisaged among different stakeholders (like central and local governments, donors DFIs, private sector actors) to ensure national climate objectives can be achieved?	• How much did climate related finance account for, in total, within the region and period of interest? • Who provided the finance, and how much was provided? • How much was delivered through each financial instrument? • What financial instrument(s) do actors/sources of finance prefer for each type of finance? For example, budget expenditure for government actors, or grants/loans for international development partners. • What were the main channels for implementing climate related finance? For example, a government might channel mostly via line ministries/public agencies, while intl. development partners channel through state ministries, NGOs, and others. • What sectors and activities was the money intended for? For example, governments spend most climate finance on enabling environment setup.

Source: For more quantitative and qualitative analytical considerations, please refer to the module 7.1 in the Land-use Finance Tool (EFI and CPI, 2018)

As the analysis will form the basis of policy recommendations, it is advisable to reach out and discuss the results with advisers of the organizations financing or implementing the climate activities being analyzed. This is especially important if consolidated numbers do not add up to an 'official' number, or if they could be controversial or have limitations. Further, stakeholder engagement is needed to discuss the implications and benefits of policy recommendations based on the analysis, and to agree on next steps.

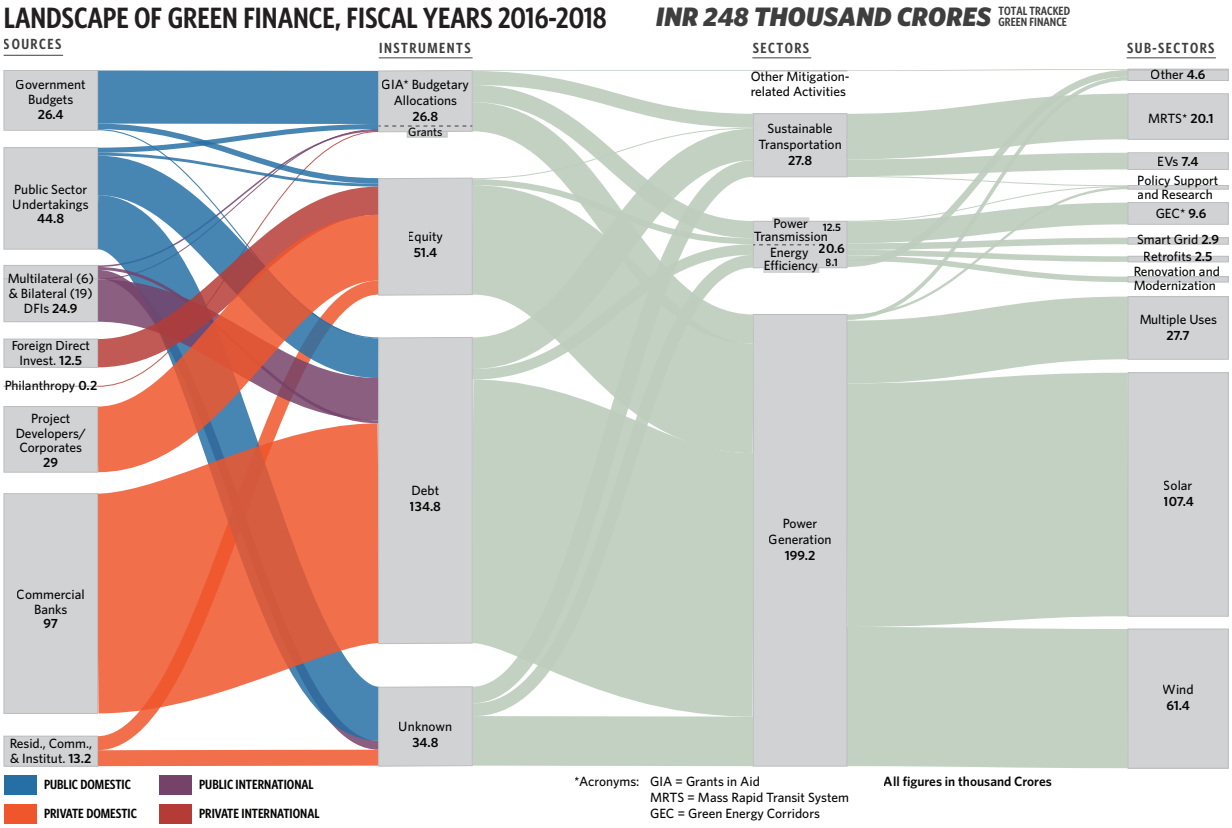
5.3 OUTPUT FORMAT

The targeted audience and the core purpose of this exercise will help guide decisions on necessary visualizations and the general mode of dissemination. Most often, a climate finance tracking exercise will produce a report outlining the methodology and results, as well as providing context and analysis of the information. Aggregate analyses can often be presented in either tabular format or via a Sankey diagram. There are several open-source online tools that can help in building the sankey diagram such as RAW Graphs[13] and SankeyMATIC[14]. Figure 4 shows a Sankey diagram from India's green finance landscape,

13 https://app.rawgraphs.io/
14 http://sankeymatic.com/. More detailed guidance for building a Sankey is available here https://landusefinance.org/wp-content/uploads/2019/12/LUFT-ANNEX-II-EN.pdf

which provides a visual representation of the different dimensions of finance flows including the sources, instrument, sectors, and sub-sectors.

Figure 4: An example of Sankey depicting green finance flows of India between 2016 and 2018.



Source: For detailed examples of the sankeys and other visualizations with their use cases please refer to the module 7.2 in the Land-use Finance Tool (EFI and CPI, 2018)

6. CONCLUSION

This note shares various approaches, methodological frameworks, and best practices to apply when tracking climate finance at the national level. It should be treated as a living document as more climate finance tracking and disclosure initiatives (like the Coalition of Finance Ministers for Climate Action, Task Force on Climate-related Financial Disclosures, etc.), taxonomies and methodologies (EU Sustainable Finance Taxonomy, MDB Paris Alignment Working Group), and research studies are underway.

Sharing national, sectoral, and institutional approaches along with developing a community of practitioners to facilitate information flow, resource sharing, and highlighting success stories are crucial to further the understanding of best practices and policies to track countries' progress on their NDCs under the Paris Agreement.

For further reading, please refer to Land-use Finance Tool published by European Forest Institute, EU REDD Facility, and CPI in 2018 (EFI and CPI, 2018), available at https://landusefinance.org/

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