

MODULE 1:

Scoping the mapping exercise

The project scope will clarify what needs to be included in the land-use finance mapping and what should be excluded, and why. Careful scoping will save time and resources.

OBJECTIVE

Develop a 'vision' for the exercise of mapping land-use finance: define objective, outputs and the potential scope of the analysis. Develop a project plan.

KEY QUESTIONS

- 1.1 What is the context for the analysis?
- 1.2 What is the purpose of the analysis?
- 1.3 What scoping questions need to be raised with stakeholders?
- 1.4 What data is available?
- 1.5 What resources are needed?

TEMPLATE



Download Template 1 - Scoping checklist

1.1 What is the context for the analysis?

The project team should clarify the broad policy objectives, context and policy framework for the analysis at the outset. The policy framework considered in the work could be national climate change or sustainable development policy, or a sectoral policy or strategy targeted at a specific driver of deforestation or specific supply chains. The approach developed in this tool can be adapted to various policy frameworks, broad or narrow, according to the objectives pursued. For this tool, we assume that the broader policy objective for the finance mapping work relates to the role of forests in addressing climate change, usually defined in REDD+ strategies at national or sub-national level.

It is useful to identify strategy papers that provide information on key drivers of deforestation and/or factors driving resilience of land use, and the perceived opportunities for influencing these drivers/factors. These may include:

- National/jurisdictional REDD+ strategies
- National/jurisdictional climate change plans
- National adaptation plans and national adaptation programmes of action
- Nationally determined contribution (NDC)
- Readiness Preparation Proposal (R-PP) for the Forest Carbon Partnership Facility (FCPF)
- Green growth or sustainable development strategies
- Forest policies
- National/jurisdictional agricultural plans
- Other relevant national/jurisdictional sectoral development plans
- National communications and biennial update reports to the UNFCCC
- Needs assessments or investment plans

Questions to consider to develop a good understanding of country/jurisdiction context for land-use finance mapping include:

- ▶ What are the main economic activities in the country/jurisdiction? What are the main sources of revenue?
- ▶ What are the priorities for short to mid-term development?
- ▶ What is the role of forests in country/jurisdiction development?
- ▶ What are the main challenges around natural resources management in the country/jurisdiction?
- ▶ What are the main drivers of deforestation in the country/jurisdiction?
- ▶ Is the country/jurisdiction aware of REDD+? Is it involved in REDD+? Is there a country/jurisdiction forest development or REDD+ plan?

1.2 What is the purpose of the analysis?

Once the broad context is clarified (1.1.), the specific objectives of the land-use finance mapping exercise should be defined. This can range from information gathering, reporting on progress, or identifying ways to develop new solutions. Next, you should consider what kind of output is needed to support and/or achieve the objective(s): What do we want to analyse? How do we analyse it? How do we get results that are informative and significant to the right people?

Table 2 includes a list of potential objectives, related outputs and desired outcomes. Table 3 provides some real-world examples undertaken by mapping teams.

Objective	Output	Outcome
<ul style="list-style-type: none"> ▶ What do you aim to achieve? ▶ What process(es) is the analysis going to inform? 	<ul style="list-style-type: none"> ▶ What does the data/analysis need to deliver? What to analyse, and how to analyse it? What should the numbers and analysis say? 	<ul style="list-style-type: none"> ▶ What will be gained from the output? What will happen upon achievement of the objective?
<p>Monitor progress on policy goals, targets and support received</p>	<p>Calculate annual or periodic investment/finance flows/resource allocation, for example:</p> <ul style="list-style-type: none"> • Budget revenue/expenditure • Mobilised public and private investment • Investment delivered vs. needed for a given activity or goal, for example forest cover, recovered land or protected land, for example ha/m²; emissions reduced or sequestered (CO₂ equivalent); productivity increases in livestock or crop yields as a result of intensification (intensity metric). • International and national reporting on support received vs. support needed or specific donor reporting 	<p>Increased transparency and accountability</p> <p>Increased trust with partners and donors</p>
<p>Align finance to forest and climate objectives</p>	<p>Identify and assess the volume of investments that might drive deforestation</p> <p>Stimulate multi-stakeholder and cross-sectoral discussion on the definition of sustainable and unsustainable investment categories and mainstreaming of climate and forest objectives (in sectoral policies, development cooperation, public-private partnerships, etc.)</p> <p>Support the formulation of detailed policies, measures and activities aligned with forest and climate objectives</p>	<p>Coherent and detailed actions to support climate and forest objectives formulated</p> <p>Redirection of unsustainable spending towards activities aligned to forest and climate policy goals</p> <p>Leveraged sustainable investments</p>
<p>Develop investment plans and funding proposals, resource mobilisation frameworks and investment vehicles</p>	<p>Reflect on the nature of existing financing in specific sectors or activities where there are investment gaps</p> <p>Analyse the effectiveness of existing measures in leveraging funding for forests</p>	<p>Additional funding mobilised</p>
<p>Build effective partnerships/dialogues to implement climate and forest objectives</p>	<p>Identify entry points for different actors' finance/investment into forest and climate policies and measures</p> <p>Increase coordination among actors to understand linkages and overlaps of finance, for example: public-private, cross-sectoral, domestic and international</p>	<p>Identification of co-financing opportunities</p> <p>More efficient use of resources, for example public capital and leverage private sector investments</p>

▲ **Table 2:** Potential objectives, related outputs and desired outcomes of land-use finance mapping

Table 3: Examples for objective, output and outcome of former climate or land-use finance mappings [next page]



Objective	Output	Outcome
<p>► What does the initiator aim to achieve? What process(es) is the analysis going to inform?</p> <p>Landscape of public investments relevant to REDD+ in Côte d'Ivoire, 2015 (Falconer et al. 2017):</p> <p>Identify opportunities to increase finance available for the implementation of the National REDD+ Strategy</p> <p>Engage cross-sectoral dialogue on coherence of land-use spending</p>	<p>► What does the data/analysis need to deliver? What to measure and how to measure it? What should the numbers tell?</p> <p>Baseline for 2015 that shows the nature and volume of domestic/intl. public finance (actors, financial channels) contributing to:</p> <ul style="list-style-type: none"> • reducing deforestation and • potentially driving deforestation 	<p>► What will be gained from the output? What will happen upon achievement of the objective?</p> <p>Increased understanding and transparency of the volume and nature of public land-use investments</p> <p>Multi-stakeholder definition of activities aligned to REDD+ objectives in each land-use sector</p> <p>Mainstreaming of forest and climate objectives in sectoral planning and budgeting processes initiated by the Ministry of Planning</p>
<p>Overview of planned public land-use investments in the Central Highlands region of Vietnam, 2016-2020 (EU REDD Facility and CIEM, 2018)</p> <p>Baseline for sub-national REDD+ investment proposals and identification of co-financing opportunities</p> <p>Inform integrated masterplan pilot in one province</p> <p>Clarification of main gaps and challenges for the implementation of the National REDD+ Action Plan in Central Highlands</p> <p>Inform the Government and donors on potential gaps and opportunities for the implementation of provincial REDD+ activities in Central Highlands, in complement to the national Resource Mobilisation Framework</p>	<p>Identification and quantification of planned domestic and international public investments (2016-2020) relevant to the implementation of the National REDD+ Action Plan in the Central Highlands' five provinces, identifying:</p> <ul style="list-style-type: none"> • main sources of finance, actors, and planned spending patterns • contribution of public investment spending to the achievement of REDD+ objectives and the main gaps in the implementation of the National REDD+ Action Plan • role of investments from central and provincial levels in potentially driving land-use change and forest loss 	<p>Increased understanding and consolidated vision of planned public land-use investments at sub-national level</p> <p>Priorities for support identified, as well as measures to leverage more efficient funding for forests feeding into future funding proposals for sustainable jurisdictions</p>
<p>Landscape of land-use finance in Papua New Guinea (Parker, forthcoming)</p> <p>Understand how revenues and expenditures in Papua New Guinea can be redirected to align with climate change outcomes, while supporting livelihoods and economic growth</p>	<p>Identification of financial flows relevant to the agriculture and forestry sectors, including taxes and levies imposed on major commodity exporters, government expenditure and subsidies to the private sector</p> <p>Mapping of the alignment of total flows with land-use mitigation and adaptation activities that can be scaled up</p> <p>Recommendations on improving inconsistencies in the application of taxes and levies across sectors and improving transparency in the collection and disbursement of finance</p>	<p>Increased awareness of land-use finance flows and their relative contribution to climate change</p> <p>Increased donor support through GCF to support transition to sustainable land-use economy</p>
<p>An analytical framework for Improving Land Productivity through Fiscal Policy in Indonesia (Mafira and Sutiyono, 2015)</p> <p>Develop recommendations for:</p> <ul style="list-style-type: none"> • adjusting the design of existing revenue collection instruments • increasing the transfer of revenues to local government • earmarking more revenues to support reduced deforestation 	<p>Analysis and quantification of selected tax and non-tax laws and regulations pertaining to land use in Indonesia, including forestry, agriculture, oil and gas, mining, and geothermal energy, and identification of low rates of revenue collection and opportunities to adjust fiscal policy instruments</p>	<p>Meet both Indonesia's revenue and sustainable land-use targets</p>

1.3 What scoping questions need to be raised with stakeholders?

You should discuss and agree the scope of the analysis with the project team and key stakeholders you will engage with (see Module 2). Key scoping questions to discuss include:

- ▶ Should the analysis capture climate mitigation and/or adaptation activities related to land use?
- ▶ Should the mapping also include finance in land-use activities that drive deforestation or could drive it? (business-as-usual finance, in addition to green investment in forest restoration, protection, zero deforestation, and so forth)
- ▶ Which sectors or commodities are of particular interest?
- ▶ What geographic scope should be reflected, for example national or provincial?
- ▶ What year/period should the analysis cover?
- ▶ What sources of finance will be included?
- ▶ What type of finance will be assessed?

The following sections will enable you to familiarise yourself with the terminology, introduce challenges to consider during the decision-making process, and provide examples from previous finance mapping efforts.

1.3.1 Should the analysis capture climate mitigation and/or adaptation activities related to land use?

The focus of the analysis can be on mitigation action or adaptation activities, or both. What does climate mitigation and adaptation mean in the context of land use?

- A mitigation focus would consider all low-emissions development scenarios and identify key sectors that contribute to land-use change and land-use emissions.
- An adaptation focus would also include an analysis of sectors and activities that increase or decrease resilience in land-use systems, as well as help adapt to the impacts of climate change. Lack of resilience planning could lead to additional land-use change and land-use emissions.

1.3.2 Should the mapping include finance that drives deforestation or could drive it?

Typically, an analysis of land-use finance in the context of REDD+ might start with flows of spending and investments contributing to climate objectives. Depending on the objectives of the analysis, broadening the scope of finance flows to be analysed from climate-aligned finance, which positively impacts sustainability, to all finance flows can be helpful. These other flows, sometimes referred to as 'grey' if the finance is unknown to be climate-relevant or not, or 'brown' if the finance is linked to activities known to drive deforestation or forest degradation, can help identify opportunities to integrate sustainability considerations into policies, redirect unsustainable investments, and limit deforestation and degradation impacts.

There are both definitional challenges in having a broader scope that includes grey or brown flows as well as increased data collection efforts.

In general, you might decide to map the following three types of land-use activities, or a subset of these:

- **Climate-aligned** activities, which contribute to climate change mitigation by increasing greenhouse gas (GHG) emission removals or decreasing GHG emissions from agriculture and forestry. Examples of climate-aligned activities include afforestation/ reforestation, sustainable forest management, zero deforestation agriculture, and clean cooking alternatives such as Liquid Petroleum Gas, improved efficiency cookstoves,¹ and induction cookers. Under a broader scope of climate-relevant finance, this could also include activities that increase resilience and adaptation to climate change impacts, as well as activities that contribute to climate change mitigation in the agricultural sector.
- **Conditionally-aligned or ‘grey’** activities are often indirectly related to land-use emissions and may contribute to reducing deforestation, but only under certain conditions. Examples include agricultural intensification, bioenergy and timber harvesting. Agricultural intensification, for example, can contribute to climate change mitigation by increasing production on existing land, thereby reducing pressure on surrounding forests. If not coupled with strong land-use policies, however, agricultural intensification can have unintended spill over effects that can lead to an increase in land value and an incentive for more forests conversion to agricultural lands.
- **Climate-misaligned or ‘brown’** activities, which drive deforestation or forest degradation. These activities vary by country, and are commonly referred to as the drivers of deforestation and forest degradation. Examples of climate-misaligned land-use activities include agricultural extensification, unsustainable forest management or infrastructure development, and using biomass for heating and cooking. Under a broader definition of land-use finance, this could also include activities that are not adapted to climate change impacts, or reduce the resilience of ecosystems, which could lead to expansion on new lands in the future.

The land-use finance mapping can include any (or all) of these categories based on the desired objective of the analysis. More detail on the approach to define land-use activities is provided in Module 3.

Previous finance mapping activities also quantifying ‘grey’ and/or ‘brown’ finance include:

- EFI and CPI work in Côte d’Ivoire (Falconer et al. 2017), which mapped REDD+ aligned financial flows and ‘grey’ financial flows in the country in 2015.
- CPI’s Landscape of Public Climate Finance in Indonesia 2011 (Amprri et al. 2014), which shows finance that could clearly be identified as climate-aligned. In addition, it indicates the large band of uncertainty, reflecting the portion of potentially-relevant finance that could not be verified in the absence of improved definitions and information on adaptation activities.
- The work of the United Nations Development Programme (UNDP) in Papua New Guinea (Parker, forthcoming) mapped REDD+ relevant financial flows, including both public sources of revenue and expenditures that contribute to deforestation and forest degradation.
- EFI and CIEM’s work in Central Highlands in Vietnam, which looked at planned investments in land-use sectors, including those aligned to the REDD+ Action Plan (EFI and CIEM, 2018).

¹ Potential rebound effects might need to be considered for both of these activities.

1.3.3 Which sectors or commodities are of particular interest?

In preparation of a discussion/decision on which sectors or commodities to include, you may consider questions such as:

- ▶ What are the key drivers of deforestation and degradation now, and what are they likely to be in the future? Which actors are involved in activities related to those drivers?
- ▶ What sectors of the economy, therefore, drive deforestation or minimise the drivers of deforestation?
- ▶ What land-use sectors are prone to the impacts of climate change, or help increase the resilience of land-use systems?

Certain sectors might be interesting for a jurisdiction/country seeking opportunities for additional external funding and could be the focus of a targeted finance mapping.

Sectors may include forestry, agriculture, energy, manufacturing, mining and quarrying, water supply, infrastructure or land management.

Commodities may include, for example soya, beef, timber or palm oil. These are discussed in more detail in Module 3.

Examples from previous finance mapping activities assessing particular sectors include:

- EFI and CPI work in Côte d'Ivoire (Falconer et al. 2017), which mapped activities that were considered 'relevant' in the context of the country's National REDD+ Strategy, including agriculture, forestry, domestic energy, environment, mining and planning policy.
- UNDP's work in Papua New Guinea (Parker, forthcoming) included the agriculture and forestry sectors that were identified as climate-relevant land-use sectors.
- ODI's analysis of subsidies to key commodities driving forest loss, which tracked domestic and international public subsidies that apply to private sector beef and soy production in Brazil, and public-sector subsidies (domestic and international) to private sector timber and palm oil production in Indonesia (McFarland et al., 2015).

1.3.4 What geographic scope should be reflected?

Should the mapping capture global, national, local (state, municipality), and institutional level? Most mapping initiatives conducted to date have been at the national level, however tracking at the sub-national level may provide a greater level of detail, particularly relevant in federal or decentralised governance systems.

One challenge to consider is if data may be harder to obtain at sub-national level, and whether it will be consistent with data collected at national level. This could be an opportunity to assess the level of coherence and coordination in budget planning and reporting between different levels of government.

Previous finance analysis activities conducted at the sub-national level include:

- EFI and CIEM work in Vietnam with five provinces of the Central Highlands region
- Forest Trends' REDD+ finance tracking in Amazonia and Acre states, Brazil

1.3.5 What timeframe should the analysis cover?

Options of timeframe for the analysis include whether the analysis would consider past (ex-post) or future (ex-ante) spending, or both, and whether it will focus on one specific year, or on a longer time period.

Annual vs. multiple year

Focusing on a specific year can provide a snapshot and baseline view of annual land-use expenditure, which can be updated each year or every two years. Mapping multiple years can show trends in the way financing may be changing. However, multiple-year mapping can encounter challenges of inconsistency in data between years.

Choosing very recent year(s) might mean that data is not yet available, as official reporting is often delayed by one to two years after the fact.

Ex-post vs. ex-ante

A decision needs to be made on whether to undertake ex-post or ex-ante analysis. Ex-post analysis provides information on actual expenditure, while ex-ante analysis provides information on planned expenditure through budgets. Ex-ante mapping can help inform resource mobilisation strategies to achieve policy goals. However, data access and accuracy can be challenging.

Commitments vs. disbursements

For ex-post analysis, the project team must decide whether the public finance mapping will capture financial commitments or disbursements of financial institutions and donors. Financial commitments represent a firm obligation to provide financing to a project, by means of financial contract closure or a Board decision on investment. The full amount of the transaction would be recorded irrespective of the time required for the completion of the project, for example loan or grant amounts.

Financial disbursements, rather, denote the specific disbursement of the agreed transaction in the given year, for example loan or grant drawdowns.

A focus on commitments rather than disbursements affects the magnitude of flows because large, committed amounts are often disbursed over several years. Consistent data on disbursements is often lacking across international public finance actors, but can be available through national budget and expenditure systems.

Previous finance analysis activities conducted over different timeframes include:

- Most analysis focused on ex-post disbursement data for a single year, generally the most recent in terms of audited data availability (Indonesia climate finance landscape, Côte d'Ivoire and Papua New Guinea land-use finance mapping)
- EFI and CIEM's mapping of investments at sub-national level in Vietnam looked at planned (ex-ante) data for a five-year period

1.3.6 What sources of finance will be included?

Another important high-level scope question is whether the study will cover public and private financial flows, from both domestic and international sources, or some subset of those flows. The choice of financial flows to be tracked should be determined according to the key activities contributing to, and acting against, sustainable land use, and where the capital that supports these activities flows from, as well as by data availability.

For example, if the scope of the study is to assess forestry finance in a country where the majority of forestry investment is made by the public sector, then public investments should be tracked. If, on the other hand, the scope of the study is to assess finance flows for a specific commodity, such as palm oil, in a country where palm oil is largely financed by private sector actors, then the incentive framework for private investment and actual private investments should be tracked.

Some key questions for consideration are:

- ▶ What is the role of forests in the national development plan (three-five years), the medium-term expenditure framework, fiscal policy direction, and/or national spending?
- ▶ What are the main economic activities in the region of interest? What are the main sources of (budget) revenue?
- ▶ Is the majority of land use, agriculture or forestry activity in the jurisdiction publicly or privately financed?
- ▶ What are the main industries active in the land-use sectors? Where are investors mostly from? (national/international)
- ▶ What is the role of domestic and international sources of finance?
- ▶ How easy will it be to collect and access data?

Previous finance mapping activities also covering the private sector include:

- CPI's Landscape of Climate Finance in Germany, 2010, which revealed the dominance of mitigation expenditures by corporate actors and households across all sectors of the economy, focusing on domestic funding sources (Juergens et al. 2012).
- Other finance mappings carried out by CPI and EFI in Indonesia (Ampri et al. 2014) and Côte d'Ivoire (Falconer et al. 2017) focused on public finance as a first step, including from domestic and international sources of finance.

1.3.7 What type of finance will be assessed?

The decision on the sources of finance to include influences the types of finance to assess. An analysis of public finance can be limited to:

- public expenditures and investment flows from domestic sources and/or international public actors, and/or
- public revenue raising from land-based industries, including taxes and non-tax revenues, or
- public subsidies in general, including regulations, grants and low-cost loans, tax incentives, government budget spending for research and development, and awareness campaigns.

Private finance analysis may include:

- private sector investment through debt or equity in projects, and/or
- financial markets where finance is raised through stock and bond issuances.

The scope can be identified through workshops with sector experts and ministry officials, but crucially also needs to give careful consideration to data availability, timescales and resource availability.

Challenges may also arise in capturing multiple, or all, types of finance, where overlaps exist and there is a potential for double counting. For example, subsidies that incentivise a private investment by providing revenue support for sustainable agricultural production.

The following sections provide guidance for the project team to explore these sources of finance in more detail, and lists key questions, actors and instruments for consideration. Module 4 revisits the flows to further refine the key actors to be included in the mapping, and build a first view of their interconnections.

At this stage, you should also start to gather information to understand the public and private finance management systems in the jurisdiction, for example budget/finance laws, documents on budget processes and budget classification, relevant laws and regulations, annual reports of public agencies, documents of state-owned enterprises (SOEs), funds accounts, audit reports or evaluation reports.

Public Expenditure and Investment Flows

Public finance analysis considers public sector expenditures and investments made with domestic and/or international sources of finance. The analysis typically includes federal and ministry-level expenditure (occurring within the national budget), transfers from national government to local government, to SOEs and to financial institutions, as well as the expenditures and investments of those entities. See Module 5 for an introduction to government budget. This category also includes international donor or public financial institution investments that occur inside and/or outside of the national government budget.

Key questions for consideration include:

- ▶ Which ministries, agencies, SOEs, funds and public financial institutions play a role in distributing finance for land-use activities?
- ▶ Which types of financing (planned expenditure/investment, operational budgets, revenues) does the jurisdiction hope to influence? Where do opportunities lie?
- ▶ Are there specific public funds or funding mechanisms related to the land-use sector?
- ▶ What mandates do departments, agencies and local governments have in sectors related to land use, if any? What role do they have in financing and implementing national programmes?
- ▶ Which transfer mechanisms channel budget from the central to local level?
- ▶ Which donors and international public financial institutions are most active in funding land-use activities?
- ▶ Do donors support the national/local government directly through government budget or off-budget/direct programme support? How is public finance captured in domestic budgets? Is budget data accessible to the project team?

Key actors to consider for inclusion are:

- Central government/line ministries – focus on those most relevant for land use, for example environment, forestry, water, agriculture, energy, mining, industry, infrastructure, planning and finance, depending on the project scope
- Local government (provincial/state, municipality/county, district)
- Public agencies supporting the implementation of line ministries' mandates, including environmental agency, meteorological agency, national parks and rural development agencies, forest management agencies, agriculture sector research and development agencies, environmental monitoring agencies and agriculture chambers of commerce
- Public trust funds operating at the national or local level with a portfolio in relevant sectors, including, for example, a national REDD+ fund, rural development fund or environmental trust fund
- SOEs operating in relevant sectors
- Public financial institutions or financial institutions with a majority public shareholding and with a portfolio in relevant sectors, including public agricultural credit agencies
- International public actors: bilateral donors, multilateral agency/fund, multilateral/regional/bilateral development finance institutions
- Private and civil society actors, for example NGOs, academic and research centres, and other public non-state actors: they might be supported by donors, usually off-budget, or through direct programme support

Key financial instruments to be analysed include:

- Domestic public budget recurrent expenditure to fund operating expenses for core and special programmes or policies; investment expenditure to create future benefits, for example infrastructure expenditures; and transfers to local governments or other implementing agencies. These are executed by line ministries and departments or agencies
- Grants by international and domestic public actors, generally channelled to fund investments without the expectation that the money be repaid. Used to cover, for example, capacity building, feasibility studies or incremental cost of a climate change investment.
- Loans by the government, contracted by international financial institutions or commercial banks. These may be at concessional or commercial terms
- SOEs and financial institutions may use balance sheet financing as well as equity and debt
- Sovereign bonds

Challenges for capturing government budget data include:

- Inconsistency between datasets of different years since ministries often change, merge, close or expand, with implications for budget structure
- Distinguishing operational budgets, which pay for salaries and running ministry offices, from investment budgets, which pay for specific programme implementation, infrastructure and so forth.
- Data on off-budget flows/direct programme support by international actors, public subsidies, public agencies, SOEs and banks, as well as local government budgets can be difficult to obtain and often requires time-consuming bottom-up data collection

Subsidy flows

Government or government agencies may establish fiscal (dis)incentives, as well as policies and regulations that guide private investment behaviours and impact the actions of land users and commodity supply chain actors.

Subsidies can be wide ranging and include: regulatory instruments; taxes and fees for land users and supply chain players; feed-in tariffs; agricultural production or protection credit; and publicly-backed insurance for loss of income in the agricultural sector or carbon market payments. Figure 4 provides a more comprehensive list of potential subsidies.

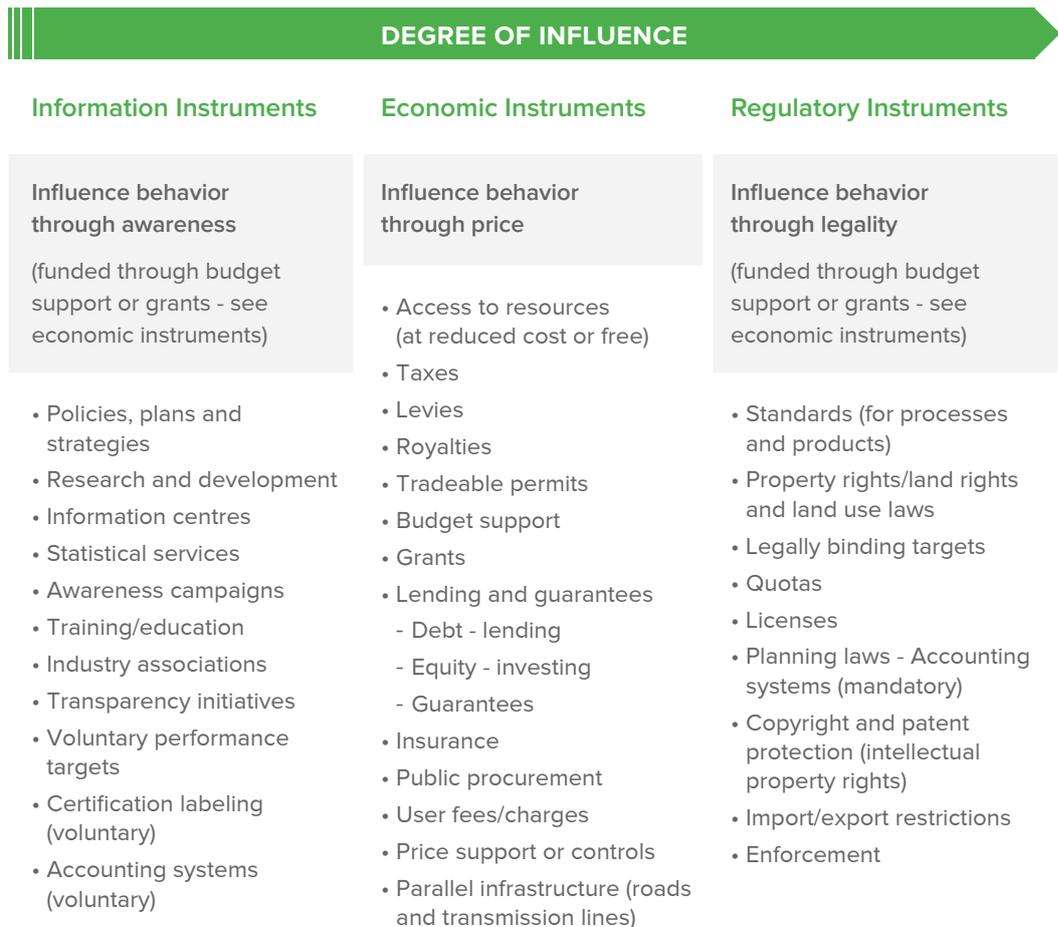


Figure 4: Instruments of government support (ODI, 2015) ▶

Key questions for consideration:

- ▶ Are there national policy goals with a potential to affect land use or land-use sectors (food and energy security, income buffering for certain actors/sectors, energy supply diversification, rural development, improved national transport infrastructure, or other interests in special sectors or regions)?
- ▶ What fiscal policies or measures related to the land-use sectors (subsidies, tariffs, taxes, levies and so forth) are in place at the national or local level?

Key actors to consider include:

- Central government
- Central banks acting on behalf of central government
- Local governments with devolved fiscal responsibilities
- Commodity boards and other statutory authorities
- Commodity importing governments

Key financial instruments include:

- Government budget revenue tools as part of the fiscal policy framework, for example taxes and fees for land users and supply chain players
- Government budget spending tools as part of the fiscal policy framework, for example budget expenditure on insurance for loss of income of the agricultural industry, research in the agricultural sector, tax breaks, or policy and regulatory expenditures.
- Grants
- Low cost debt
- Low cost equity

If it is decided to include subsidies, caution should be taken when later aggregating and presenting data in order to avoid double counting. For example, subsidies lowering investment cost or supporting revenues pose a risk for double counting when tracking public subsidies and private sector investment flows.

Primary financial transactions and investment cost vs. revenue support mechanisms

CPI's Landscapes of Climate Finance have typically captured total primary financial transactions and investment costs or, where tracked, components of activities that directly contribute to adaptation and/or mitigation, plus public framework expenditures (for example, development of national climate strategies). CPI does not track policy-induced revenue support mechanisms, secondary market transactions, or other revenue support mechanisms. Revenue support mechanisms, such as feed-in tariffs, carbon market payments or payments for ecosystem services, pay back investment costs, so including them would constitute double counting if aggregated. Other private sources of revenue are also not generally mapped in existing studies of flows of finance. Secondary market transactions (for example, re-selling of stakes) are not tracked because they do not represent new money targeting climate-aligned outcomes, but rather money changing hands (Falconer and Stadelmann, 2014). CPI instead considers subsidies in case study analyses, where the often-complex role of subsidies can be considered in detail.

Public Revenue Flows

In tropical forest countries, revenues raised from natural resource exploitation often represent a large contribution to national revenues due to taxes, levies, royalties and fees incumbent on natural resource users. At the same time, revenue raising instruments can influence behaviour and be used as fiscal policy tools to help meet sustainable land-use targets.

Key questions for consideration:

- ▶ What are the sources of funding for the domestic public budget? Do related measures influence land-use practices, for example do instruments that are calculated based on land area have the potential to influence decisions related to land expansion and incentivise better productivity per hectare?
- ▶ How does the government raise revenue from land users?
- ▶ How is natural resource revenue redistributed to local governments or sectoral departments?

Key actors to consider include:

- Ministry of finance, including treasury department
- Statutory authorities, including commodity boards
- Producers and other commodity supply chain businesses, including traders, manufacturers, and retailers

Key financial instruments include:

- Tax instruments, such as land and building tax
- Non-tax instruments, such as levies, royalties (for exploitation by mining companies or production by geothermal), and fees (for forest utilisation licences)

Often, data related to domestic revenues is not directly available and proxy analysis may be needed to fill these gaps.

In Papua New Guinea, two key data sources were helpful to improve understanding of domestic climate-relevant land-use revenues (Parker, forthcoming). These were annual financial reports of statutory authorities that list the amounts collected through various non-tax instruments, as well as domestic trade data collected monthly by the Bank of Papua New Guinea.

Private Sector Investment Flows

In some countries, private finance accounts for a higher share of total investment in climate finance. These investments are not captured in most climate finance mapping analyses so far, due to poor data availability (UNDP, 2012). When mapping private sector engagement, it will be useful to understand the relevant players – investors, corporations, producers, traders – and the financial instrument used – equity, debt or balance sheet financing. Expenditures in agriculture and forestry will often include both working capital and capital expenditures, funded through a producer's own balance sheets, rather than a project attracting debt and equity investment on the strength of future cash flows. Upstream sources of finance for producers may include formal and informal lenders. Sustainable land-use project developers may be financed by a blend of equity, grants and debt.

Key questions for consideration:

- ▶ What are the main industries active in the land-use sectors?
- ▶ What are the main policies and instruments used to stimulate private investments?
- ▶ Where are investors mostly from (national/international)?
- ▶ Is there data available on the amount of investment? Any institution/organisation collecting relevant data?

Key actors to consider include:

- Institutional investors, including commercial financial institutions and (impact) funds
- Producers, including corporate actors and households/family farms
- Project developers
- Service providers, traders, unions or industry associations
- Civil society, for example NGO, academic and research centres, religious authorities, charities/philanthropists
- Commercial banks and funds (domestic and international)

Key financial instruments to be analysed include:

- Balance sheet finance
- Grants in subsidised markets
- Loans
- Bonds
- Equity
- Guarantees

Mapping private sector investment flows is still very ambitious for most countries, as data is sparse and difficult to compare. There is no established methodology to quantify private investments into land use, and research in this area is resource-intensive. Some inroads are being made at the global level by researchers and organisations, including Lowder et al. (2015), and Forest Trends (2015), as well as through the work of COWI for the European Union (COWI, 2018) that looks at private investment in REDD+ in more detail.

Challenges for capturing private finance data include lack of centralised and publicly available datasets, necessitating bottom-up data collection, which will also likely be challenging due to the large number of actors concerned and confidentiality concerns. There are also challenges in understanding what should be measured, and when, when it comes to private expenditures and investments, for example working capital vs. capital investment. One option may be to focus on the volume and price of commodities sold as this encapsulates investments made throughout the value chain. This is an imperfect proxy, however, as it captures revenue, not investment in a given year, and is therefore inconsistent with annual disbursement or commitment data on the public side.

1.4 What data is available?

A key factor for scoping decisions includes awareness of what data is available:

- ▶ What data sources are already accessible that cover the sectors or activities under consideration?
- ▶ What additional data could be collected?

It is useful to start listing potential data sources for different sources of finance, actors or instruments.

Any pre-existing budget analysis in the context of a UNDP Climate Public Expenditure Review (CPEIR), a World Bank Public Expenditure Reviews (PER), or a UNDP Climate Change Financing Framework (CCFF) also provides a helpful base for understanding what data sources already exist.

More information is available in Module 5 on data collection and Annex I.

1.5 What resources are needed?

When discussing the potential scope of the study, it is important to consider the amount of time and resources required for the different options previously discussed.

1.5.1 Time Requirements

Table 4 sets out the range of time required for various processes in the mapping exercise with a team consisting of two-four core experts, based on experiences so far. The resources required are highly variable depending on ease of data collection and stakeholder engagement, the size of the jurisdiction, and the complexity of the scope of work or the sectors considered. The work can be streamlined once the methodology has been established and through use of expert local staff with a good understanding of different data sources and links to data providers.

Some further resourcing considerations are:

- If land-use finance mapping is planned to be done regularly, then it makes sense to explore how the first-time exercise may set up future iterations. For example, allowing extra time for testing the data collection process could lead to automated processes in the future, such as introducing a new ‘climate marker’ in the state budget database, or increasing the frequency of surveys prepared by statistics agencies
- Compromising on the level of certainty required for the first-time land-use finance mapping can save time initially, and quality can be improved with each iteration
- The level of detail and accuracy the work aims for should be balanced with resource availability
- Some key data sources, such as government ministries, require allocation of dedicated internal staff to assist in the work

Task	Time	Person/days
Scoping	0.5 - 1.5 months	5 - 60
Stakeholder engagement	1 - 2 months over the course of work	10 - 40
Mapping Framework	0.5 - 1 month	5 - 20
Data Collection	3 - 5 months	20 - 150
Data Processing	1 - 2 months	10 - 40
Data Analysis and Presentation	2 - 3 months	10 - 50
Using the results	1 - 3 months	10 - 40
Total	9 - 15 months	70 - 420

Table 4: Person day estimates to prepare a land-use finance mapping

1.5.2 Project Team Requirements

The size of the team required will also depend on its members’ skill set, and the level of buy-in and involvement of important stakeholders, such as the ministries of finance or budget and planning, which can help access and interpret data.

Required skills and experience

- Experience working with the relevant government on public policies related to agriculture and/or forest-related issues
- Understanding public and private financing needs and existing practices in relevant sectors

Experience in public financial management

- Understanding the budget structure, tax system, fiscal incentives, private investment vehicles and so forth.
- Excellent network of contacts with relevant government departments and private financial institutions, experts, data providers and so forth.
- Quantitative data analysis skills

Additional skills and experience

- Experience using software to visualise climate finance flows
- Previous experience in mapping and tracking qualitative and quantitative flows of public and private finance at the global and national level

Template 1 - Scoping checklist



Template 1 - Scoping question checklist

Questions	Responses
What are the broad policy objectives, context and policies framing the work?	
What are the specific policy objectives of the mapping? How are the outputs likely to be used?	
Would the analysis capture climate mitigation and/or adaptation activities related to land use?	
Would the mapping also include finance in land-use activities that drive deforestation, or could drive it? (business-as-usual finance, in addition to green investment in forest restoration, protection, zero deforestation, etc.)	
Which sectors or commodities are of interest?	
What geographic scope should be reflected, for example national, provincial, etc.?	
What period should the analysis cover? Will it be a one-off or multi-year approach?	
What sources of finance will be included?	
What type of finance will be assessed?	
Preliminary ideas on sources of data and key actors to involve	
Available resources (budget, human resources)	