UNITED NATIONS DEVELOPMENT PROGRAMME

GUIDEBOOK

on the methodology for financial assessments to address climate change

FINANCIAL ASSESSMENT TO ADDRESS CLIMATE CHANGE IN THE FORESTRY SECTOR (Mitigation)

Definition of the forestry sector

- Either use **UNFCCC definitions** or **national definition** of land-use type, particularly to make the distinction between forest and non-forest.
- **FAO definition**: Forest is a minimum area of land of 0.05-1.0 hectares with tree crown cover (…) of more than 10-30 % (…). A forest may consist either of closed forest formations (…) or open forest. Young natural stands and all plantations (…), as are areas normally forming part of the forest area which are temporarily unstocked (…).

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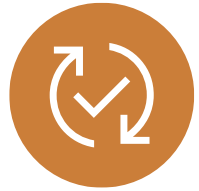

Step 8. Identify policy implications.

Step 9. Synthesize results and complete the report.

Step 1.

Establish key parameters of the assessment.

- Define scope and boundaries for the assessment
- Define the institutional framework
- Specify the time horizon for the assessment, matching the time horizon of national target being assessed
- Specify base year (latest year with data available)
- Build on existing model/analysis/tracking system as applicable

Define boundaries for the assessment

Mitigation options (general)	Mitigation options in the forestry sector (subsectors)	Forest management type
Reduction of GHG emissions	Reducing emissions from deforestation & forest degradation (REDD) (which is currently under negotiation)	Managed (natural) forest
		Unmanaged (natural) forest under deforestation or degradation threat
Carbon sequestration	Afforestation	Non-forested land (abandoned land, waste land, pastures, agricultural land)
	Reforestation	
	Enhancement of sinks through forest restoration	Degraded forest
Carbon substitution	Substitution through harvested wood products: using forest products for electricity & fuel	Targeted biofuel plantations

Select analytical approach

- Development of simple speadsheets based on Excel sheets provided by this financial assessment methodology
- Building on existing transport models, tracking system, budget tagging as applicable
- Use sector projections/trends to determine projected demand & supply in the sector

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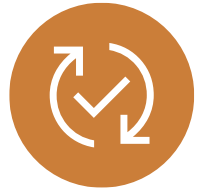

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Step 2.

Compile historical IF, FF and O&M cost data, subsidy cost data (if included explicitly), and other input data for scenarios.

- Gather disaggregated IF and FF data on investment types (e.g., wind energy facilities, biomass fired power plant, etc.), investment entities and funding sources for 3 -10 years in the recent past
- Gather socio-economic information (demographic development, economic development etc.) for 3 -10 years in the recent past

Data sources

Sources of data:

- Sectoral plans
- Development plans
- Energy sector/econometric models
- National budget tagging/tracking or transparency mechanisms
- Private sector reports
- GHG Inventories, National Communications etc.
- System of National Accounts (SNA), Systems of integrated environmental and economic accounts (SEEA)

Data collection

Forest mitigation options	Baseline scenario		Mana-gem. System	Labour	Equipment	…
	Historical trend	**Future scenario**	**IF and FF**	**IF and FF**	**IF and FF**	**IF and FF**
REDD	Continuation of the deforestation & degradation trend	1.Constant deforestation and forest degradation (DD) rate 2.Acceleration of DD 3.Deceleration of DD				
Afforestation / reforestation	Continuation of grazing land	1.Grassland with increased / decreased productivity rate 2.Change to cropland or wasteland 3.Change to other land use				
	Continuation of cropland	1.Grassing land with increased / decreased productivity rate 2.Change to grassing land or wasteland 3.Change to other land use				
Substitution through harvested wood products	Maintaining current use	Land use change Change in productivity rate				
…	…	…				

Compile historical IF and FF data

Template for 1 year of historical IF and FF data (simplified)

Category of investment entity	Source of IF and FF	Investment Type 1 (IF, FF, Total)	Investment Type 2 (IF, FF, Total)	Investment Type 3 (IF, FF, Total)	Total investment
Households	Domestic				
Corporations	Domestic				
	Foreign				
	Total Corporation Funds				
Government	Domestic				
	Foreign				
	Total Government Funds				

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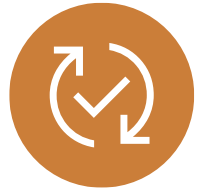

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Define a baseline scenario.

- Define the physical basis for the baseline scenario
- **Baseline scenario:** description of what is likely to occur in the absence of ADDITIONAL policies to address climate change; expected socio-economic trends (e.g., population growth and migration, economic growth), technological change and expected business-as-usual investments in the sector.

Define baseline scenario

- Characterizing each relevant electricity supply and electricity end-use subsector over the assessment period
  - Assuming no new climate change policies are implemented
- Baseline scenario reflects:
  - Current sectoral and national plans
  - Expected socio-economic trends
  - Expected investments in the subsectors

Define physical basis for the baseline scenario

- Information should be disaggregated by:
  - Year (starting 10 years before the assessment's Base Year)
  - Source (by corporations and government)
  - Type (national funds, foreign direct investment, official development assistance

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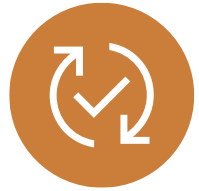

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Step 4.

Identify the annual IF, FF and O&M costs, and subsidy costs (if included explicitly), for baseline scenario.

- Compile annual data, disaggregated by investment entity, funding source, investment flow type, financial flow type
- Calculate the **total IF and FF** in real, unannualized terms over the planning period
- Define **annual IF and FF** of the baseline scenario

Define and project annual IF and FF

Funding entity category	Source of funds	Cumulative IF and FF* 2025-2050 (billion 2025 $)	
		IF	FF
Households	Domestic		
Corporations	Domestic equity		
	Foreign investment		
	Domestic debt		
	Foreign borrowing		
	Government support		
	Foreign aid (ODA)		
Government	Domestic funds (budgetary)		
	Foreign borrowing (loans)		
	Foreign aid (ODA)		
	Total		

* Infrastructure, organic material, fertilizers, equipment, labour, research, services…

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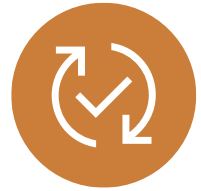

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Step 5.

Define the target scenario.

- **Target scenario:** incorporates new and scaled-up measures to address climate change
- The target scenario should describe expected socio-economic trends, technological change, relevant measures to reduce GHG emissions and the expected investments in the energy sector (e.g. end-use and supply subsectors) to implement those mitigation measures

Define the physical basis for target scenario

			Mitigation scenario	
Forest mitigation options	**Type of land**	**Current land use**	**Forestry option (examples)**	**Possible activities in the forest management plan**
Reducing emissions from deforestation & forest degradation (REDD)	Forest	Conservation areas & managed production & protection forests	a) Forest conservation b) Sustained yield management c) Reduced logging	• Clarification of land & carbon tenure • Defining the system • Labour • Training • Infrastructure • Machinery & equipment • Miscellaneous
Reducing deforestation by enhancing forests	Forest land	Accessible used/unsustainably managed forest	a) Enrichment planting b) Guided natural regen. c) Ecological restoration	
Afforestation/ reforestation	Non-forest	Grassland	Clean Development Mechanism Afforestation/Reforestation Plantations	
		Cropland		
		Waste land		
Substitution through harvested wood products	Forest or non-forest	Forest plantations etc.	Forest plantations for wood production	
…	…	…	…	

Two approaches to define target scenario

- Approach #1: assume an end point for electricity supply emissions
  - E.g. Set a target in 2030 for emissions from the electricity sector
- Approach #2: assume a set of technologies for electricity supply
  - E.g. Articulate a set of technological options to meet future energy demand

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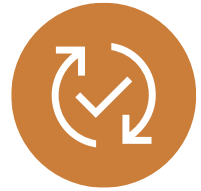

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Step 6.

Identify annual IF, FF and O&M costs (and subsidy costs if included) for the target scenario.

- Compile annual data, disaggregated by investment entity, funding source, investment flow type, and financial flow type
- Calculate the **total IF and FF** in real, unannualized terms over the planning period.
- Define **annual IF and FF** of the target scenario

Project IF and FF of target scenario

Activity needed to achieve standards (examples)	IF US$	FF US$	O&M cost US$	Potential funding sources
Effective conservation of Forest Protected Areas (REDD) • Development of effective management of protected areas. • Implementation of REDD demonstration projects				
Effective management of Production Forests • Initiatives to contain illegal logging • Outcome based independent certification • Investment in Reduced Impact Logging				
Enhancement of degraded forests by forest restoration • Decentralization of forest management • Silviculture (natural regeneration, enrichment planting) • Ecological restoration				
Enhancing capacity of community groups Protect the rights of forest dependent indigenous peoples, reducing encroachment & forest degradation.				
…				
Total for initial 5-years programme				

Define and project annual IF and FF

Funding entity category	Source of funds	Cumulative IF and FF 2025-2050 (billion 2025 $) IF	FF
Households	Domestic		
Corporations	Domestic equity		
	Foreign investment		
	Domestic debt		
	Foreign borrowing		
	Government support		
	Foreign aid (ODA)		
Government	Domestic funds (budgetary)		
	Foreign borrowing (loans)		
	Foreign aid (ODA)		
	Total		

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Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.

- Subtract the annual IF and FF of the baseline scenario, by entity and funding source, from the annual IF and FF of the target scenario, by entity and funding source
- Sum incremental amounts over all years, by entity and funding source

Determine changes in IF and FF

IF and FF of target scenario

minus

IF and FF of baseline scenario

= Additional IF and FF

- For each mitigation option the assessment must identify the additional IF and FF by source (national funds, etc.) throughout the assessment period to implement the national target being assessed.

Calculate incremental IF and FF

Funding entity category	Source of funds	Investment (billion 2025 $)		
		Cumulative (2025-2050)		
		Baseline scenario	Target scenario	Incremental
Households	Equity & debt	Baseline value	Target value	Target minus Baseline value
Corporations	Domestic equity	…	…	…
	Foreign investment			
	Domestic debt			
	Foreign borrowing			
	Government support			
	Foreign aid (ODA)			
Government	Domestic funds (budgetary)			
	Foreign borrowing (loans)			
	Foreign aid (ODA)			
	Total	Sum (Baseline)	Sum (Target)	Sum (Target minus Baseline)

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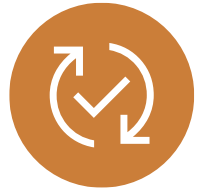

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Identify policy implications.

- Identify the entities responsible for the significant incremental changes in investment and financial flows
- Determine the predominant sources of their funds
- Determine policy instruments and incentives to induce the required changes in investment and financial flows

Determine suitability of different policy options

Examples of mitigation & policy options

	Regulations and standards	Taxes & charges	Tradable permits	Subsidies & incentives	Information instruments	Research & development	Voluntary agreements
Definition	Specific abatement technologies or minimum requirements for pollution output	A levy imposed on each unit of undesirable activity by a source	Limits emissions by specified sources, each source holds & trades permits	Direct payments, tax reductions, price supports	Public disclosure of environm. information	Government spending and investment to generate innovation on mitigation	Agreement between government & private parties on environm. objectives
Benefit	Good if clear thresholds can be defined & to ensure minimum standard	Efficient, on the long run development of new technology	Emission reductions are reached at the economically least cost	Easily accepted by private sector	Prerequisite for accept. of most other instruments.	Potential long-term benefit for national economy as research hub	Often favoured by industry because of their flexibility
Challenges	No incentive to go beyond the target	High coordination challenge, low short-term effect	Difficult to allocate initial shares to sources	Requires fiscal expenditures	Low effectivity if used alone	Almost no short- & medium-term effect	Often lack of enforcement

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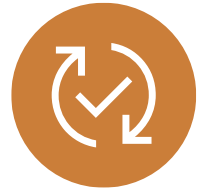

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Synthesize results and complete report.

- Reporting takes place throughout the assessment, does not start at the end of the assessment
- Capturing information and data, decisions and assumptions completely and transparently
- Ensuring credibility of the assessment and enabling follow-up on the assessment results
- The Reporting Guidelines contain key tables required. Excel spreadsheets are available to organize and calculate data.

Q&A
Clarifications

About UNDP

UNDP is the leading United Nations organization fighting to end the injustice of poverty, inequality, and climate change. Working with our broad network of experts and partners in 170 countries, we help nations to build integrated, lasting solutions for people and planet. Learn more at undp.org or follow at @UNDP.

About UNDP's Climate Promise

UNDP's Climate Promise is the UN system's largest portfolio of support on climate action, working with more than 140 countries and territories and directly benefiting 37 million people. This portfolio implements over US$2.45 billion in grant financing and draws on UNDP's expertise in adaptation, mitigation, carbon markets, climate and forests, climate risk and security, and climate strategies and policy. Visit our website at climatepromise.undp.org and follow us at @UNDPplanet.

About this publication

This methodology is an update to the first financial assessment methodology, which was released in 2009. The objective of this methodology is to support countries to implement their climate targets and to identify, reallocate, mobilize and manage the required financial resources and to create a fiscal framework conducive for climate action.

The update to this methodology was developed under UNDP's Climate Promise by the *Pledge to Impact* Programme. Delivered in collaboration with a wide variety of partners, the initiative has supported over 120 countries to enhance and implement Nationally Determined Contributions (NDCs) under the Paris Agreement. From Pledge to Impact is generously supported by the governments of Germany, Japan, United Kingdom, Sweden, Belgium, Spain, Iceland, the Netherlands, Portugal and other UNDP core contributors. This programme underpins UNDP's contribution to the NDC Partnership.

UN disclaimer

CLIMATE PROMISE

From the People of Japan

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