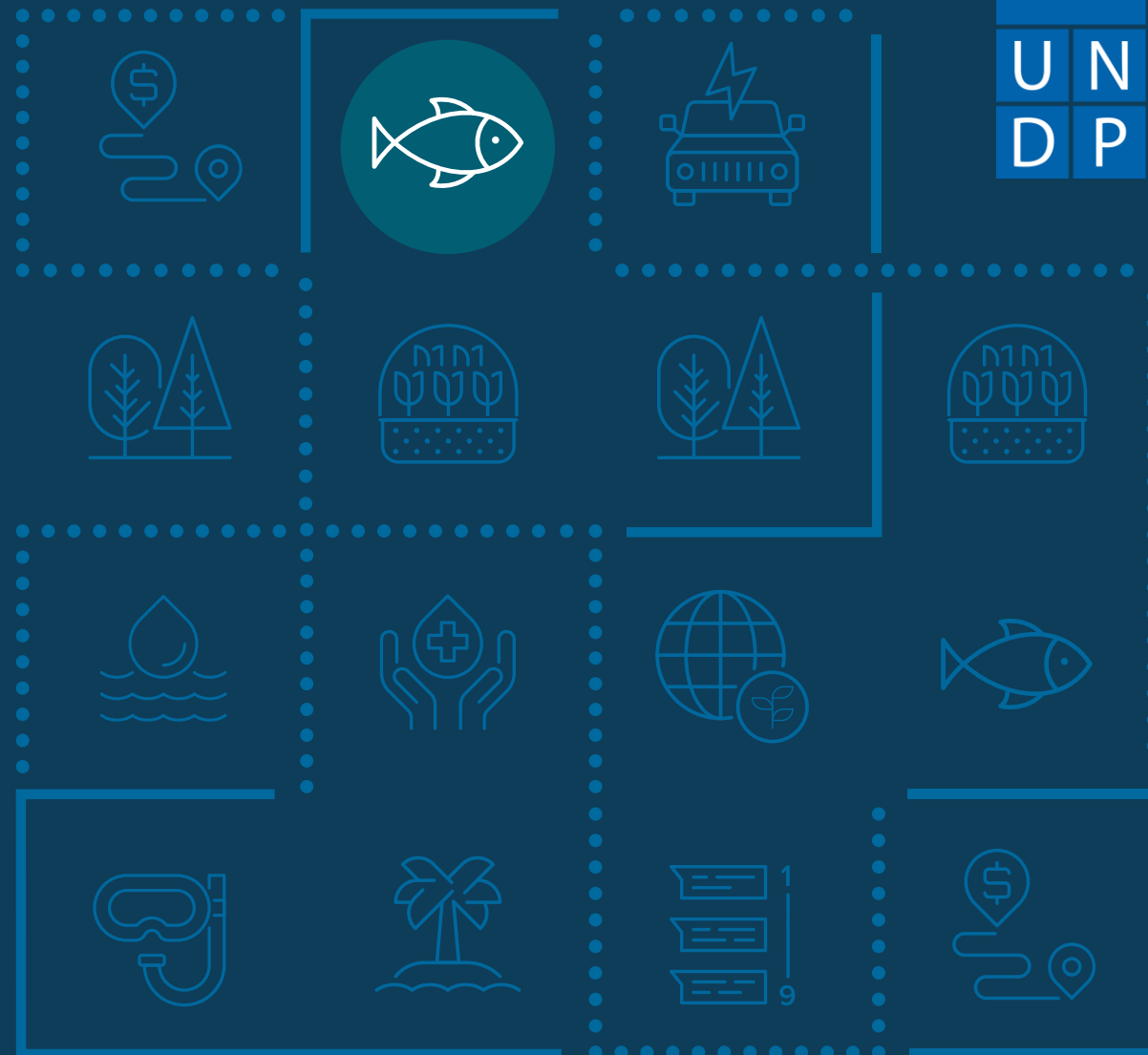
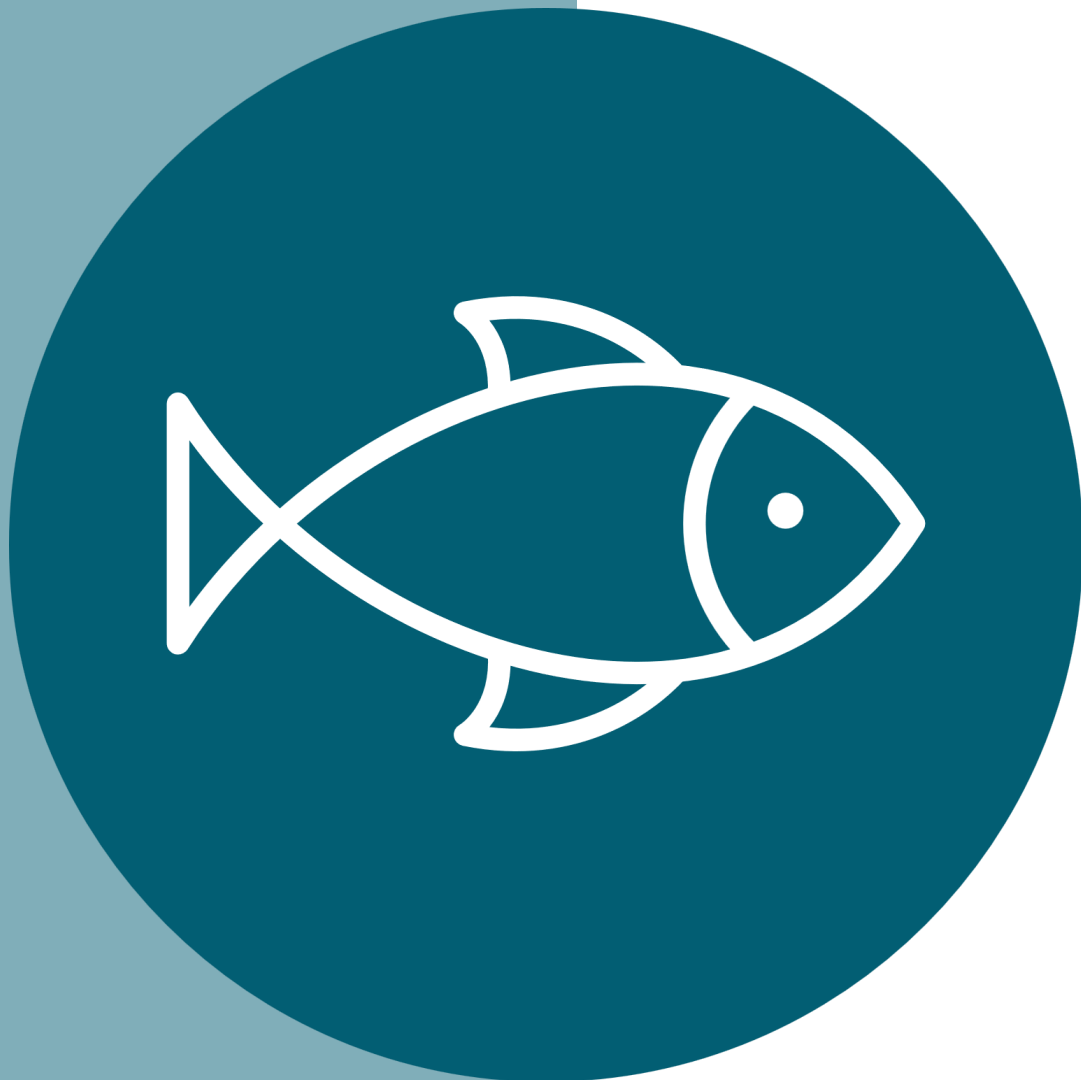


GUIDEBOOK

on the methodology for financial assessments to address climate change

FINANCIAL ASSESSMENT TO ADDRESS CLIMATE CHANGE IN THE FISHERIES SECTOR





Relevance of the fisheries sector

- Capture fisheries and aquaculture supplied the world with about 223 million tonnes of food fish a year.
- Aquaculture is the fastest growing food production industry in the world, highly diverse in cultured species in different systems, and has been growing at a rate that is almost three times that of terrestrial farmed meat production systems ([FAO, 2024](#))
- Climate change constitutes a threat to the sustainability of capture fisheries.

Step 1. Establish key parameters of assessment.



Step 2. Compile historical IF, FF and O&M cost data (and subsidy cost data if included explicitly) and other input data for scenarios.



Step 3. Define baseline scenario.



Step 4. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the baseline scenario.



Step 5. Define target scenario.



Step 6. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the target scenario.



Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



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

Step 1. Establish key parameters of the assessment.



Approaches in the fisheries sector

System	Condition	Consequence
Marine ecosystems	Less geographically constrained than terrestrial systems.	Transboundary management, control & utilization, & reinforced regulatory frameworks.
Fish populations	Migrate over long distances, passing through multiple territorial waters.	Transboundary management, control & utilization, driven by natural environmental factors
Fish populations	Common property resources	Adaptation options centre on altering catch size & effort
Fisheries	Stocks fluctuate due to interannual & decadal climate variability & consequently	Industry has developed considerable coping capacity.
Fisheries	Marine fish stocks are being exploited close to or above productive capacity in three-quarters of world	Reductions in the level of fishing are required in many cases to sustain yields.

Step 1. Establish key parameters of the assessment.



Possible adaptation measures for fisheries

Impact of climate change on fisheries	Adaptation measures
a. Governance & institutional elements	Institutional mechanisms, resource allocation
b. Legal elements	Regulatory tools, ...
c. Policy & planning elements	Support initiatives to reduce fishing effort in overexploited fisheries, fiscal incentives, ...
d. Fisheries system elements	Explore the availability of alternative fishery resources Diversify livelihoods, exit the fishery
Increased variability of yield	Insurance schemes, migration of fishing strategies
Reduced profitability	Managed retreat/accommodation Early warning systems and education
Increased dangers of fishing	Weather warning system
Influx of new fishers	Support for existing local management institutions diversify livelihoods through microcredit
e. Financial elements	Cluster insurance, emergency funds, pooling of risks
f. Research	Assess risks of future fish stock variation



Select analytical approach

- Development of simple spreadsheets 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

Step 1. Establish key parameters of assessment.



Step 2. Compile historical IF, FF and O&M cost data (and subsidy cost data if included explicitly) and other input data for scenarios.



Step 3. Define baseline scenario.



Step 4. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the baseline scenario.



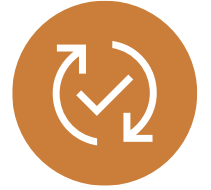
Step 5. Define target scenario.



Step 6. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the target scenario.



Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



Step 8. Identify policy implications.



Step 9. Synthesize results and complete the report.



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

Step 2. Compile historical IF, FF and O&M cost data (if included explicitly), and other input data for scenarios.



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)

Step 2. Compile historical IF, FF and O&M cost data (if included explicitly), and other input data for scenarios.



Examples of IF and FF in fisheries

Year 2013

List of Investment types	IF (2013 US\$)	FF (2013 US\$)
Government		X
Policies & measures		
Regulations		X
Government / private	X	
Infrastructure		
Fleets	X	
Technology	X	
Gear, Equipment	X	
Management	X	
Training		X
Insurance		X

Step 2. Compile historical IF, FF and O&M cost data (if included explicitly), and other input data for scenarios.



Examples of O&M in fisheries

Cost items	%	%
Running costs	31 – 33	29 – 30
Vessel costs	19 - 28	18 – 24
Labour	25 – 44	22 – 42
Other costs	6 – 14	5 – 13
Total O&M costs	100	88 – 96
Capital costs		4 -12

Step 2. Compile historical IF, FF and O&M cost data (if included explicitly), and other input data for scenarios.



Data collection

Examples of IF and FF data disaggregation in each subsector

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				

Step 1. Establish key parameters of assessment.



Step 2. Compile historical IF, FF and O&M cost data (and subsidy cost data if included explicitly) and other input data for scenarios.



Step 3. Define baseline scenario.



Step 4. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the baseline scenario.



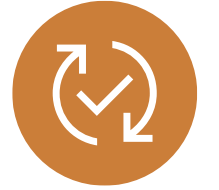
Step 5. Define target scenario.



Step 6. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the target scenario.



Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



Step 8. Identify policy implications.



Step 9. Synthesize results and complete the report.



Step 3.



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 & 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 & government)
 - Type (national funds, foreign direct investment, official development assistance)

Step 1. Establish key parameters of assessment.



Step 2. Compile historical IF, FF and O&M cost data (and subsidy cost data if included explicitly) and other input data for scenarios.



Step 3. Define baseline scenario.



Step 4. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the baseline scenario.



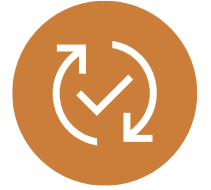
Step 5. Define target scenario.



Step 6. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the target scenario.



Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



Step 8. Identify policy implications.



Step 9. Synthesize results and complete the report.



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

Step 4. Identify the annual IF, FF and O&M costs, and subsidy costs (if included explicitly), for baseline scenario.

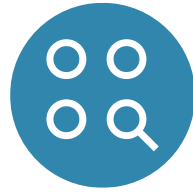


Define and project annual IF and FF

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

*Fleet (2025 \$/Boat), equipment (2025 \$/Net) ...

Step 1. Establish key parameters of assessment.



Step 2. Compile historical IF, FF and O&M cost data (and subsidy cost data if included explicitly) and other input data for scenarios.



Step 3. Define baseline scenario.



Step 4. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the baseline scenario.



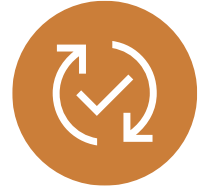
Step 5. Define target scenario.



Step 6. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the target scenario.



Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



Step 8. Identify policy implications.



Step 9. Synthesize results and complete the report.



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 increase resilience and the expected investments in the fisheries sector to implement those measures

Step 5. Define the target scenario.



Define the target scenario

Category of adaptation measure	Measure
Policies & measures	Relocation allowances, Fiscal incentives, Contingency plans, Financial policies, Diversify income & activities, Emergency funds, Microcredit
Regulatory framework	Limits in the access to resources, Standard setting, Codes of conduct, Using sustainable fishing methods: no dynamite fishing, promoting intelligent nets...
Investment	Infrastructure, Fleet, Technology, Gear, Equipment, Training
Management	Diversification, Stay in/exit the fisheries
Research	Forecasting, Resource monitoring

Step 5. Define the target scenario.



Example adaptation options

Prevention measures	<ul style="list-style-type: none">• Prevention of urban development in flood-prone areas• Development of water efficient methodologies in water-dependent sectors• Afforestation to improve the retention of water or prevent landslides
Resilience Measures	<ul style="list-style-type: none">• Changing agriculture to crops that are less water-demanding or salt-resistant.• Tactical level: operate dams in such a way that sufficient water is retained in the wet season to balance for the water needs in the dry season
Preparation measures	<ul style="list-style-type: none">• Establishment of early-warning systems, emergency planning• Awareness raising• Increasing storage• Demand management, technological development
Response measures	<ul style="list-style-type: none">• Establishment of safe drinking water & sanitation facilities
Recovery measures	<ul style="list-style-type: none">• Activities for the reconstruction of infrastructure



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

Step 1. Establish key parameters of assessment.



Step 2. Compile historical IF, FF and O&M cost data (and subsidy cost data if included explicitly) and other input data for scenarios.



Step 3. Define baseline scenario.



Step 4. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the baseline scenario.



Step 5. Define target scenario.



Step 6. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the target scenario.



Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



Step 8. Identify policy implications.



Step 9. Synthesize results and complete the report.



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

Step 6. Identify the annual IF, FF and O&M costs, (and subsidy costs if included), for the target scenario.



Project IF and FF of target scenario

Facility/Technology	Cumulative infrastructure (2025-2050)	Unit cost
Using intelligent nets	(# nets)	(2025 \$/net)
Monitoring of fish resources	(# activities)	(2025 \$/activity)
Training on sustainable fishing	(# trainings)	(2025 \$/training)
Total		

Step 6. Identify the annual IF, FF and O&M costs, (and subsidy costs if included), for the target scenario.



Define and project annual IF and FF

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

Step 1. Establish key parameters of assessment.



Step 2. Compile historical IF, FF and O&M cost data (and subsidy cost data if included explicitly) and other input data for scenarios.



Step 3. Define baseline scenario.



Step 4. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the baseline scenario.



Step 5. Define target scenario.



Step 6. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the target scenario.



Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



Step 8. Identify policy implications.



Step 9. Synthesize results and complete the report.



Step 7.



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

Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



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 adaptation 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.

Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



Calculate incremental IF and FF

Funding entity category	Source of funds	Investment (billion 2025 \$)		
		Cumulative (2025-2050)		Incremental
		Baseline scenario	Target scenario	
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)

Step 1. Establish key parameters of assessment.



Step 2. Compile historical IF, FF and O&M cost data (and subsidy cost data if included explicitly) and other input data for scenarios.



Step 3. Define baseline scenario.



Step 4. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the baseline scenario.



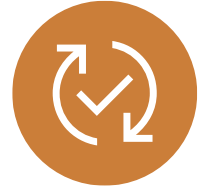
Step 5. Define target scenario.



Step 6. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the target scenario.



Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



Step 8. Identify policy implications.



Step 9. Synthesize results and complete the report.



Step 8.



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

Step 8. Identify policy implications.



Identify policy implications

- Identify entities responsible for the most significant incremental changes in investment and financial flows
- Determine the predominant sources of their funds
- Determine policy instruments & incentives to encourage changes in investment and financial flows
- Consider social, economic and environmental benefits of policy options





Identify policy implications

Public policies to minimize impacts of climate change:

- Building institutional and legal frameworks
- Analyzing long-range perspectives of tensions
- Identify and quantify linkages between demands by population growth and income level
- Analyzing specific impacts on livelihoods related to the fisheries sector
- Eliminating harmful subsidies and perverse incentives, such as subsidizing fishing fleets under stress

Step 1. Establish key parameters of assessment.



Step 2. Compile historical IF, FF and O&M cost data (and subsidy cost data if included explicitly) and other input data for scenarios.



Step 3. Define baseline scenario.



Step 4. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the baseline scenario.



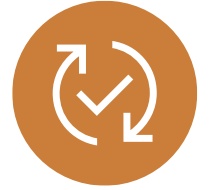
Step 5. Define target scenario.



Step 6. Identify annual IF, FF and O&M costs (and subsidy costs if included explicitly) for the target scenario.



Step 7. Calculate the changes in IF, FF and O&M costs (and in subsidy costs if included explicitly) needed to implement target scenario.



Step 8. Identify policy implications.



Step 9. Synthesize results and complete the report.



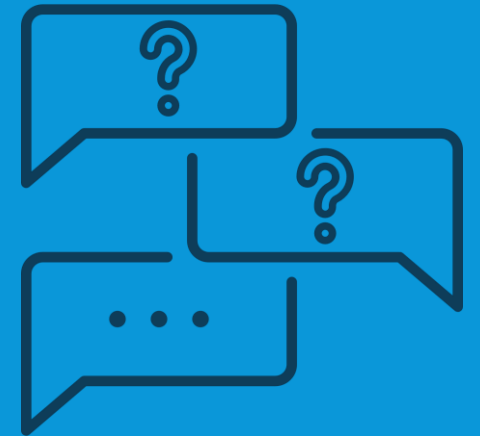
Step 9.



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](https://twitter.com/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](https://twitter.com/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

The views expressed in this publication are those of the author(s) and do not necessarily represent those of the United Nations, including UNDP, or their Member States.

Copyright ©UNDP 2026. All rights reserved. One United Nations Plaza, New York, NY 10017, USA.

CLIMATE
PROMISE



Government of Iceland
Ministry for Foreign Affairs



+ UNDP's
Core Donors