ASSESSING INVESTMENT & FINANCIAL FLOWS FOR CLIMATE CHANGE
INTRODUCTION TO THE TRAINING
Day 1
- Introduction and context of the project
- Why assessing Investment and Financial Flows (I&FF)?
- UNDP methodology to assess I&FF

Day 2
- Group work by sectors

Day 3
- Group work by sector
- Reporting guidelines
- Elaboration of national workplan
Objectives

- Build capacity for national team to use the I&FF assessment methodology
- Identify workplan

Expected national benefits

- Enabling national experts to carry out I&FF assessments
- Benefits for national experts and their institutions in their daily work (beyond the I&FF assessments)
Modalities of the training

- Presentations and plenary discussions
- Groupwork for each sectoral team
Preparations done

- Sector selection
- National expert team identified
- National inter-ministerial dialogue on climate change held yesterday
INTRODUCTION: CLIMATE CHANGE AND GLOBAL CONSULTATIONS
Why consider Climate Change in development planning

- Climate change impacts different sectors, cross-cutting
- If not addressed in long-term action, climate change costs will be high

Global negotiations call for nationally determined commitments

- Countries are identifying national climate change targets for mitigation and adaptation
Key messages from the negotiations

- The **hybrid approach** of the Paris Agreement – on the one hand bottom up (in the sense that all countries, through their National Assessment Contributions - INDCs, define how they will address the Climate change) and top-down

- the Paris Agreement ensures that the **individual development priorities** of the country are integrated into the targets of the global climate.
Importance of planning tools

- To identify national priorities
- To facilitate cooperation among different ministries
- To build strategies to deal with climate change
- To create a coherent base of information of climate change impacts on and opportunities in key sectors

These points are addressed through the Investment & Financial Flows (I&FF) assessments
THE CONTEXT OF INVESTMENT AND FINANCIAL FLOWS ASSESSMENTS
Why an I&FF assessment

The I&FF assessments

- Use information on past & current Investment and Financial Flows from both public & private sector to establish future scenarios on financial needs to implement mitigation action.

- The assessments not only look at full costs of mitigation action/strategies, but help countries determine disaggregated information on necessary investment sources & entities, as well as investment timing.
Assessments of investment and financial flows not only put a “price” on climate change activities,

but provide comprehensive approaches how to analyze, restructure and make national investments more efficient to support climate change adaptation and mitigation,

and provide a tool to implement national plans and measures.
What challenge does the approach address

Supports countries to cost the investment & financial flows needed to mitigate/adapt to climate change as described in the INDC:

- **Implementation bottleneck**: questions regarding costs of these measures, potential funding sources, implementing entities & timing of investments.

- **I&FF assessments** address these questions, not only to quantify the costs of measures within their INDCs, but also to analyze full national investment landscape to determine funding sources, implementation entities, investment timings.

- The full financial landscape of public & private sector investment is assessed to structure finance efficiently & to budget additional mitigation efforts coherently.
Assessments of investment and financial flows are crucial tools to:

- **Break down** national climate change targets into Action Points
- **Determine** how much is already being spent on activities related to climate change from public & private sector
- **Identify** the investment and financial flows to implement these measures, as well as the possible sources of finance, the implementing entities and the timing of investments.
- **Structure** national budgets and investments more efficiently.
What challenge does the approach address

Using the methodology, countries:

- **Develop policies and regulatory framework**, and the financial architecture to induce the necessary change.
- **Involve key stakeholders** not only in the “Environment Community”, but also the Ministries of Finance and Planning, as well as counterparts of the private sector.
- Become ‘**Climate Finance Ready**’ and mobilize additional resources
- Move from planning to **implementation**.
What questions does the Investment and Financial Flows (I&FF) assessment help answer?

- What are the adaptation/mitigation options in certain sectors in the next 25 years?
- Who is investing in the sector/major players & sources?
- What shifts/increase in I&FF will be needed in the sector?
- What will be the overall needs for additional I&FF?
Key features of the methodology:

- The I&FF assessments use current & historic information to **project** future needs.
- **Articulate needs** to address climate change in key sectors in a systematic way.
- **Determine the magnitude** of national efforts required to address climate change.
- **Encourage long-term planning** that incorporates climate change investment decisions.
Key features of the methodology

Elements of the methodology:

- Engage key ministries & identify key sectors
- Organize National Inter-Ministerial Dialogue
- Organize training on I&FF methodology
- Conduct I&FF assessments:
  - Project baseline scenario & mitigation/adaptation scenario
  - Cost scenarios: attributing Investment & Financial Flows to each activity: Information broken down to investment entities, years, activities.
  - Subtract values of baseline scenario from mitigation/adaptation scenario to identify necessary investment changes.
  - Develop policy recommendations on how to incentivize the necessary changes.
- Conduct National Inter-Ministerial Dialogue.
The assessments are useful for:

- **Understanding** the magnitude and intensity of efforts necessary to address climate change in key sectors at the national level.
- **Facilitate** the integration of climate issues into national economic and environment planning.
- **Support** the diffusion of relevant information among policy makers for adequate planning.
- **Contribute** to the development of positions for the international negotiations.
About the I&FF methodology:

- The I&FF assessments were developed by UNDP in 2008 and until today have been applied by almost 20 countries.
- More information about the I&FF methodology and finalized assessments: 
Key features of the methodology

Key results:

- **UNDP I&FF methodology** prepared & peer reviewed in two global meetings
- National Inter-Ministerial Dialogue **Resource Kit** available in 6 languages (EN, FR, SP, RU, AR, PO)
- 19 Initial **National Dialogues**, >1660 participants
- >500 experts from 15 countries trained in UNDP methodology
- **I&FF assessments** completed in 15 countries, bringing to total of 34 assessments under the programme
- 15 Concluding **National Dialogues**, >1070 participants
Key features of the methodology

Key resources:

- Chapters of the methodology and capacity building material available in four languages:
  - **Chapter 1 & 2**: General methodology
  - **Chapter 3-14**: Sectoral guidance for: Energy, Transport, Forestry, Agriculture, Water, Health, Biodiversity, Fisheries, Tourism, Coastal Zones.
Key features of the methodology

Support products:
- Workplan Guidance, Methodology, Reporting Guidelines
- Excel Worksheets for I&FF calculations
- Template for Test Run of Methodology
- National Dialogues packages

Results products:
- Completed I&FF assessments
- Executive summaries for policy makers for each country
- Results flyers for each country
- Case studies: Costa Rica, Niger, Paraguay, Turkmenistan
- Synthesis document on results & lessons learned
Q&A
CLARIFICATIONS
PROCESS STAGES & SUPPORT
Goals

- Development of national policy options to address climate change in key sectors

Outcomes

- National awareness and capacities raised to address climate change
- Investment & financial flows assessed to address climate change in national key sectors: What are the financial requirements and how can they be realized.
Sequencing of national activities

**Preparation stage**
- Pre-workshop preparation (2 months)
- Key line ministries engaged
- Key sectors identified
- National issues papers prepared

**National Dialogue on climate change**
- National workshop on:
  - Climate Change
  - National Adaptation & Mitigation targets
  - Key sectors

**Implementation stage**
- Assessment of I&F flows to address CC mitigation/adaptation options for ~3 key economic sectors (6-8 months)
- UNDP methodology on assessing I&F flows
- National workshop to present results, policy options

**Reporting stage**
- Update on climate change negotiations
- I&F flows assessments presented
- Follow-up activities discussed
Define & agree

- National objectives/goals
- Key sectors/scope
- I&FF team
- Capacities/needs: methods, information...
- Institutional arrangements
- On workplan/budget
- Available scenarios

Preparation stage (1-2 months)
Conduct I&FF assessment in key sectors selected by the country using the UNDP I&FF methodology and the sector specific guidance & reporting guidelines

Guidance & procedures for

- Documentation & archiving
- Spreadsheet management
- Quality control & quality assurance procedures
Ongoing activity, not starting at the end of the assessment

Define outcome (decision making tool, policy tool), target group (internal/external) to draft report

Ensure good drafter for preparation of report(s)

Purpose: documentation of steps and processes for interpretation of outcomes & for later follow-up work
Support to the 3 stages of the project

- Work plan guidance
- Methodological guidance
- Reporting guidance

UNDP technical backstopping

- Training on assessment of I&FF
- 24 days of technical backstopping incl.
  - Review of workplan, draft and final assessments
  - Guidance on scenarios, data, approach
Guidance available + support provided

Knowledge platform


- See full methodology
- See excel spreadsheet for data analysis
- See completed I&FF assessments, summaries for policy makers and 4-page results flyers
Country checklist

- Sectors selected
- Workplan developed
  - Roles and responsibilities
  - Timeline
- Team established
- Institutional agreements reached
  - To share information
  - To collaborate
Team composition

Project Focal Point

Sectoral team leader

Sector 1 Team, e.g. energy
- Mitigation expert(s)
- Energy expert(s)
- Finance expert(s)
- Economic/statistics expert(s)
- NGO/academic expert(s)
- Private sector expert(s)

Sector 2 Team, e.g. agriculture
- Adaptation expert(s)
- Agriculture expert(s)
- Finance expert(s)
- Economic/statistics expert(s)
- NGO/academic expert(s)
- Private sector expert(s)

Sector 3 Team, e.g. water
- Adaptation expert(s)
- Water expert(s)
- Finance expert(s)
- Economic/statistics expert(s)
- NGO/academic expert(s)
- Private sector expert(s)
Q&A

CLARIFICATIONS
THE I&FF ASSESSMENT
Key questions the approach addresses:

- What are adaptation/mitigation options for key sectors in next 20 years?
- Which are major sources of public & private funds & who invests?
- What changes in I&FF are needed in the sector?
- What additional I&FF is needed to address climate change?
Investment Flow

- An investment flow (IF) is the **capital cost** of a new physical asset with a life of more than 1 year.
- Limited to **new physical assets**, because of climate change implications for the duration of the operating lives of the facilities & equipment purchased.
Financial Flow

- A financial flow (FF) is an **ongoing expenditure on programmatic measures**; financial flows encompass expenditures other than those for expansion or installation of few physical assets.
Operation & Maintenance (O&M) costs of new physical assets

- The physical assets purchased with investment flows will have operation & maintenance (O&M) costs associated with them.

- Can vary considerably among investment flow types & have a significant effect on the total cost of an investment.
Sources of investment and financial flows:

- National Capital and Subsidies
- External debt
- Foreign assistance
- National and foreign loans
- Etc.

I&FF Entities

- Households
- Corporations
- Government
Scenario: coherent and plausible characterization of the future conditions of a sector for a specific period (2015-2030)

Business as usual: describes what happens without new policies to address climate change

Target scenario: includes new measures to reduce GHG emissions or to respond to potential impacts of climate change.

Note: The assumptions regarding the future sociodemographic and climatic conditions are the same for both scenarios, only the policy activities are different.
What is adaptation?

Process to adjust sustainably and for the long-term to changing circumstances.

- Closely related to development
- It requires adjustments in all aspects of society, the environment and the economy
- It is linked to economic development, poverty reduction and disaster risk management
- Requires planning capacity for short and long term
What is mitigation?

An anthropogenic intervention to reduce GHG sources or to increase the sinks of GHGs.

- The Paris Agreement, together with the Agenda 2030 and the Sendai Framework for Disaster Risk Reduction, provide an unprecedented opportunity to create an integrated development approach for fostering inclusive and resilient communities with a decreasing carbon footprint.
Sources of information include:

- Existing studies/plans on climate change or development
- National strategies and plans, the INDC / NDC
- National Communications
- National Adaptation Programs of Action (NAPA)
- The system of national accounts (SNA)
- Vulnerability studies, Technological Needs Assessment (TNA)
- Sectoral data and projections from Ministries / Statistics Directorates / Research Centers / Business Associations
Q&A

CLARIFICATIONS
I&FF ASSESSMENT METHODOLOGY – STEP BY STEP
1. Assess Investment and Financial Flows for two scenarios:
   - Baseline scenario
   - Target scenario

2. Calculate additional I&FF and shifts in I&FF necessary to implement new measures to address climate change (difference between the two scenarios).
What the methodology defines...

- What are investment and financial flows and O&M
- How to calculate and present them
- Which are possible sources of information

What the national team needs to define...

- Which key measures to address climate change (mitigation/adaptation) will be considered in each sector from a national perspective (prioritization criteria)
- Key trends in each sector (definition of scenarios)
- To which sector to assign measures or policies in case of overlaps
Steps in the Sectoral Assessments of I&FF to Address Climate Change

1. Establish key parameters of the assessment
2. Compile historical I&FF data and other input data for scenarios

ADAPTATION

3. Define baseline scenario
4. Derive I&FF estimates for baseline scenario
5. Define adaptation scenario
6. Derive I&FF for adaptation scenario
7. Subtract 4. from 6. to estimate changes in I&FF needed to implement adaptation

MITIGATION

3. Define baseline scenario
4. Derive I&FF estimates for baseline scenario
5. Define mitigation scenario
6. Derive I&FF for mitigation scenario
7. Subtract 4. from 6. to estimate changes in I&FF needed to implement mitigation

8. Evaluate policy implications
9. Synthesize result in report
Step 1: Establish key parameters of assessment

Step 2: Compile historical I&FF data and other input data for scenarios

Step 3: Define baseline scenario

Step 4: Derive I&FF for baseline scenario

Step 5: Define mitigation / adaptation scenario

Step 6: Derive I&FF for mitigation / adaptation scenario

Step 7: Estimate changes in I&FF needed for mitigation / adaptation

Step 8: Evaluate policy implications

Step 9: Synthesize results and complete report
1. Establish key parameters of assessment

- Define detailed scope of the sector
- Identify preliminary mitigation (or adaptation) measures
- Specify assessment period & base year
- Select analytical approach
Preliminary mitigation/adaptation measures

- Selection of measures to be based on:
  - National and sectoral priorities
  - Existing groundwork on mitigation/adaptation
  - Feasibility of implementation
  - Data availability
  - Development benefits and other (environmental, economy and social) co-benefits of measures
How to scope a sector

- Determine specific subsectors that will be included
  - e.g. within agriculture: crop cultivation, livestock, fishing ...

- Determine which processes, activities, entities and geographic regions are included in the sector
Potential sectoral overlaps

Define scope of the sector

Potential sectoral overlaps:
- Health
- Water
- Tourism
- Forestry
- Energy
- Agriculture
- Mangroves
- Coastal Zones
- Water-borne diseases
- GLOFs
- Electricity
- Oil / Gas
- Hydropower
- Biofuel
- Transport
- Food Security
- Livestock
- Bioenergy
- Energy Plantations
- REDD
Addressing additional benefits

- The methodology does not provide for quantitative, but qualitative analysis, examples:
  - Change of crop type helps to adapt & emits less GHG
  - Enhanced water management to adapt to climate change can also have positive health effects
  - Job creation through a new policy
1. Establish key parameters of assessment

Specify assessment period & base year

Assessment period & base year

- Base year 2015 recommended (or latest available)
- Assessment period of 2015-2030 recommended

Cost accounting issues

- Constant 2015 US$ are recommended
- Costs for assets should be reported in the year in which they are expected to be incurred
- Discounting of costs should be done
Preliminary mitigation/adaptation measures

- Measures can be obtained from
  - Existing sectoral or national plans
  - National Communications
  - Technology Needs Assessments (TNAs)
  - National Adaptation Programmes of Action (NAPAs)
Any of these analytical approaches can be used to develop scenarios, & associated streams of annual I&FF and O&M costs

- A suitable sectoral model
- A sectoral plan
- A projection of sectoral trends
- The current situation in the sector
- A combination of those approaches
At the end of step 1

- Sector scope defined in detail, avoiding overlaps with other sectors
- Base year & assessment period (~2030) specified
- Preliminary mitigation (or adaptation) measures identified
- Analytical approach selected (model or spreadsheet exercise)
Q&A
CLARIFICATIONS
Step 1: Establish key parameters of assessment

Step 2: Compile historical I&FF data and other input data for scenarios

Step 3: Define baseline scenario

Step 4: Derive I&FF for baseline scenario

Step 5: Define mitigation / adaptation scenario

Step 6: Derive I&FF for mitigation / adaptation scenario

Step 7: Estimate changes in I&FF needed for mitigation / adaptation

Step 8: Evaluate policy implications

Step 9: Synthesize results and complete report
2. Compile historical I&FF data and other input data for scenarios

- Compile annual I&FF data, disaggregated by investment entity, source, & investment flow versus financial flow
- Compile annual historical O&M data, disaggregated by investment entity & source
- Compile other input data for scenarios
3-10 years of historical I&FF data should be collected

Data should be

- Compiled for each investment type
- Annual
- Disaggregated by investment entity & source
- Divided into investment & financial flows

Reminder: What are the data sources? They determine data compilation!
## Template for 1 Year of Historical I&FF Data (simplified)

<table>
<thead>
<tr>
<th>Category of Investment Entity</th>
<th>Source of Funds</th>
<th>Investment Type 1 (IF, FF, Total I&amp;FF)</th>
<th>Investment Type 2 (IF, FF, Total I&amp;FF)</th>
<th>Investment Type 3 (IF, FF, Total I&amp;FF)</th>
<th>Total Investment I&amp;FF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households</td>
<td>Domestic</td>
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<td>Corporations</td>
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<td>Foreign</td>
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<td>Total Funds</td>
<td>Corporation</td>
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<td>Government</td>
<td>Domestic</td>
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<td></td>
<td>Total Funds</td>
<td>Government</td>
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</tr>
</tbody>
</table>
Compile annual historical O&M data, disaggregated by investment entity & source

- Annual O&M costs for the physical assets that are in operation during the historical period
- Collect for 3-10 years
- Information about the expected lifetimes of the assets in operation during the historical period
2. Compile historical I&FF data and other input data for scenarios

- Other historical & non-historical data relevant to the sector might be necessary
- Depends on analytical approach, sectoral scope, & whether mitigation or adaptation focus
  - For a model: e.g. basic socioeconomic & technological data
  - For scenario development: information about current, past, & expected future GHG emissions & expected impacts & vulnerabilities
At the end of step 2

- Necessary data identified & access located
- Arrangements for data-sharing made
- Annual I&FF data compiled (3-10 years),
- Annual historical O&M data compiled (3-10 years)
- Other input data for scenarios compiled
Step 1: Establish key parameters of assessment

Step 2: Compile historical I&FF data and other input data for scenarios

Step 3: Define baseline scenario

Step 4: Derive I&FF for baseline scenario

Step 5: Define mitigation / adaptation scenario

Step 6: Derive I&FF for mitigation / adaptation scenario

Step 7: Estimate changes in I&FF needed for mitigation / adaptation

Step 8: Evaluate policy implications

Step 9: Synthesize results and complete report
3. Define baseline scenario

Describe:
- Socioeconomic trends
- Technological change/advances
- Business-as-usual investments
- Define model/spreadsheet to be used for assessment
3. Define baseline scenario

- Project the behavior of the sector in a **business as usual scenario** (without new policies related to climate change) until 2030.
- Include currently projected climate change activities (based on current policies or trends), for which resources are available and effectively being implemented.
3. Define baseline scenario

- Characterizing the sector over the assessment period under business-as-usual conditions, in the absence of new policies on climate change
  - Expected socioeconomic trends
  - Technological change
  - Expected investments in the sector, including the nature, scale, & timing of those investments
3. Define baseline scenario

- Should be consistent with trends reflected in the historical data collected in the previous step
- Current or past climate change activities are considered in the baseline scenario
At the end of step 3

The baseline scenario is developed

✓ Agreed which policies & measures go into it
✓ Socioeconomic trends described
✓ Technological change/advances estimated
✓ Business-as-usual investments defined
✓ Exact model/spreadsheet to be used defined
Q&A
CLARIFICATIONS
Step 1: Establish key parameters of assessment
Step 2: Compile historical I&FF data and other input data for scenarios
Step 3: Define baseline scenario
Step 4: Derive I&FF for baseline scenario
Step 5: Define mitigation / adaptation scenario
Step 6: Derive I&FF for mitigation / adaptation scenario
Step 7: Estimate changes in I&FF needed for mitigation / adaptation
Step 8: Evaluate policy implications
Step 9: Synthesize results and complete report
4. Derive I&FF for baseline scenario

- Derive annual IF & FF estimates, disaggregated by investment entity & source
- Derive annual O&M estimates, disaggregated by investment entity & source
4. Derive I&FF for baseline scenario

Derive annual IF & FF estimates

Example step 4: Energy sector

- Labeling the activities, measures and policies that are considered to go into the baseline scenario (step 3) with their costs
  - Sticking to the current energy mix - label it with expected costs for power plants etc.
  - Government to expand the current grid – label it with expected costs for infrastructure etc.
- ...
4. Derive I&FF for baseline scenario

Derive annual IF & FF estimates

Compile annual estimates disaggregated by

- Investment entity
  - households, corporations, government
- Source
  - domestic or external
- Investment flow
  - facility/technology type 1, type 2...
- Financial flow type
  - practice/measure type 1, type 2...
Annual estimates of O&M costs for the baseline scenario are needed, including:

- O&M costs for assets purchased *during* the assessment period
- O&M costs for assets purchased *before* the assessment period & that are expected to still be in operation
At the end of step 4

- Annual I&FF estimated - each of the policies & measures of the baseline scenario is calculated
- Annual O&M costs estimated – for each of the investments the O&M costs are calculated
### 4. Derive I&FF for baseline scenario

**Example water sector – year 2015**

<table>
<thead>
<tr>
<th>Investment entity</th>
<th>Source of I&amp;FF</th>
<th>Baseline scenario</th>
<th>I&amp;FF and O&amp;M for 2015</th>
<th>Water sector</th>
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<tbody>
<tr>
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<td>I&amp;FF and O&amp;M</td>
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<td>Investment 1:</td>
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<td>Investment 2:</td>
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<td>Equity &amp; debt</td>
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<td>Own capital</td>
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<td>Domestic Borrowing</td>
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<td>Total Corporations</td>
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<td>Equity &amp; debt (budgetary)</td>
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Q&A
CLARIFICATIONS
Step 1: Establish key parameters of assessment

Step 2: Compile historical I&FF data and other input data for scenarios

Step 3: Define baseline scenario

Step 4: Derive I&FF for baseline scenario

Step 5: Define mitigation / adaptation scenario

Step 6: Derive I&FF for mitigation / adaptation scenario

Step 7: Estimate changes in I&FF needed for mitigation / adaptation

Step 8: Evaluate policy implications

Step 9: Synthesize results and complete report
Develop target scenario

- The target scenario will include mitigation/adaptation measures as have been identified
Describe the expected development in the sector 2015-2030 if new or additional measures for adaptation/mitigation are implemented.
5. Define mitigation/adaptation scenario

Criteria for the mitigation/adaptation scenario

- Contains predefined measures and policy options
- Is consistent with the baseline scenario regarding background information (assumed population growth etc.)
- Is based on available data
At the end of step 5
The baseline scenario is developed:
- Agreed which policies & measures go into it
- Socioeconomic trends described
- Technological change/advances estimated
- Business-as-usual investments defined
- Exact model/spreadsheet to be used defined
Q&A
CLARIFICATIONS
Step 1: Establish key parameters of assessment

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Step 7: Estimate changes in I&FF needed for mitigation / adaptation

Step 8: Evaluate policy implications

Step 9: Synthesize results and complete report
6. Derive I&FF for mitigation / adaptation scenario

- Derive annual IF & FF estimates, disaggregated by investment entity & source
- Derive annual O&M estimates, disaggregated by investment entity & source
Example step 6: Energy sector

- Labeling the activities, measures and policies that are considered to go into the mitigation/adaptation scenario (step 5) with their costs
  - Changing energy mix to more renewables - label it with expected costs for power plants etc.
  - Raising awareness of energy users – label it with expected costs for awareness campaign
  - Putting into place incentive system to avoid emissions – label it with expected costs for implementation etc.
Compile annual estimates, disaggregated by:

- Investment entity
  - households, corporations, government
- Source
  - domestic equity, foreign debt, domestic subsidies, foreign aid
- Investment flow type
  - facility/technology type 1, type 2...
- Financial flow type
  - practice/measure type 1, type 2...

⇒ Use data to the degree disaggregated as available
Derive annual I&FF & O&M estimates

- Annual estimates of I&FF for the mitigation/adaptation scenario are derived
- As in the baseline scenario, costs should be
  - In real terms (ideally in constant 2015 US$)
  - Discounted
  - Reported in the year in which they are expected to be incurred
### Example - Target scenario water sector – annual flows

<table>
<thead>
<tr>
<th>Year</th>
<th>Construction of larger dam (IF)</th>
<th>Education programme on flood risk (new programme) (FF)</th>
<th>O&amp;M of the dam</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
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<td></td>
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<tr>
<td>2017</td>
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<td></td>
<td></td>
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<tr>
<td>2018</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>1500</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>1500</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td>1500</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2023</td>
<td>100</td>
<td>100</td>
<td></td>
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<tr>
<td>2024</td>
<td>100</td>
<td>100</td>
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<tr>
<td>2025</td>
<td>100</td>
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<tr>
<td>2026</td>
<td>100</td>
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<td>2027</td>
<td>100</td>
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<tr>
<td>2028</td>
<td>100</td>
<td>100</td>
<td></td>
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<tr>
<td>2029</td>
<td>100</td>
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<td></td>
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<tr>
<td>…</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2030</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Total (acumulated 2015-2030)</strong></td>
<td><strong>4500</strong></td>
<td><strong>2000</strong></td>
<td><strong>1700</strong></td>
</tr>
</tbody>
</table>
### Example – Target scenario water sector – year 2010

<table>
<thead>
<tr>
<th>Investment entity</th>
<th>Source of I&amp;FF</th>
<th>Target scenario water sector</th>
<th>I&amp;FF and O&amp;M for the year 2010</th>
<th>Measure: Flood management</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Investment 1 (expansion of</td>
<td>Programe 1 (new): Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>existing investment):</td>
<td>programme on flood risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Construction of larger dam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prog</td>
<td>O&amp;M</td>
<td>IF</td>
<td>FF</td>
</tr>
<tr>
<td>Households</td>
<td>Domestic</td>
<td>Equity &amp; debt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td>Own capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td>Domestic borrowing</td>
<td></td>
<td></td>
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<tr>
<td>Foreign</td>
<td>ODI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign</td>
<td>Foreign borrowing</td>
<td>1000</td>
<td></td>
<td></td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>External assistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporations</td>
<td>Domestic</td>
<td>Own capital (budgetary)</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Domestic borrowing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foreign</td>
<td>External borrowing</td>
<td>500</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>External assistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Corporations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>Domestic</td>
<td>Own capital (budgetary)</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foreign</td>
<td>External borrowing</td>
<td>500</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>External assistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Government</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>1500</td>
<td>100</td>
<td>1500</td>
</tr>
</tbody>
</table>
At the end of step 6

- Annual IF & FF estimated — each of the policies & measures of the baseline scenario is calculated

- Annual O&M costs estimated — for each of the investments the O&M costs are calculated
Q&A
CLARIFICATIONS
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Step 9: Synthesize results and complete report
7. Estimate changes in annual I&FF needed to implement mitigation / adaptation

- Calculate changes in cumulative I&FF
- Calculate changes in annual I&FF
Estimates the changes in I&FF needed to implement the mitigation (or adaptation) measures in the sector 2 objectives

- To determine how cumulative incremental I&FF would change
- To determine how annual investments would change
Example how cumulative incremental I&FF would change (all entities)

By the chosen time horizon (e.g. 2030)
- \( x \) (amount of money) needs to be invested
- \( x \) (amount of money) will be saved

Note: The graph is only a fictitious example to illustrate the methodology and does not imply any assumed trend within the sector. Alternative examples could imply more additional investments needed in the future or less saved investments. The trend will vary according to the sector analyzed, the national circumstances, etc.
Example how **annual** investments would change (by investment entity)

- **Result:**
  - To reach the Mitigation scenario:
    - x (amount of money) less of this source needed
    - x (amount of money) more of this source needed

Note: The graph is only a fictitious example to illustrate the methodology and does not imply any assumed trend within the sector. Alternative examples could imply more additional investments needed in the future or less saved investments. The trend will vary according to the sector analyzed, the national circumstances, etc.
At the end of step 7

- I&FF of the baseline scenario subtracted from adaptation/mitigation scenario:
- Changes in cumulative I&FF estimated — per investment type & for all investment types
- Changes in annual I&FF estimated — per investment type, per source & per sector
Q&A

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Step 8: Evaluate policy implications

Step 9: Synthesize results and complete report
8. Evaluate policy implications

- Determine policy instruments & measures to encourage changes in I&FF
- Identify the entities that are responsible for the significant incremental changes in I&FF
- Determine the predominant sources of their funds, important to distinguish between public & private sources of finance
8. Evaluate policy implications

- Re-evaluate initial prioritization of mitigation/adaptation measures from step #5, based upon the incremental I&FF estimates
- Determine investment entities responsible for most significant changes in I&FF & predominant sources of funds
- Evaluate policy measures to implement proposed measures & to change investment patterns, & additional sources of funds
At the end of step 8

- Policy instruments & measures determined to encourage changes in I&FF
- Former instruments & measures re-evalued
- Entities responsible for incremental changes in I&FF identified
- Predominant sources of their funds determined
Q&A
CLARIFICATIONS
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Step 7: Estimate changes in I&FF needed for mitigation / adaptation

Step 8: Evaluate policy implications

Step 9: Synthesize results and complete report
9. Synthesize results and complete report

- Integrate I&FF results, & evaluation of policy instruments & measures, across sectors, & across mitigation & adaptation
- Summarize objectives of study, methodology, inputs, & results in report
- Complete reporting templates
Sectoral results are compiled so that mitigation/adaptation investments for each source & investment entity, & for each year, can be compared across sectors & across mitigation/adaptation

“Reporting Guidelines for the Assessment of Investment & Financial Flows to Address Climate Change” contains spreadsheets for this

Define purpose & target group to prepare report accordingly
### Incremental Cumulative I&FF for All Investments in All Sectors

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mitigation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy</td>
</tr>
<tr>
<td>Households</td>
<td>Domestic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equity &amp; debt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government support (subsidies)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Household Funds (all domestic)</td>
<td></td>
</tr>
<tr>
<td>Etc…</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Incremental Annual I&FF for All Investments in All Sectors

<table>
<thead>
<tr>
<th>Year</th>
<th>Mitigation</th>
<th>Adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Energy</td>
<td>Forestry</td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
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<tr>
<td>Etc..</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incremental Annual Total I&amp;FF (million 2015US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

9. Synthesize results and complete report
Documentation & Reporting during the assessment

Report will be used for

- 2nd national workshop
- Further follow up activities
- Note: Possible different audiences & different uses of report
9. Synthesize results and complete report

At the end of step 9

- I&FF results, policy instruments & measures integrated across sectors
- Reporting of the I&FF assessment completed regarding objectives, methodology, inputs & results
ACLARACIONES Y SESIÓN DE PREGUNTAS Y RESPUESTAS
PERSPECTIVES AND NEXT STEPS
Going forward

What next?

- Nurturing links with national policy-making processes
- Attracting interest of international donors
- Make periodic updates to assessments
ANALYSIS OF I&FF RESULTS
Key sectors identified for I&FF assessments

Figure 1: Number of countries selecting sector for an I&FF assessment for adaptation
- Tourism, 1
- Fisheries, 1
- Biodiversity, 1
- Forestry, 1
- Coastal zones, 2
- Health, 4
- Agriculture, 11
- Food security, 1

Figure 2: Number of countries selecting sector for an I&FF assessment for mitigation
- Energy, 10
- Transport, 2
- Agriculture, 2
- Forestry, 8
- Water, 11
## Overview: Results by sector

<table>
<thead>
<tr>
<th>SECTOR*</th>
<th>COUNTRY</th>
<th>MEASURES</th>
<th>ANNUAL INCREMENTAL COST (MILLION US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water (A)</td>
<td>Bangladesh, Costa Rica, Dominican Rep., Gambia, Honduras, Peru, Turkmenistan</td>
<td>Water supply &amp; sanitation, efficient irrigation, erosion &amp; flood control, implementing water law, rainwater harvesting…</td>
<td>-0.1 (a net saving!) (Gambia) – 230 (Bangladesh)</td>
</tr>
<tr>
<td>Health (A)</td>
<td>Paraguay</td>
<td>Fighting dengue, malaria, respiratory &amp; diarrheal diseases</td>
<td>7 (Paraguay)</td>
</tr>
<tr>
<td>Tourism (A)</td>
<td>Dominican Republic</td>
<td>Beach management, hurricane management by insurance</td>
<td>40 (Dominican Republic)</td>
</tr>
<tr>
<td>Biodiversity (A)</td>
<td>Costa Rica</td>
<td>Conservation of ecosystems</td>
<td>60 (Costa Rica)</td>
</tr>
<tr>
<td>Fisheries (A)</td>
<td>Peru</td>
<td>Awareness raising, infrastructure for fish production</td>
<td>13 (Peru)</td>
</tr>
</tbody>
</table>

* A = adaptation
Examples from Costa Rica

Total cumulative sum of investments (2010-2030) in biodiversity sector, by investment type

Annual incremental cost of investments (2010-2030) for biodiversity and water sectors
Examples of impacts on the ground

- **Dominican Republic:** Government maintained the inter-ministerial review committee established for the I&FF assessments; it is now supporting development of CC policy.

- **Turkmenistan:** Environmental standards for energy efficiency and improved water management are being integrated into the legislative framework as result of I&FF recommendations.

- **Bangladesh:** I&FF provided baseline information for climate public expenditure & investment review.

- **Niger:** I&FF results have been incorporated into National Action Plan for Climate Change and National Development Plan.

- **Togo:** National climate change negotiators and parliamentarians were briefed on the I&FF results and political implications.

- **Paraguay:** I&FF results feeding into national CC policy and national mitigation plan.
Q&A

CLARIFICATIONS