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MODULE 7: DESIGN THE M&E FRAMEWORK

Objectives

- Design a draft adaptation M&E Framework for the agriculture sector

Inputs

- Theory of Change, purpose and focus (Module 6)
- Adaptation M&E Guidance and tools
- M&E Framework templates and example

Designing an M&E framework and plan for adaptation in the agriculture sectors

Step 1.	**Understanding the policy context**
Step 2.	**Developing a shared understanding of the adaptation challenge, goals and the theory of change behind integrating adaptation in the agriculture sector**
Step 3.	**Defining the purpose and focus of the M&E framework**
Step 4.	**Developing an M&E Framework for adaptation in the agriculture sector**
Step 5.	**Identifying indicators to track adaptation in the agriculture sector**
Step 6.	**Identifying the sources and type of data and information required for each indicator**
Step 7.	**Operationalising M&E for decision-making on adaptation in the agriculture sector**

NATIONAL AND SECTORAL EXPERIENCES OF M&E SYTEM FOR ADAPTATION

Degree of advancement of M&E system in different countries

	Beginning →			Fully operational
	Monitoring			**Evaluation**
Development stage of the M&E system	Initial steps	Advanced stage, but not completely operational yet	Fully operational and regularly reporting	Explicit evaluations of national adaptation progress
Examples	Argentina, Australia, Albania, Brazil, Cameroon, Costa Rica, Grenada, Lithuania, Mozambique, Slovakia, Sri Lanka, Thailand, Togo	Burkina Faso, Cambodia, Colombia, Kenya, Moldova, Netherlands, Philippines, South Africa, Uganda	Austria, Belgium, Finland, France, Germany, Morocco (sub-national level), Spain, Switzerland, United Kingdom	Chile, Finland, Switzerland, United Kingdom

Overview of existing national-level adaptation monitoring systems

Source: Naswa et al., 2015 and GIZ, 2014

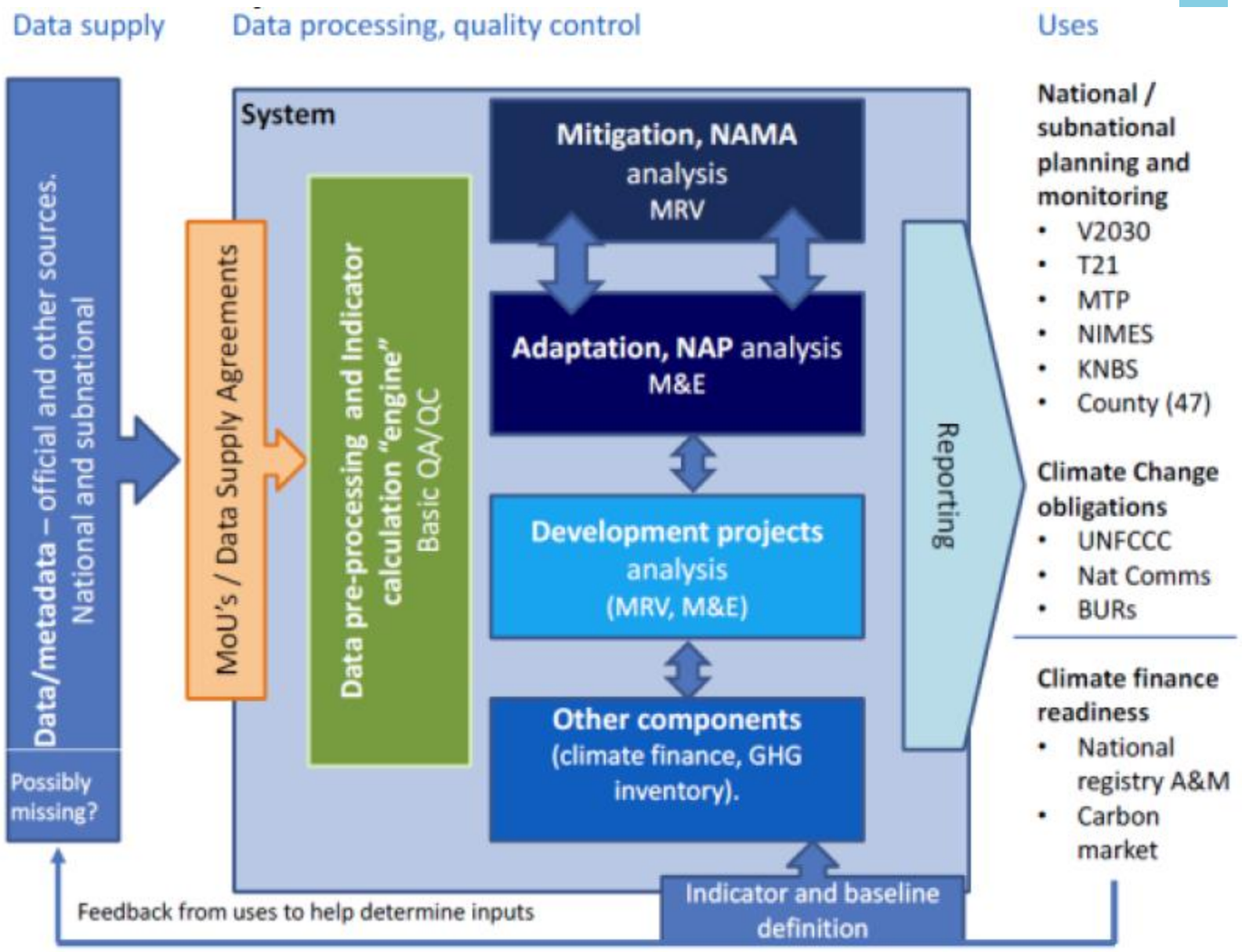
Country	Approach
Australia	Identifies risks to essential services (e.g. energy and water supply) and allocation of responsibilities to persons or organisations best placed to address the risks. Indicators of adaptation drivers, activities and outcomes. Sensitivity of agricultural production is one of the proposed 12 national indicators.
France	Process indicators and some outcome indicators for twenty priority sectors, which include agriculture; forestry; fisheries and aquaculture.
Germany	Climate change impacts and response indicators for fifteen action and cross-sectional fields to monitor adaptation, including agriculture; woodland and forestry; fisheries. Periodic evaluation of the German Adaptation Strategy.
Kenya	Indicator-based system using outcome and process-based monitoring, reporting and verification (MRV) of actions under the indicators measured at the national and county levels. Agriculture and livestock are both sectors for which prioritised adaptation actions to be monitored are proposed.
Morocco	Using indicators to monitor changes in vulnerability, adaptation progress and their impacts. Around thirty indicators in each of the two pilot regions, focused on priority sectors agriculture, water and biodiversity/forestry.

Country	Approach
Mozambique	Monitor climate change impacts and inform national budget allocations and international climate finance.
Nepal	Programme-level indicators (based on Pilot Program for Climate Resilience – PPPCR) core indicators). Indicator system piloted for eight climate change projects and indicators linked to National Adaptation Programmes of Action (NAPA) priorities; matched by individual project-level indicators. 149 sub-national 'environmentally friendly' indicators for different sectors (including climate) and scales (household to district).
Norway	Process- and impact-monitoring using repeated surveys of exposure and adaptive capacity.
Philippines	Indicators linked to results chains for seven strategic priority sectors, including food security. Climate Change Vulnerability Indices for measuring, monitoring and evaluating local vulnerability and adaptation.
South Africa	Established outcome-based system will be used to monitor climate change impacts at appropriate spatial densities and frequencies. Report progress on the implementation of adaptation actions.
United Kingdom	Mixture of approaches: regular, detailed climate change vulnerability assessments; indicators to monitor changes in climate risks, uptake of adaptation actions and climate impacts; decision-making analysis to evaluate whether degree of adaptation is sufficient to address current and future climate risks. Agriculture and forestry one of seven policy themes of the NAP, to which M&E is applied.

Source: Naswa et al., 2015 and GIZ, 2014

Kenya National Performance and Benefit Framework (NPBF)

- The Kenya NPBF is designed to cover both adaptation and mitigation and the synergies between them



Exercise: purpose, challenges, experiences on adaptation M&E in the country

1. *What would be the purpose of doing M&E of adaptation and agriculture?*
2. *What might be the key inputs (e.g. existing data sources)?*
3. *What are the opportunities and challenges for developing an M&E for adaptation for the agriculture sector?*
4. *What have we learnt from experiences to date on M&E of adaptation? What have we learn from M&E in the crop, forestry, fisheries sectors?*

EXPERIENCE IN DEVELOPING AN M&E FRAMEWORK FOR THE AGRICULTURE SECTOR NAP

The process of developing Uganda Performance M&E Framework for the agriculture sector NAP

The M&E Framework for the agriculture sector NAP is embedded in the existing MAAIF M&E framework.

Reviewed the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) regulatory, M&E and reporting frameworks and systems to guide the capture, management of data and reporting on adaptation and gender

Literature review to identify CCA and gender objectives and initiatives in agriculture sector, Agriculture sector NAP strategies

Develop a comprehensive PME Framework for adaptation in the agriculture sector and customize it to the existing National Performance Frameworks

Consultative and validation meetings to make the framework relevant to the users

MAAIF will take a lead in operationalizing the framework, and potential users were trained widely

LONG TERM OUTCOMES Agriculture Sector NAP			
▪ Increased crop yields ▪ increased growth rates of livestock population ▪ Increased fish stock ▪ Improved Agricultural risk management ▪ Increased prioritization of LULUCF ▪ A resilient agricultural sector ▪ Acquisition of information and communication systems that will aid decision making process ▪ Gender mainstreamed in CSA			
FRAMEWORK COMPONENTS			
Component 1: Crop production	**Component 2:** Livestock Development	**Component 3:** Fisheries and Aquaculture	**Component 4:** Climate Information, Early Warning and Disaster Preparedness Systems
Component 5: Land use and Land use change and forestry (LULUCF)	**Component 6:** Research for climate resilient agricultural development	**Component 7:** Knowledge Management and Partnerships for climate action	**Component 8:** Gendered Approach to climate change adaptation

Result framework for Component 1: Crop Production

Narrative Summary	Objectively Verifiable Indicators	Means of Verification
Objective 1.1 Promote climate resilient cropping systems and value chains		
Strategy 1.1.1: Promote and encourage highly adaptive and productive crop varieties and cultivate in drought-prone, flood prone and rain-fed crop farming systems		
1. Conduct a crop vulnerability and suitability assessment in all agro-ecological zones of Uganda	Number of climate resilient crops identified and profiled in all agro-ecological zones of Uganda	Crop vulnerability and suitability assessment reports from MAAIF, NARO and UBOS
2. Conduct studies on climate resilient crop varieties and cultivars (early maturing and drought tolerant) in the different agro-ecological zones	Number of studies carried out on climate resilient crop varieties and cultivars	Crop vulnerability and suitability assessment reports from NARO/ MAAIF
3. Conduct field trials and demonstrations and profile climate resilient crops	Number of field trials and demonstrations carried out of climate resilient crops and cropping practices	Field trials and demonstration reports, MAAIF reports
4. Build capacity of farmers and farmer groups in all agro-ecological zones and support them to upscale and improve access to high quality planting materials	Number of functional farmer groups in all agro-ecological zones	MAAIF, MTIC reports,
5. Build capacity of certified seed producers and support them to expand and improve the quality of seed	Number of certified seed producers % of farmers accessing certified seed and quality planting materials	MAAIF, UNADA, USTA, ISSD reports
6. Increase timely access to quality agricultural inputs and their efficient use	Number of farmers with timely access to quality agricultural inputs	MAAIF reports
	Percentage increase in farmers using quality input	MAAIF reports

Result framework for Component 4: Use of climate indo and risk management tools and warning systems

Narrative summary	Objectively Verifiable Indicators	Means of verification	Key Assumptions
Strategy 4.1.2: Support innovative insurance schemes to protect farmers against climate risk related crop and livestock losses			
1. Develop and implement varied innovative crop and livestock weather-indexed insurance packages	Weather-indexed insurance packages in place.	MAAIF report, MFI and Insurance Company Reports	Farmer have a variety of crops and livestock that are climate resilient
2.Conduct a study to explore other safety nets and alternative risk transfer mechanisms	Studies on alternative risk transfer mechanisms	As above	Responsiveness by key stakeholders
3. Enhance the capacity of micro-finance institutions to deliver innovative crop and livestock weather-indexed insurance packages	Training on financial management	As above	Farmers receive training on how to access low rate credit facilities and SACCOs
4. Raise awareness within the insurance industry of extreme weather and climate risks and communicate actions and opportunities	Awareness campaigns on extreme weather and climate risks	As above	Farmers are sensitized on the insurance of extreme weather and climate risks.
5. Undertake farmer education and address barriers to uptake of weather-indexed insurance products with a view to gain their trust	Farmers sensitized on weather-indexed insurance products	As above	Farmers apply knowledge to collect weather data, transmit, and validate it

Checklist for key performance dimensions

NAPs for Agriculture M&E framework Components	Performance dimension
Component 1: Crop Production	Record of vulnerability and crop suitability assessments
Component 2: Livestock Development	Adaptive and productive livestock breeds
Component 3: Fisheries and Aquaculture	Resilient and sustainable fishing practices
Component 4: Climate Information, Early Warning and Disaster Preparedness Systems	Weather monitoring stations and Timely information dissemination on weather patterns
Component 5: Land Use Land Use change and Forestry (LULUCF)	Increase water use efficiency in agricultural production; afforestation and SLM practices
Component 6: Research for climate resilient agricultural development	Adoption of best practises and local technologies
Component 7: Knowledge Management and Partnerships for climate action	Evidence of coordination and efforts to seek, obtain and utilize CCA partnerships
Component 8: Gendered Approach to climate change adaptation	Extent to which gender issues have been incorporated in the approaches to adapt to climate change effects

DESIGN THE M&E FRAMEWORK

Exercise: Identify key elements of the M&E framework for adaptation in the agriculture sector

Review of the TOC, which identifies the overall goal, reflect on the following:

Goal/Impacts: *Which goal/impacts will be monitored and evaluated by the M&E framework? How to verify the achievement of the adaptation goal, as stated in the TOC?*

Outcomes: *Which outcomes will be monitored and evaluated by the M&E framework? How do we measure the achievement of the short and medium-term adaptation outcomes?*

Outputs: *Which outputs will be monitored and evaluated by the M&E framework? How do we measure the achievement of the short and medium-term adaptation outputs need to be produced or provided through adaptation programmes or policies?*

Activities: *Is there the need to monitor specific activities that will help to achieve the desired outputs? How do you measure or monitor these activities?*

Discuss on the potential and available tools and means of verification to measure performance at different levels

Definitions

	Results-based terminology
Goal/Impacts are the long-term consequences of the program and may be positive and negative effects, e.g. improved standard of living, improved national nutrition levels etc.	Goal/impact
The outcomes are the likely or achieved short-term and medium-term effects or changes of an intervention's outputs, e.g. Increased skills, new employment opportunities, increased incomes in the agricultural sector etc	Outcome
The outputs are the specific products, capital goods, and services that result from a development intervention, e.g. number of people trained, number of workshops conducted, number of bridges build, tons of food produced etc. This can include the direct results of policies and programmes you are working on to deliver your goals and outcomes.	Output
Concrete actions and activities you will be undertaking, e.g. trainings on adaptation, planting of drought resistant varieties etc.	Activities

M&E framework for adaptation in the agriculture sector

Questions	Results-based terminology
What is your overall adaptation goal? What are you trying to achieve in the agriculture sector with regards to adaptation? Why are you working on this problem? This will have been articulated as part of the Theory of Change in Step 2. Impacts are the long-term consequences of the program and may be positive and negative effects, e.g. improved standard of living, improved national nutrition levels etc.	Goal/impact
Where do you want to be in 5 years in terms of adaptation in the agriculture sector? What are the most immediate things you are trying to change? What are the things that must be in place first before you can achieve your goals and have impact? The outcomes are the likely or achieved short-term and medium-term effects or changes of an intervention's outputs, e.g. Increased skills, new employment opportunities, increased incomes in the agricultural sector etc. Reflect back on your Theory of Change in Step 2, and the purpose and focus defined in Step 3. This might be guided by pre-defined policy objectives.	Outcome

Questions	Results-based terminology
What are the things that need to be produced or provided through adaptation programmes or policies for you to achieve short-term and medium-term results? What are the things different stakeholders must provide? Reflect on the specific products, capital goods, and services that result from a development intervention, e.g. number of people trained, number of workshops conducted, number of bridges build, tons of food produced etc. This can include the direct results of policies and programmes you are working on to deliver your goals and outcomes.	Output
What needs to be done to produce these outputs? Reflect on the concrete actions and activities you will be undertaking, e.g. trainings on adaptation, planting of drought resistant varieties etc.	Activities
What are the financial, human, and material resources needed for the development intervention?	Inputs
How will we know if we are on track to achieve what we planned?	Indicators
What is the level of change we want to see and by when?	Baseline and targets
What information do we need to measure progress? How will we obtain this information?	Means of verification

ADAPTATION M&E GUIDANCE AND TOOLS

Adaptation M&E Guidance and tools

- FAO and UNDP. 2019. Strengthening M&E for adaptation planning in the agriculture sectors.

  http://www.fao.org/in-action/naps/overview/programme-activities/monitoring-and-evaluation/en/

- Adaptation Committee (2016). Inventory of ongoing M&E work of adaptation prepared under the Nairobi work programme https://unfccc.int/files/adaptation/groups_committees/adaptation_committee/application/pdf/ac10_5b_m_and_e_.pdf

Integrating Agriculture in National Adaptation Plans (NAP-Ag) Programme

Safeguarding livelihoods and promoting resilience through National Adaptation Plans

November 2019

Strengthening monitoring and evaluation for adaptation planning in the agriculture sectors

M&E Tool / Framework Title	Organization name	Year	Sectoral focus	Countries	Typology	Method/Approach	Applicability	Case Study

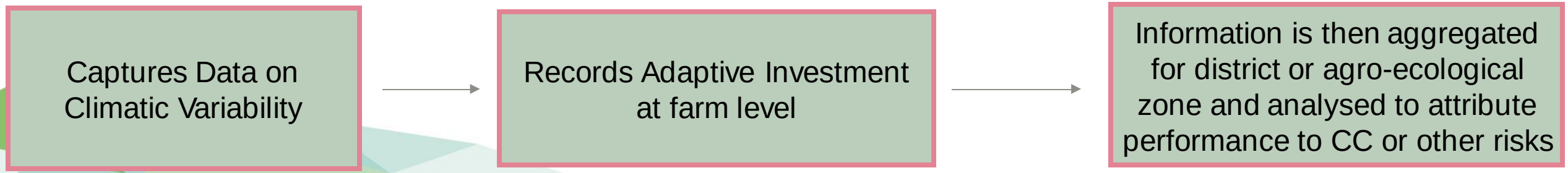
Adaptation M&E Guidance and tools

- GIZ and IISD (2015), *Developing national adaptation M&E systems: A guidebook* http://www.adaptationcommunity.net/?wpfb_dl=268
- OECD (2015b), *National Climate Change Adaptation: Emerging Practices in M&E* Sectoral http://www.oecd-ilibrary.org/environment/national-climate-change-adaptation_9789264229679-en
- GIZ and IISD (2013), *M&E Adaptation at Aggregated Levels: A Comparative Analysis of Ten Systems.* https://www.climate-eval.org/sites/default/files/blogs/GIZ_2013-M%2BE_of_Adaptation_Comparative_analysis.pdf

Tools to Measure Performance

There are a variety of tools to capture data on adaptation

- CARE Climate Vulnerability and Capacity Analysis
- Community-based Risk Screening Tool Adaptation and Livelihoods - CRISTAL
- Climate Change and Environmental Degradation Risk and Adaptation Assessment (CEDRA)
- Framework of milestones and indicators for community-based adaptation (CBA)
- Climate Context Monitoring Tool
- National Adaptive Capacity (NAC) Framework



Community-based risk screening tool Adaptation and Livelihood

M1: Synthesizing info on climate and livelihoods

Q1: What is the climate context affecting the project area?

- Current climate hazards
- Impacts of these hazards
- Coping strategies

Q2: What is livelihood context?

- Important livelihood resources
- How affected by climatic hazards
- How important to coping strategies

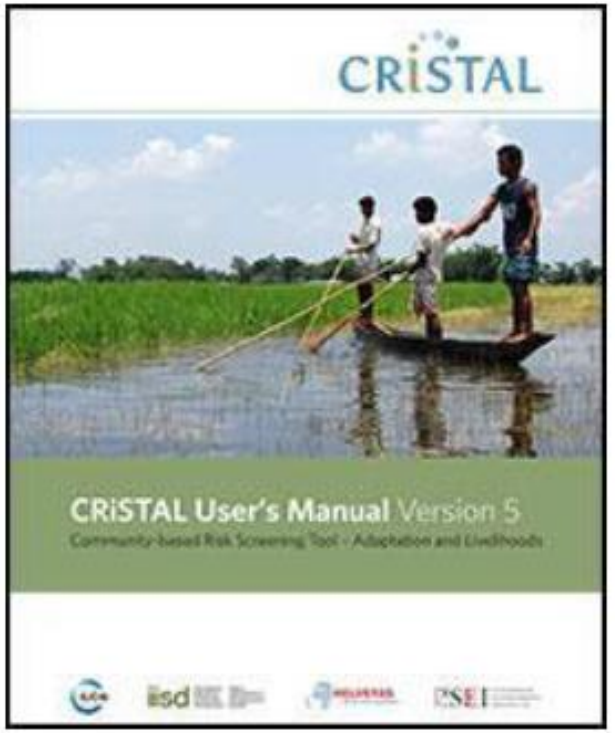
M2: Planning and managing projects for adaptation

Q3: What are impacts of project activities on livelihood resources that are…

- Vulnerable to climate risks?
- Important to coping?

Q4: How can project activities be adjusted to reduce vulnerability and enhance adaptive capacity?

- Identification of synergies and barriers



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THANK YOU

FAO CBIT AFOLU TEAM

CAPACITY BUILDING INITIATIVE FOR TRANSPARENCY

FAO CBIT – AFOLU PROJECT

Contact: MICCA@fao.org

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Impact Evaluation and the NAP-ag Process

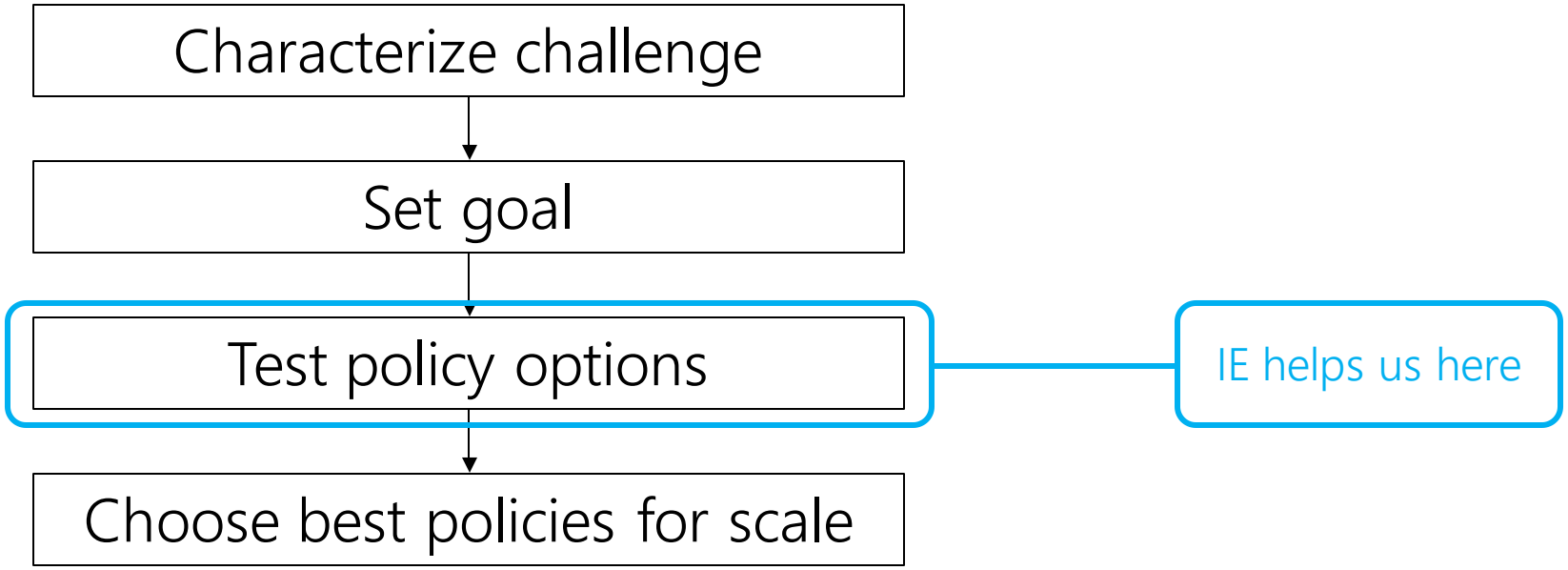
*"It is very likely that the **bulk of climate adaptation will be reactive**, adjusting to the climates that we experience as these climates unfold."**

Adaptation is a continuous process that entails:

- improving farmer techniques e.g. using optimal inputs (e.g. seed varieties).
- improving the institutional setting they operate in e.g. Access and ability to use resources (extension services, credit, water rights, transport networks)
- evaluate adaptive actions rigorously i.e. understand their impacts (benefits) before scaling up through a continuous and proactive process

*Massetti, Emanuel and Robert Mendelsohn (2015), The economics of adaptation to climate change. Working Paper.

Policymaker's Process



-Experimental Methods

Ideal to test a policy option with an experiment (randomized controlled trial)
Key design feature: random allocation to treatment

- Experimental Methods

Use quasi-experimental methods when experiment is not possible (i.e. non-random treatment allocation).

Policymaker's Process and IE