

# Adaptation Measure's Feasibility Analysis Tool (AMFAT)

Opportunities and Risks(O&R) for implementing adaptation measures



## Aim of the tool:

It is a tool that helps identify **how feasible** the location is to implement any climate change adaptation/mitigation measures based on its O & R.

## When to use it?

Before implementing any adaptation/mitigation measure or before climate financing, this tool can be used to analyze feasibility.

## Who are the users?

This tool provides information on how feasible is existing/projected O & R to implement adaptation measures. It helps SMEs, corporates, business champions and financial institutions to avoid maladaptation investments.

## How does it work?

This tool works based on Multiple Criteria Decision Analysis (MCDA) with the ranking and impacts of the risks and opportunities identified in the location.

## What is MCDA?

- > Multiple criteria decision analysis (MCDA) provides a formal, quantitative means of evaluating agricultural decisions by taking possible factors into account.
- > In this tool, we consider the O & R of the location in implementing adaptation measures.
- > This tool focuses on weighting the criteria and the step used to quantify the relevance of the selected criteria.

Other advantages can include: 1. making a decision more transparent to others, 2. providing a focus for discussion, 3. providing a means of problem structuring and working through the information, and 4. breaking the decision down so that people better understand the decision both from their own and from others' perspectives.

**Opportunities and Risks (O&R)** frame the consequences of climate change and potential adaptation responses in the context of **actors’ (Business champions, Corporates, SMEs, etc.)** values, objectives, and planning horizons as they make decisions under uncertainty. Adaptation planning and implementation are therefore contingent on actors’ perceptions of O&R. IPCC report say that the development and provision of O&R assessment tools (**like AMFAT**), decision-support tools, and early warning systems can help actors prioritize adaptation needs and identify options that reduce vulnerability (Klein et al., 2015).

## OPPORTUNITIES

Opportunities refer to **“Factors that make it easier to plan and implement adaptation measures, expand adaptation options, or provide ancillary co-benefits.”** These factors enhance the ability of an actor(s) to secure their existing objectives or for a natural system to retain productivity or functioning. For instance, increased public awareness & support for adaptation and the availability of additional resources from actors such as financing can facilitate adaptation and implementation planning. In addition to the socio-economic opportunities, natural system opportunities could also play a significant role in implementing adaptation measures such as climate suitability, groundwater availability, soil health, etc.

Opportunities	Definition	Examples
<b>Awareness</b>	The measure comprehends actions that promote awareness of climate change and adaptation. Not all stakeholders are proactively aware and informed about their vulnerability and the measures to climate change. Awareness-raising is, therefore, an essential component of the adaptation process to manage the impacts of climate change, enhance adaptive capacity, and reduce overall vulnerability.	i.e., communication, education, and awareness-raising
<b>Capacity</b>	Capacity building refers to the process by which individuals or organizations obtain, improve or retain the skills, knowledge, tools, equipment, or other resources to do their work competently. Capacity building addresses specific groups involved in climate change adaptation, as practitioners working in a specific region, focusing on a particular climate threat and/or sector, or dealing with a multi-sector and multi-threats perceptively. Capacity building is not only necessary at one point in time but is integrated throughout the whole adaptation cycle.	i.e., human and institutional capacity building, including preparedness, resource provision, and development of human and social capital
<b>Tools</b>	Tools represent methods and other knowledge resources that can facilitate decision-making for adaptation to climate change. They may be free-standing or components of adaptation platforms.	i.e., decision making, vulnerability and risk analysis, decision support, and early warning tools

	<p>Examples</p> <ul style="list-style-type: none"> <li>– Tools for assessing biophysical impacts, vulnerability, or risk</li> <li>– Tools for costing adaptation options such as cost-benefit analysis</li> <li>– Tools for data visualization, such as a GIS-based tool</li> <li>– Guidance on identifying and assessing adaptation options and on monitoring and evaluation.</li> </ul>	
<b>Policy</b>	<p>The development of the Adaptation Policy Framework (APF) is intended to help provide the evolving process of adaptation policy-making. Ultimately, the purpose of the APF is to support adaptation processes to protect and enhance human well-being in the face of climate change</p>	<p>i.e., integration and mainstreaming of policy, governance, and planning processes, including sustainable development, resource, and infrastructure planning, and design standards</p>
<b>Learning</b>	<p>A learning process that aims to enhance anticipatory and adaptive capacity, especially among vulnerable populations, takes time and resources from local stakeholders and external facilitators. It also requires a clear normative stance of resilience and for whom.</p>	<p>i.e., mutual experiential learning and knowledge management of climate vulnerability, adaptation options, disaster risk response, monitoring, and evaluation</p>
<b>Innovation</b>	<p>Innovation could adapt to climate change by changing their behavior, perhaps by moving to a new location or changing their occupation. As they take these steps, they will rely on technologies that increase resilience to climate risks and extremes, such as new irrigation systems, advanced weather forecasting tools, and more-resilient crop varieties.</p>	<p>i.e., development and dissemination of new information, technology development, and technology application</p>
<b>Physical</b>	<p>The capacity of human and natural systems to adapt to a changing climate is linked to characteristics of the physical environment, including the climate itself.</p>	<p>i.e., Suitable climate conditions, soil health, and availability of resources</p>

# RISK

Risks represent a factor or process that makes adaptation planning and implementation more complex or **“Factors that make it harder to plan and implement adaptation actions.”** This could include reductions in the range of adaptation options that can be implemented, increases in the costs of implementation, or reduced efficacy of selected options concerning achieving adaptation objectives. Risks restrict the variety and effectiveness of options for actors to secure their existing objectives or for a natural system to change to maintain productivity or functioning (e.g., funding, technology, or knowledge).

Risks	Definition	Examples
<b>Physical Risks</b>	The capacity of human and natural systems to adapt to a changing climate is linked to characteristics of the physical environment, including the climate itself.	i.e., climate-related risks (drought, flood, heatwave risks, etc.), land-use change, groundwater depletion, and human migration.
<b>Biological Risks</b>	Adaptive capacity could be influenced by biological (including behavioral, physiological, and genetic) tolerances of individuals, crop growth factors, and communities to climate change and extremes. Biological factors can constrain the adaptation options for humans, nonhuman species, and ecological systems.	i.e., pests and diseases, migration rates of tree species used in agroforestry systems, reduction in tropical forests, and soil degradation.
<b>Economic Risks</b>	Adaptive capacity could be influenced by the entitlements of actors to economic resources and larger macro-level driving forces such as economic development and trends in globalization.	i.e., economic disruptions such as the global financial crisis (long-term and short-term), poverty level, country’s economic crisis frequency, and development deficits.
<b>Financial Risks</b>	In addition to broader macroeconomic constraints on adaptation, the implementation of specific adaptation strategies and options can be constrained by access to financial capital.	i.e., non-availability and no accessibility of crop insurance, fluctuation in global cost of raw materials, volatile in certified emissions reductions (CERs) credit prices, not good relationship with Overseas development assistance (ODA), and unavailability of financial facilitation for relocation
<b>Human Resource Risks</b>	The effectiveness of societal efforts to adapt to climate change is dependent on humans, who are the primary agents	i.e., Unemployment and Non-availability of expanded higher

	of change. Human resources provide the foundation for intelligence gathering, the uptake and use of technology, and leadership regarding the prioritization of adaptation policies and measures and their implementation.	education opportunities, lack of skill development
<b>Social and Cultural Risks</b>	Adaptation can be constrained by social and cultural factors that are linked to societal values, world views, and cultural norms and behaviors. These social and cultural factors can influence perceptions of risk, what adaptation options are considered beneficial and by whom, and the distribution of vulnerability and adaptive capacity among different elements of society.	i.e., fond of amenity lifestyle, gender partiality, lack of societal support, beliefs, place attachment, and any form of discrimination.
<b>Governance and Institutional Risks</b>	Adaptation to climate change will necessitate the mobilization of resources, decision-making, and the implementation of specific policies by societal institutions.	i.e., national GDP, scientific/professional incapacity, lack of mandate information, level of corruption, non-organized legal/regulatory responsibilities and authorities, complexities of governance networks, low market access, lack of multi-focal policies on water, energy, input suppliers (e.g., Nitrogen), and higher investment in maladaptation measures.

## SCALE FOR DEFINING O & R

- O & R required for climate change adaptation is needed at all levels: at the local, regional, national, transnational, and also international levels. Therefore, the selection of O & R depends on the scale of area selection (i.e., considering policy O & R could be highly relevant to assess feasibility at the national scale but limited to the household level)
- In this context, scale refers to analytical dimensions used to study adaptation (including spatial, temporal, institutional, or jurisdictional), and each scale can be comprised of multiple levels (e.g., local to global in the context of spatial scales or household to the central government in the context of jurisdictions of governance)