United Nations Development Programme

National Communications Support Unit

ADAPTATION POLICY FRAMEWORK:

A GUIDE FOR POLICIES TO FACILITATE ADAPTATION TO CLIMATE CHANGE

1. The Convention Context

1.1 The United Nations Framework Convention on Climate Change and the International Context for Adaptation

The United Nations Framework Convention on Climate Change (UNFCCC) identifies two types of measures to reduce the impacts of climate change: mitigation and adaptation. To address adaptation, the Conference of the Parties participants formulated a three-stage strategy at their first meeting (COP 1, Berlin 1995), (Decision 11/CP.1)[1].

Under the first stage, many countries have completed preliminary studies of potential climate change impacts for their First National Communications. Many of these impact studies list possible adaptation measures, without their evaluation or prioritization. These measures are rarely examined in the context of sector-specific policies, economic development, or poverty reduction objectives. To be transformed from a concept to a reality, adaptation must make sense in the context of a nation's development.

This Adaptation Policy Framework (APF) has been developed to advance the Convention process. The APF provides guidance on the design and implementation of projects that will inform the policy process, and lead to measures for reducing vulnerability to climate change. These measures will be directed at both reducing the potential negative impacts and enhancing any beneficial consequences of a changing climate.

1.2 Need for a Framework

The COP has agreed that Parties can proceed to the second stage of adaptation strategy development. Participating nations have requested additional guidance in this effort. Specifically, the Least Developed Countries are designing National Adaptation Programmes of Action (NAPAs) to address their urgent adaptation needs (reference to come on COP decisions and NAPA methods). Compared to the NAPAs, the APF is characterized by longer timeframes, both for conducting studies and for assessing adaptations. This framework is intended to respond to the needs of developing countries and to be relevant for developed nations.

[1] *Stage I*: Planning, which includes studies of possible impacts of climate change, to identify particularly vulnerable countries or regions and policy options for adaptation and appropriate capacity building; *Stage II*: Measures, including further capacity building, which may be taken to prepare for adaptation as envisaged in Article 4.1 (e); *Stage II*: Measures to facilitate adequate adaptation, including insurance and other adaptation measures as envisaged by Articles 4.1 (b) and 4.4.

Improving society's capacity to adapt to current climate variability and extreme events can help reduce its vulnerability to future climate change. In addition to describing the key concepts for the development of adaptation strategies and implementation measures, the APF focuses on the incorporation of adaptation into national and sector-specific development planning.

1.3 Previous Studies

The APF builds upon a substantial platform of climate change impacts and adaptation research. Many developing countries have conducted projects sponsored by different organizations.[2] These projects are sometimes referred to as the first generation of impact, vulnerability, and adaptation studies.

Previous projects have highlighted difficulties associated with uncertainties in climate scenarios. They have revealed important methodological gaps, specifically the lack of integration across sectors and of socioeconomic analyses. Perhaps the most important concern is that climate change research has not progressed significantly beyond the identification of lists of adaptation measures.

Much of this work was guided by a standard method that was first developed in the IPCC Guidelines for Impact and Adaptation Assessment, and subsequently expanded in the UNEP and the U.S. Country Study Guidelines. Use of the standard method in earlier research has shown the need for enhanced adaptation assessments. Suggested assessments may include: the incorporation of risk assessment approaches at the local and national levels, and a "bottom-up" approach. In conjunction with these assessments, national climate teams will need decision support tools and training guides.

1.4 Development Context and Multilateral Environmental Agreements

Many measures and policies that help populations adapt to current climate variability and extreme weather episodes may help reduce its vulnerability to projected climate change. These approaches can also be used to achieve other environmental, economic and social objectives. For example, decisions about crops and agricultural practices can reduce vulnerability to current or anticipated droughts, as well as help conserve water and reduce soil erosion. When effective, such actions can also help sustain livelihoods, increase agricultural productivity, improve human health, and prevent both desertification and the loss of biodiversity. Clearly, climate change adaptation policies are best developed in the context of other economic and environmental policies. This Framework suggests how climate change adaptation can be integrated into economic development planning and environmental activities such as the Convention to Combat Desertification and the Biodiversity Convention.

Rather than being the domain of a separate ministry or department, adaptation to climate change will be most effective when incorporated into a country's national planning process. In many developing nations, climate variability and extreme climatic events have recently been shown to adversely affect a country's overall economic development (Reference to come). To be effective, climate adaptation is to be placed in this context.

1.5 Target Audiences

The Framework is primarily designed for climate change teams. Since specific adaptation measures are usually implemented at the local level, the Framework is also intended for communities including the private sector, the general public, and other stakeholders. The APF recognizes that adaptation

[2] Global Environment Facility (GEF), World Bank (WB), United Nations Development Program (UNDP), United Nations Environment Programme (UNEP), the Netherlands, the U.S. Country Studies Programmes, and other bilateral donors.

requires coordinated responses from different levels of society. National teams from a Regional Project in Central America, Mexico, and Cuba[3] are expanding the Framework.

In other regions of the world, project teams are implementing and/or updating the document. Both developed and developing countries are expected to conduct adaptation projects over the next few years. In this context, the APF is relevant to sponsors of such projects, including bilateral and multilateral development agencies, private foundations, and the private sector.

2. Adaptation and the Development Process

2.1 What is Adaptation Policy?

In the APF, "adaptation policy" refers to any broad governmental decision aimed at reducing the impacts of climate change, either by enhancing society's resilience or expanding its range of coping strategies. These and other adaptation concepts are described in the supplemental set of nine APF Technical Papers. The term, policy, generally refers to a broad category of decision-making, whereas measures are more specific actions. For example, a national government may have a drought mitigation policy aimed at reducing the associated adverse impacts. The policy is likely to include many different measures, such the provision of additional water supplies, the substitution of drought-tolerant crops, the storage of emergency grain supplies, the issuing of drought forecasts and warnings, and possibly the provision of crop insurance. The purpose of a policy is two-fold: to ensure that all accompanying measures are mutually related to focus on the same objectives, and to ensure that these measures are efficiently and effectively implemented.

Adaptation policy may be directed at important sectors of the national economy such as agriculture, forestry, water resources, and the transportation infrastructure. Other policy-relevant sectors include: coastal zone management, public health, and ecosystem management (the preservation of biodiversity). Adaptation measures may also be designed for specific regions of the country, or to lessen the impacts of extreme climate events such as floods, droughts, or tropical cyclones. Especially in the case where natural resources cross national borders, it may be advantageous for neighboring countries to coordinate their adaptation policies.

Adaptation in one sector often has consequences for another. For example, reduction of the impacts of drought can improve nutrition levels and overall public health. For this reason, researchers propose a process of "integrated assessment". Integrated assessment requires a consultation process (between stakeholders and experts) in which links between sectors can be identified and assessed. Integrated assessment models can be constructed to examine these links. When formulating policy for a particular issue such as climate change, it is important to take other policy domains into account. However, such integration must be done intelligently, as the complete merging of policies across all governmental departments may not be realistic.

2.2. Adaptation to What?

Climate represents the average weather for a specific region over a particular time period, and is determined by the combination of many variables: temperature, precipitation, humidity, and wind speed and direction. Although temperature and precipitation are considered to be the most prominent factors, many other climate variables, independently or in combination, can adversely impact society and are, therefore, important for adaptation policies. Climate change refers to a long-term change in weather variables. Because of the many drivers of climate change, projecting future climate involves

[3] Sponsored by the GEF.

considerable uncertainty. Given these factors, no single measure of climate can be used for all adaptation purposes.

When considering climate in designing a country's infrastructure, changes in the frequency and magnitude of extreme climatic events are most important. In the case of agriculture, both short-term climate variability and long-term changes in average temperature and precipitation are very relevant. The incremental rise in sea level and the occurrence of violent coastal storms should be taken into account for coastal zone management. For each category of climate risk, adaptation measures must be carefully evaluated.

2. 3 What are the Objectives of Adaptation Policy?

Adaptation policy objectives may be formulated at three levels: national, sector, and community. The relative importance among these levels will depend greatly on a country's political and social structure. When formulating an APF, national teams are encouraged to develop an adaptation strategy at these levels:

At the first and highest level, a nation's climate change adaptation policy should be coordinated with that of its national development. If a country's national policy includes export-led development in agriculture or national food security, the agriculture aspect of its climate adaptation strategy should correspond to this. Other national policy objectives include: economic development, social equity, and environmental protection. If poverty reduction is an important national objective, the differential impacts of climate change on socioeconomic groups should be factored into policy development.

At a second level, policy may be directed at specific sectors. At this level, adaptation policy should be designed in the context of existing policies to facilitate their integration. It may often be the case that adapting to climate change requires the expeditious implementation of existing policies that were designed for other reasons. For instance, increasing efficiency in water use may be of even greater importance when considering climate change. Similarly, the battle against vector-borne diseases may need to be accelerated in the face of climate-related changes in vector distribution.

Climate change adaptation policy must be developed on a third level, that of the community. It is on this level that the harmonization and integration of adaptation measures (both within and across sectors) becomes important. In certain instances, measures that promote adaptation in one sector may have adverse consequences in another; this must be carefully monitored. For example, promoting tourism by the construction of hotels and other services may benefit the national economy. However, if the new construction does not take climate factors such as sea level rise and coastal storms into account, the net economic impact may be negative. Policies that inadvertently serve to increase vulnerability are referred to as "maladaptive". An objective of this Framework is to avoid these circumstances.

2. 4 Adaptation Baselines

An "adaptation baseline" refers to the present level of adaptation in relation to climate risks. Specifically, it represents policies and measures that are actually in place for reducing vulnerability to climate variability. In some contexts, it may also describe a future level of adaptation, with or without changes. Crude measures of effective adaptation are mortality, morbidity, and economic losses associated with climate risk. Often, data on such losses are available for climate extremes (reference to come). Unfortunately, the estimates are rarely calculated in ways that permit comparison among events, and trends are difficult to discern (reference to come). It is usually possible, however, to develop a qualitative sense of the present adaptation level to ascertain the type and scale of necessary changes.

Over time, a country's level of adaptation may improve. To monitor the effectiveness of the improvement, it should be systematically compared with the baseline level. In this way, the impact of adaptation measures on climate change vulnerability can be evaluated. It is important to note that adaptive level is not the same as adaptive capacity; having the capacity to adapt does not ensure that it is used.

2.5 Present and Future Vulnerability

This Framework begins with current vulnerability to climate variability and extremes. This emphasis does not preclude efforts to enhance future adaptation; in fact, reducing current vulnerability can be an important step toward decreasing vulnerability to longer-term climate change. Since future climate may have unexpected characteristics (reference to come), a society's existing adaptation methods may not be sufficient to cope with future climate. For this reason, it is necessary to characterize likely future climate risks and their deviations from the present.

Changes in climate are not the only reason that vulnerability could increase in the future. Lack of economic development, growing social inequity, and environmental deterioration can all contribute to a more vulnerable society. Unless adaptations are placed in a socio-political context, their adoption will be severely limited. The APF focuses on potential changes in a nation's socioeconomic dynamics and environmental trends.

2.6 Risk Assessment

Risk assessment and management is one way to deal with the uncertainties of future climate. Risk is determined by the likelihood of an event or condition occurring, as well as the severity of its consequences. To assess future risk, climate change should be described in these terms. Typically, an inverse relationship exists between the probability of an event and its consequences, such that less frequent events tend to have more serious outcomes (reference to come). Since the adverse effects of an event can be reduced by adaptation, and the costs of adaptation measures can be compared with the benefits of averted impacts, risk-benefit analysis is a valuable support tool in the management of climate risks.

2.7 Adaptive Capacity

Generally, wealthier societies have larger adaptive capacity. This capacity relates to a higher percentage of individuals with disposable capital and to the availability of skilled human resources. These societies have more highly developed and reliable organizations and institutions. Such resources can be applied to many different problems and priorities. Taken together, these factors define a population's "general" adaptive capacity.

In contrast, the particular issues associated with climate change are classified as "specific" adaptive capacity. This capacity is evident in societies in which scientists are trained in meteorology, and personnel are trained to respond to extreme weather events (e.g., floods and storms). An important objective of this Framework is to help nations identify ways to strengthen their adaptive capacity.

3. Principles of the Adaptation Policy Framework

3.1 Five Principles

This Framework builds upon past work and experience, taking into account recent findings of the IPCC Third Assessment (reference to come). In developing the document, four principles or major concepts have emerged. As work progresses, this list may be modified or expanded:

- *Adaptation policy and measures are assessed in a developmental context.* This concept is the most important and difficult aspect of the APF. Its importance relates to the need to integrate adaptation into national development strategies.

- *Adaptation to short-term climate variability and extreme events are explicitly included as a step toward reducing vulnerability to longer-term climate change.* A society's current climate experience, including impacts and adaptation, provide essential starting points for the development of future adaptation policy. Compared to previous efforts, this Framework strongly emphasizes linking a society's present climate vulnerability experience to the development of its adaptation policy under future climate. Specific consideration is given to current development policies and proposed future investments, with particular concern for maladaptive practices.

- *Adaptation occurs at different levels in society, including the local level.* Most adaptive measures will be implemented by individuals and communities; the role of government is to ensure this occurs. The APF combines national policy-making with a proactive "bottom-up" risk management approach, in which climate vulnerability is assessed at the local and community levels.

- *The adaptation strategy and the process by which it is implemented are equally important.* In the APF, the stakeholders are expected to review, evaluate, and monitor adaptation. They are instrumental in driving each stage of the process.

- *Building adaptive capacity to current climate is one way of preparing society to cope better with future climate.*

4. A Five-step Framework

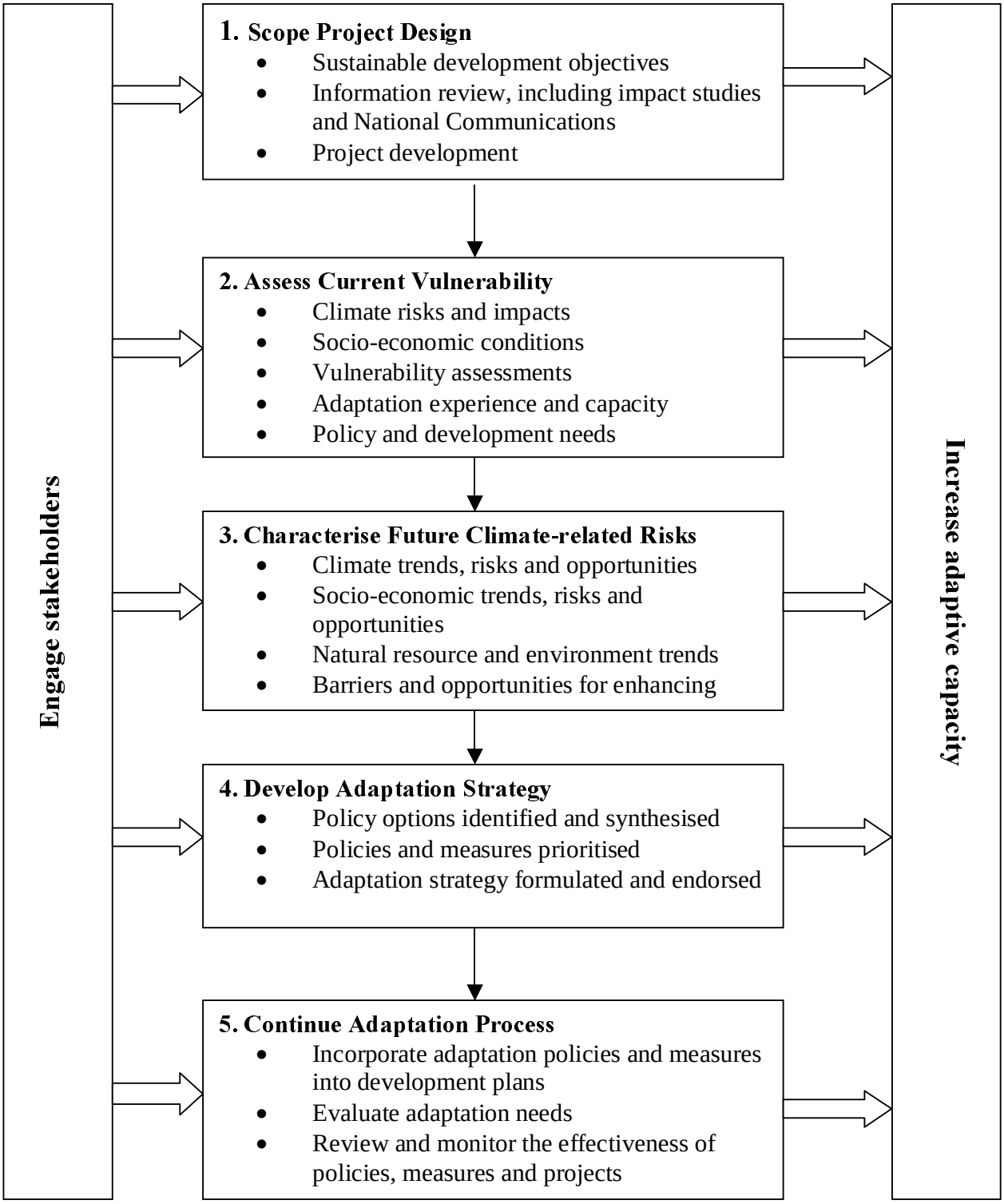
The APF principles are illustrated in a simple five-step diagram. (Figure 1). The diagram provides a sequential checklist of major components with suggestions as to how they may be related to each other. It does not provide instructions on the design and execution of an adaptation policy project. Instead, it is a flexible approach in which the steps may be used in different combinations according to the amount of available information and the point of entry to the project or policy intervention.

The APF is supported by a number of Technical Papers (TP) listed in an appendix. The relation of the TP to the Framework diagram (Figure 1) is described in TP 1, "Project Scope and Design".

Step 1: Scope Project

The purpose of Step 1 is to ensure that the project is well designed and integrated into the national policy planning and development process (TP 1). It is important to review the policy context and define the objectives of the project. This involves an understanding of the policy process itself, and choices about the sector(s) studied. This step also includes the initial formulation of an adaptation strategy, to be tested and refined throughout the study. Depending on the project objectives, researchers must select the appropriate study methodology and design the project. The project structure may follow the five steps in sequence or, in cases in which prior work has been completed, the project may progress swiftly to Step 4.

Figure 1: Example of an Adaptation Policy Framework



Step 2. Assess Current Vulnerability

Step 2 involves a comprehensive assessment of the present situation. It addresses the question, "Where does a society stand with respect to vulnerability to climate risks: what factors determine its vulnerability, and how successful is its current adaptation?" This analysis will suggest ways by which current vulnerability can be reduced and adaptation made more effective. This process will help to ensure that APF policies and measures are firmly based on current experience. Adaptation policy should be developed incrementally, building upon existing policies and, when appropriate, revising them (TP 3, 4, 5, and 6).

Step 3 Characterise Future Climate-Related Risks

While improved adaptation to current climate variability is important, it is not sufficient to deal with all the risks of climate change. Potential future scenarios incorporating climate change, vulnerability to impacts, and socioeconomic dynamics must be taken into account. These scenarios must consider future climate change and vulnerability, socioeconomic conditions, and trends in natural resource and environmental management (TP 4 and 5).

Step 4. Develop an Adaptation Strategy

The major task in Step 4 is integrating the results of Steps 2, and 3 to create a cohesive set of adaptation policy concepts and measures. It involves working with stakeholders and policy-makers to ensure that policy proposals and measures are presented for further assessment. The policy suggestions, as well as the supporting evidence and analysis from Steps 2 and 3, form the main report of an APF project (TP 8).

Step Five. Continue the Adaptation Process

The project report produced in Step 4 is actually the beginning of the adaptation process. Provisions must be made for ongoing monitoring and evaluation of this process (TP 9). This effort may require changes in institutional arrangements and may identify additional opportunities for specific adaptive capacity building. If the project has limited coverage of individual sectors, regions, or risks, further work may be necessary.

The APF diagram (Figure 1) also contains two sidebars that refer to the inter-related issues of stakeholder involvement and adaptive capacity building.

Engage Stakeholders (left sidebar)

The involvement of stakeholders is an important part of the adaptation process (TP2). Stakeholder involvement applies to all five steps. They can contribute significantly to understanding current vulnerability and adaptation and to identifying necessary adaptation measures. At the same time, their involvement in the project educates them about the risks associated with climate change.

Increase Adaptive Capacity (right sidebar)

The identification of priority needs for increasing adaptive capacity is fundamental to the APF. As with stakeholder involvement, adaptive capacity issues can be addressed throughout the five-step process. Researchers should focus particular attention on specific adaptive capacity that is relevant to climate change (TP7).

REFERENCES

To come

APPENDIX 1

The Adaptation Policy Framework has three components:

1 The Summary for Policy Makers
2 The Adaptation Policy Framework: A Guide for Policies to Facilitate Adaptation to Climate Change
3 Technical Papers (TP): Nine Technical Papers designed to help national-level study teams implement the APF (Nine 10-page technical documents)

TP 1 *APF Project Scope and Design*
TP 2 *Stakeholder Engagement to Increase Adaptive Capacity*
TP 3 *Vulnerability Assessment for Climate Adaptation*
TP 4 *Assessing Current Climate Risks*
TP 5 *Assessing Future Climate Risks*
TP 6 *Socioeconomic Conditions and Prospects*
TP 7 *Measuring and Enhancing Adaptive Capacity*
TP 8 *Formulation of an Adaptation Strategy*
TP 9 *Reviewing, Monitoring, and Evaluating Adaptation*