Supporting NAP development with the PROVIA Guidance:
A user companion

Supporting NAP development with the PROVIA Guidance: A user companion
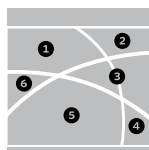
Authors
Alexander Bisaro, Global Climate Forum, Germany
Jochen Hinkel, Global Climate Forum, Germany
Marion Davis, Stockholm Environment Institute, USA
Richard Klein, Stockholm Environment Institute,
    Sweden

Cover photo credits

1. © CGIAR Climate
2. © SEI
3. © SEI/Garrison Photographic
4. © Flickr/Jane Shotaku
5. © SEI/Sean Wilson
6. © Monica Coll Besa

Table of Contents

© Flickr/CGIAR-CCFAS

Introduction

Climate change poses particular challenges to Least Developed Countries (LDCs), exacerbating the vulnerability of poor communities and adding new constraints, risks and uncertainties to their development. Recognizing this, the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) established a new national adaptation plan (NAP) process to facilitate effective adaptation planning in LDCs and other developing countries.

The NAP process aims to reduce vulnerability to climate change impacts by building adaptive capacity and resilience, and to help integrate adaptation into relevant policies, programmes and activities, especially in the context of development. The *Technical Guidelines for the National Adaptation Plan Process,* produced by the LDC Expert Group in December 2012, details a series of steps for producing a NAP. This user companion explains how a major new resource, the *PROVIA Guidance on Assessing Vulnerability, Impacts and Adaptation to Climate Change,* can be used to better understand key concepts and available methods and tools throughout the NAP process.

What is the PROVIA Guidance?

The PROVIA Guidance is an output of PROVIA, the Global Programme of Research on Climate Change Vulnerability, Impacts and Adaptation, an initiative launched jointly by the United Nations Environment Programme (UNEP), the World Meteorological Organization (WMO), and the United Nations Educational, Scientific and Cultural Organization (UNESCO), and hosted by UNEP in Nairobi. It updates previous guidance, and is meant to be a "living document" that will continue to be improved based on user feedback.

The goal of the PROVIA Guidance is to provide clear technical guidance that combines robust science with explicit consideration of user needs at local, national and international levels. It is meant to be useful to a wide array of audiences in both developing and industrialized countries, including researchers, consultants, policy analysts and sectoral planners who have some prior knowledge on climate risk assessment and adaptation.

The PROVIA Guidance does not prescribe a particular process or approach for assessing climate change vulnerability, impacts and adaptation, but rather covers the range of available approaches, methods and tools. It presents users with a structured set of relevant methods for each task, with decision trees to help guide them through key choices. It also explains how to apply the chosen methods, and directs them to additional resources.

The PROVIA Guidance is structured along a five-stage iterative adaptation learning cycle:

1. Identifying adaptation needs: What impacts may be expected under climate change? What are actors' vulnerabilities and capacities? What major issues need to be addressed?

2. Identifying adaptation options: How can the specific risks and opportunities that were identified be addressed? There may be several options available to achieve the desired goals.

3. Appraising adaptation options: What are the pros and cons of the different options, and which best fit the adaptation actors' objectives?

4. Planning and implementing adaptation actions: After an option is chosen, implementation can begin. The focus here is on practical issues, such as planning, assigning responsibilities, setting up institutional frameworks, and taking action.

5. Monitoring and evaluation of adaptation. As measures are implemented, the process is monitored and evaluated to ensure it goes as planned, identify any problems, document the outcomes achieved, change course as needed, and draw lessons from the experience.

This is an idealized model of adapting to climate change; "real-world" adaptation processes may not be linear, and in fact, may require refinement through iteration. The guidance therefore provides multiple entry points to allow and encourage readers to enter (and re-enter) at various stages or substages of the process, and directly access the material that meets their immediate needs.

The PROVIA Guidance differentiates adaptation situations based on the stage in the adaptation cycle, and whether the situation is public or private, and individual or collective. In addition, the guidance highlights three other key sets of empirical criteria: the characteristics of the climate risks (or opportunities) involved, such as whether they are already present; the characteristics of the affected actors, such as whether they are aware of the risks and have the capacity to adapt; and the characteristics of the available adaptation options, such as their relative cost and flexibility. In addition, we note other types of criteria that may inform the choice of approach, including theoretical criteria, such as whether methods from economic theory or social psychology are preferred; normative criteria, or the values and priorities that define what options are acceptable; and pragmatic criteria, such as time, skill or funding constraints.

How do the NAP Technical Guidelines and the PROVIA Guidance differ?

The NAP Technical Guidelines (NAP-TG) are geared to a very specific audience in a specific context: national policy-makers in LDCs and other developing countries, following a clearly defined set of steps. The PROVIA Guidance, in contrast, is meant for a broad audience across scales, sectors and actor types; it thus emphasizes the diversity of adaptation situations and the variety of approaches and methods needed to adjust to or cope with the effects of climate change.

Given their different purposes, it is natural that the NAP-TG and the PROVIA Guidance would differ in their approach and structure. Hence, the elements of the NAP-TG do not correspond one-to-one with the stages of the adaptation cycle as outlined in the PROVIA Guidance. Some sections of the guidance are directly relevant for those tasked with developing a NAP, while other sections are not.

What is this user companion?

This user companion, written by authors of the PROVIA Guidance, is a guide for a NAP policy-maker who would like to use our guidance.

The PROVIA Guidance is structured in four parts: an introduction and overview of the guidance (Section 1); a guide to choosing relevant methods and tools to address different tasks at each step of the adaptation cycle (Section 2); an in-depth discussion of different methods and tools (Section 3); and a series of case studies (Section 4). This companion matches "indicative activities" of specific steps in the NAP-TG with corresponding materials in Sections 2 and 3 of the guidance:

1. Where a NAP-TG indicative activity is broadly defined, this companion points to relevant subsections of Section 2, which offer guidance on choosing an approach or method. For example, NAP-TG Element B Step 2a is "Assess vulnerability to

©Katherine Vincent

climate change at multiple levels." Many different approaches could be relevant to this task, including impact projection and vulnerability indication, so we direct readers to Section 2.1 of the PROVIA Guidance, which discusses criteria for choosing an appropriate approach.

2. Where a NAP-TG indicative activity is more narrowly defined, calling for a specific method or approach, we point to the relevant subsections of Section 3. For example, NAP-TG Element B Step 1a is "Analyse the current climate to detect trends that could be used to support planning and decision-making." Section 3.2.1 of the PROVIA Guidance explains how to carry out trend detection and impact attribution.

Some sections of the guidance may refer to multiple steps in the NAP process – for example, methods for participation and stakeholder engagement. Some activities covered by the NAP-TG, on the other hand, are not discussed in the guidance, such as compiling lists of existing impact studies or adaptation measures. Finally, we must stress that like the PROVIA Guidance, this companion should not be seen as prescriptive; as the NAP-TG clearly states, "a country will define its unique set of activities based on its circumstances" (p.28).

Choosing and applying methods and tools for NAP steps and activities

In this section, we provide direct links from NAP-TG indicative activities to the appropriate sections in the PROVIA Guidance, as summarized in Table 1. For each activity, we give a brief overview of the relevant sections; some examples are also provided to illustrate the methodological guidance.

In order to familiarize yourself with the terminology and structure of the PROVIA Guidance, we recommend that you begin by reading Section 1. We should stress that this is not an exhaustive mapping of all NAP-TG tasks for which the guidance offers relevant materials, but a series of examples where there is a specific section in the guidance directly covers an indicative activity. For a more complete understanding of how the PROVIA Guidance might be useful in the NAP process, you may also wish to read the 14-page summary provided at the beginning of the document.

ELEMENT A **Lay the groundwork and address gaps**

NAP-TG STEP A.1
Initiating and launching the NAP process

Indicative activity
c. Create or enhance a national vision and mandate for the NAP process

Why is this activity important?
This activity focuses not only on the technical tasks of planning and implementing adaptation measures, but also on the work needed to support those efforts: communications, consensus-building, integration with non-climate initiatives (especially development), and capacity-building for key actors and institutions.

How does the PROVIA Guidance support this activity?
We provide guidance on choosing methods and tools for planning and implementation of adaptation (Section 2.4). We further provide methods to support communication and stakeholder engagement (Section 3.1).

The PROVIA Guidance Section 2.4, "Planning and implementing adaptation", gives an overview of methods and tools for planning and implementing adaptation, including engagement with stakeholders. Engaging stakeholders from the outset will make the adaptation plan likelier to be accepted,

TABLE 1 **Links from the NAP Technical Guidelines steps and indicative activities to relevant sections in the PROVIA Guidance.**

NAP Technical Guidelines			PROVIA Guidance	
	Step	**Indicative activity**	**Choosing methods**	**Applying methods**
A.	1. Initiating and launching the process	c. Create or enhance a national vision and mandate for the NAP process	2.4 Planning and implementing	3.1 Participation and engagement
				3.1 'Adaptation functions' and institutions to support adaptation
		e. NAP framework/strategy and M&E plan	2.5 Monitoring and evaluation	3.10 Tools for monitoring and evaluation
	2. Stocktaking: identifying available information	c. Conduct a gap analysis to assess capacities and data and information	2.1 Identifying adaptation needs	3.1.2 Stakeholder, social network and participation analysis
		d. Barriers to planning, design and implementation	2.4.1 Getting started	
	3. Addressing capacity gaps	b. Identifying opportunities for integrating adaptation into development planning		3.6 Institutional analysis
				3.6.2 Governance design
B.	1. Analysing current climate and future climate change scenarios	a. Analyse the current climate		3.2.1 Describing current impacts
		b. Characterize future climate risk using scenario analysis		3.4.3 Scenario analysis
	2. Assessing climate vulnerabilities and identifying adaptation options	a. Assess vulnerability to climate change at multiple levels	2.1 Identifying adaptation needs	
				3.2.2 Modelling future impacts
				3.2.3 Vulnerability indication
				3.3.4 Knowledge elicitation
		c. Identify and categorize adaptation options	2.2 Identifying adaptation options	
	3. Reviewing and appraising adaptation options	a. Appraise individual adaptation options	2.3 Choosing approaches for appraising adaptation options	
				3.7 Formal decision-making
C.	3. Enhancing capacity for planning and implementing	b. Designing and implementing training on the NAP process	2.4 Planning and implementing	3.1 Participation and engagement
				3.1.4 Facilitation toolkit
D.	1. Monitoring the NAP process	a. Identify areas to be evaluated	2.5 Monitoring and evaluation	3.10 Tools for monitoring and evaluation
		b. Define metrics for M&E	2.5.5 Identifying appropriate indicators	
				3.10.2 Critical review and principles for adaptation M&E
				3.10.3 Practical guidance for adaptation M&E

especially if the stakeholders are also willing to advocate for the plan. Often adaptation is not the only reason for change, and measures may be implemented as part of other initiatives, such as development projects. It is important to define the scope of the issues to be addressed, in the plan as a whole and in participatory processes. Stakeholders must understand how they are being involved, how the information they provide will be used, and what opportunities they have to influence decisions. This section provides guidance on methods to address these issues; Section 3.1, "Participation and engagement", will also be useful.

For support with identifying key actors and skill sets needed for a successful NAP process, see Section 3.3.1, "Adaptation functions and institutions to support adaptation".

NAP-TG STEP A.1
Initiating and launching the NAP process

Indicative activity
e. Define a NAP framework and strategy as well as a road map, including sequencing of various NAPs and a monitoring and evaluation (M&E) plan for the NAP process

Why is this activity important?
Setting clear goals, objectives and metrics and laying out a sequential set of steps, with clearly assigned responsibilities, will help ensure efficiency, unity of purpose, and accountability in the NAP process.

How does the PROVIA Guidance support this activity?
We provide guidance on both choosing methods for M&E (Section 2.5), which support the development of a NAP M&E plan.

The PROVIA Guidance Section 2.5, "Monitoring and evaluating adaptation", provides an overview of the motivations for M&E of adaptation, and principles of successful M&E. It describes common approaches such as results-based management and logical frameworks, both widely used by funders, and outcome mapping and most significant change, common in development. It also discusses features of adaptation that may require specialized M&E frameworks, such as the longer time horizons often involved.

In addition, the section covers the selection of indicators, highlighting the need to distinguish between process and outcome indicators (e.g. number of workshops held vs. resulting changes in participants' behaviour), including both quantitative and qualitative data, and disaggregating as relevant (e.g. by location, gender, income level or social group). It is thereby important to get different perspectives on "success", focusing not only on funders' priorities, but also on the intended "beneficiaries" and their perspectives. For additional guidance, see Section 3.10, "Methods for monitoring and evaluating adaptation".

NAP-TG STEP A.2
Stocktaking: identifying available information on climate change impacts, vulnerability and adaptation and assessing gaps and needs of the enabling environment for the NAP process

Indicative activity
c. Conduct a gap analysis to assess capacities and weaknesses, adequacy of available data and information, and resources to effectively engage in the NAP process

Why is this activity important?
Assessing capacity helps to identify potential constraints to effective engagement in the NAP. Synthesizing available data and knowledge helps to identify any major gaps; if those gaps cannot be filled with available resources, that may limit the range of methods and tools that can be applied in the NAP process.

How does the PROVIA Guidance support this activity?
We provide tools for stakeholder analysis and network analysis that can directly support the NAP capacity gap analysis (Section 3.1.2). Our guidance on methods for climate change impact analysis (Section 2.1) explains different types of methods for generating information on impacts and when they are applicable.

The PROVIA Guidance Section 3.1.2, "Stakeholder, social network and participation analysis", while geared to stakeholder engagement more generally, presents tools that may be useful in conducting a gap analysis in laying the groundwork for the NAP. We present several tools to help identify the stakeholders who should be engaged, analyse social networks, and understand participation (e.g. "ladders" to show different levels of engagement). We then describe several methodologies, guidance documents, toolkits and individual tools to help readers work with stakeholders at all stages of the adaptation cycle. We also present tools to help ensure participation of people who are often excluded – such as women, indigenous groups, and people who are not literate – and tools for participatory analysis and conflict resolution.

This indicative activity also aims at identifying and assessing information on climate impacts and vulnerability, and PROVIA Guidance

Section 2.1, "Identifying adaptation needs", explains the different kinds of climate change impact analyses that can be done, and the information needed to conduct them.

NAP-TG STEP A.2
Stocktaking: identifying available information on climate change impacts, vulnerability and adaptation and assessing gaps and needs of the enabling environment for the NAP process

Indicative activity
d. Assess barriers to planning, design and implementation

Why is this activity important?
A growing evidence base shows that a major factor in successful adaptation is the larger social and governance context, which can determine who supports or obstructs the process, what resources are available, and how much action is perceived as possible.

How does the PROVIA Guidance support this activity?
We provide guidance on approaches to identifying barriers that may emerge in the planning and implementation of adaptation (Section 2.4.1).

The PROVIA Guidance Section 2.4.1, "Getting started", gives an overview of barriers to both planning and implementation, including the need to engage stakeholders; build the case for adaptation; ensure that information is usable by the relevant actors; define the nature and scope of the work; agree on fundamental principles; set priorities, and decide how ambitious to be: whether to aim for incremental change, a more substantial shift, or transformational change.

NAP-TG STEP A.3
Addressing capacity gaps and weaknesses in undertaking the NAP process

Indicative activity
b. Identify and enhance awareness of potential opportunities for integrating adaptation into development planning at different levels

Why is this activity important?
Development plays a crucial role in reducing vulnerability to climate change, but when climate risks are not adequately considered, it can also exacerbate vulnerability.

How does the PROVIA Guidance support this activity?
We provide guidance on methods for policy, governance and institutional analysis that can support identifying opportunities to integrate adaptation into development planning (Section 3.6).

The PROVIA Guidance Section 3.6, "Institutional analysis", presents methods for policy and institutional analysis that can be used to understand the institutional context of adaptation, including political, social and economic aspects. This makes it easier to understand which actors need to be engaged, and identify opportunities for integrating adaptation in their policies and activities.

We cover three main approaches: governance description, governance design and governance emergence. Governance description approaches describe the actors and institutions relevant for adaptation. Governance design addresses the question of how to design effective institutions; one common approach is policy analysis, which is used to improve the design of policies, programmes or projects. Governance emergence approaches strive to understand the existing institutions, particularly addressing which contextual factors give rise to a particular institutional arrangement in a given case.

ELEMENT B **Preparatory elements**

NAP-TG STEP B.1
Analysing current climate and future climate change scenarios

Indicative activity
a. Analyse the current climate to detect trends that could be used to support planning and decision-making

Why is this activity important?
Analysis of climatic trends is crucial in attributing observed changes to climate change (vs. short-term variability or other factors), and identifying key areas of concern.

How does the PROVIA Guidance support this activity?
We provide guidance on methods for trend detection and impact attribution, with several examples (Section 3.2.1).

The PROVIA Guidance Section 3.2.1, "Describing current impacts", covers key methods, with examples, for describing current impacts of climate change; detecting trends via statistical methods; and attributing impacts. Trend detection focuses on identifying a pattern in observational data, to distinguish climate change from climate variability – e.g. is rainfall really decreasing, or did we just have a few dry years, with no observable long-term trend? Impact attribution involves linking specific

©Flickr/jikatu

impacts to climatic changes – e.g. attributing an increase in pest infestation to climate change. These methods rely on empirical observations derived from systematic measurements, which are analysed in relation to time (Section 3.2.1.1) or to other variables (Section 3.2.1.2).

NAP-TG STEP B.1

1. Analysing current climate and future climate change scenarios

Indicative activity

b. Characterize broad future climate risks and levels of uncertainty using scenario analysis at the national level or as part of a regional analysis including through climate and socioeconomic scenarios

Why is this activity important?

Characterizing future climate risks is essential for identifying adaptation needs; scenario analysis helps to understand how non-climatic factors could affect climate change impacts.

How does the PROVIA Guidance support this activity?

We provide guidance on methods for scenario analysis, with several examples (Section 3.4.3).

The PROVIA Guidance Section 3.4.3, "Scenario analysis", provides an overview of the extensive use of data and scenarios in climate impact and vulnerability assessments, focusing on the most useful resources, and highlights important issues to consider when using scenario analysis in the context of adaptation (see the case study on scenario analysis in Uruguay). It also provides a list of data portals that provide global-, national- and regional-level data that can be used in scenario analyses. It discusses how different

CASE STUDY *Uruguay's experience with scenario analysis*

Uruguay was the first pilot-country implementing Down to Earth: Territorial Action on Climate Change (TACC), an initiative by UNEP and UNDP and eight regional associations to support the development of subnational Low Emission Climate Resilient Development Strategies.

ADAPTATION SITUATION: IDENTIFYING ADAPTATION NEEDS

The project focused on the metropolitan area of Montevideo, which is near the coast and exposed to high winds from the Pampas, as well as to extreme hydro-meteorological events. At the outset of the project in 2009, a multi-stakeholder participatory process including government departments of Montevideo, San José and Canelones was established. As part of the process, a scenario analysis of future climate risks in the metropolitan area of Montevideo was conducted.

METHOD: SCENARIO ANALYSIS

Using historical data, global climate models were downscaled to high temporal (3 hours) and spatial (5 km) resolutions for temperature and precipitation in order to be useful to planners in the metropolitan area of Montevideo. Future climate was then projected under business-as-usual (A2) and sustainable development (B1) emissions scenarios to represent the widest range of possible futures.

RESULTS

Results showed that precipitation forecasts followed the same trend in both scenarios: precipitation increased and the rainy season shifted from March to April. The rainy season is thus projected to coincide with the period of highest storm surge frequency, which is also April. The scenario analysis thus showed an increasing climate risks over the middle of the century as run-off floods are increasingly likely to coincide with storm surge flooding, which can damage infrastructure and water supply. In a subsequent step, future impacts were analysed in the metropolitan area based on the range of climate outcomes from the scenario analysis and maps of climate sensitivities. These impact maps of the area, classified into coastal, rural and urban zones, were developed through participatory methods.

Source: UNDP (2011)

kinds of information can be incorporated in such analyses, including climate data; quantitative data about physical, economic, social or technical aspects of the system being studied; and qualitative descriptions of past, present or future conditions (storylines). We also explain different approaches to using scenarios for future climate and for future environmental and societal conditions that may influence vulnerability, impacts and risk management in general. Lastly, we note that using common sets of scenarios can help bring consistency and comparability to climate impact and adaptation assessments.

NAP-TG STEP B.2
Assessing climate vulnerabilities and identifying adaptation options at the sector, subnational, national and other appropriate levels

Indicative activity
a. Assess vulnerability to climate change at sector, subnational, national or appropriate levels

Why is this activity important?
Assessing vulnerability requires gathering information on current and future biophysical and socio-economic impacts and is essential to identifying adaptation needs.

How does the PROVIA Guidance support this activity?
We provide guidance on choosing approaches to vulnerability assessment, which provides support in matching approaches to specific sectors or levels (Section 2.1). We also provide guidance on applying various methods for modelling future impacts (Section 3.2.2), vulnerability indication (Section 3.2.3), and knowledge elicitation (Section 3.2.4).

Many sections of the PROVIA Guidance are relevant to this activity, as the literature on vulnerability assessment is vast. The PROVIA Guidance Section 2.1, "Identifying adaptation needs", is a useful entry point, as this section provides guidance on choosing methods appropriate to the level, scale or region to be assessed. Several sections of Section 3 are also relevant, once an appropriate method has been selected. We summarize these below.

Section 2.1 provides extensive methodological guidance on vulnerability assessment, which comprises approaches focused on analysing impacts, analysing capacity, or combinations of both. Identifying adaptation needs involves thus two equally important and complementary subtasks: 1) analysing observed or expected impacts of

climate change (with and without adaptation), and 2) analysing the potential capacity to prevent, moderate or adapt to these impacts. Capacity analysis explores the availability of a wide range of resources – such as natural, financial, cognitive, social, and institutional capital – that may be mobilized for adaptation. We have therefore structured Section 2.1 according to decision trees for choosing impact analysis approaches (Section 2.1.2) and for choosing capacity analysis approaches (Section 2.1.3).

Section 3.2.2, "Modelling future impacts", describes key issues in modelling future impacts, including how to project future climate change and how to represent adaptation in models; a wide and ever-expanding range of methods and tools are available. In many cases it will be preferable to adopt an

©Flickr/Amir Jina

existing model and tailor it for the adaptation context or to meet specific assessment needs. However, this is not always possible, as these tools tend to be available only for certain sectors, such as agriculture, water resources, coastal zones, and terrestrial ecosystems. Models vary enormously in their complexity, in the spatial and temporal scale of their application, and in their assumptions about adaptation, but the process of impact projection is generally the same: select climate and socio-economic scenarios, select different adaptation options and strategies to examine, where these can be simulated, and then compute impacts. Each of these steps is described in detail. Indication methods may also be relevant.

Section 3.2.3, "Vulnerability indication", provides an overview of these approaches, which start from the assumption that individual or social capacities and external climate drivers are at least partly responsible for climate change impacts, but their interactions cannot be reliably simulated using computational models. The key question addressed is, which combinations of variables give the most reliable indication of how climate change may affect the study unit? The basic tasks are to select potential indicating variables, based on the literature, and to aggregate the indicating variables based on theoretical and normative arguments. We also highlight concerns that several experts have raised about vulnerability indices.

Finally, Section 3.2.4, "Knowledge elicitation", describes different ways to elicit knowledge, which may be important when, for example, modelling approaches to vulnerability assessment give conflicting results. These include expert judgement, participatory development, community vulnerability assessments and emerging user-controlled learning tools.

NAP-TG STEP B.2

2. Assessing climate vulnerabilities and identifying adaptation options at the sector, subnational, national and other appropriate levels

Indicative activity

c. Identify and categorize adaptation options at multiple scales to address priority vulnerabilities

Why is this activity important?

Before an adaptation plan can be developed, it is crucial to understand the range of available options for adapting to each climate risk.

How does the PROVIA Guidance support this activity?

We provide guidance on identifying and categorizing adaptation options (Section 2.2).

Often the process of identifying adaptation options consists simply of compiling lists of measures, labelled by sector, hazard or region. The PROVIA Guidance Section 2.2, "Identifying adaptation options", goes beyond this by directing readers to a broader set of methods for identifying adaptation options, including behavioural and institutional analysis.

For NAP development, methods to identify options for public actors are particularly relevant. When leading or seeking to influence collective action, public actors need to consider a wide array of measures and criteria, such as distributional effects and potential conflicts that may arise. Conflicts can arise between the individual preferences of private actors and social welfare, such as when a common pool resource is over-exploited. Some options that are theoretically possible – say, choosing not to further

develop a high-risk coastal zone – might not be feasible without first building consensus. In order to identify appropriate policy measures, one needs to understand the nature of the interdependences and conflicts between actors. This can be done through institutional analysis, looking not only at formal laws, policies and governance structures, but also at informal norms, customs and shared strategies.

In identifying public options for influencing individual action, public actors must consider actors' potential capacity – the resources, including material resources, skills and networks or social capital available to them – and their actual capacity. Actual capacity can be enabled or constrained by institutional and cognitive factors, which are referred to as barriers to adaptation. Behavioural analysis can be undertaken to identify the relevant cognitive and institutional barriers, and identifying appropriate options.

NAP-TG STEP B.3

Reviewing and appraising adaptation options

Indicative activity

a. Appraise individual adaptation options, including economic, ecosystem and social costs and benefits, and possibilities for unintended (positive and negative) impacts of adaptation measures

Why is this activity important?

Once adaptation options have been identified, a systematic approach is needed to select the most appropriate ones, based on criteria aligned with national adaptation and development goals.

©Flickr/Rod Waddington

CASE STUDY *Adapting to severe water scarcity in Yemen*

Yemen was selected as a target country of the Netherlands Climate Assistance Programme (NCAP), which aims to support UNFCCC non-Annex I countries in "their efforts to prepare, formulate, implement, and evaluate their policy in relation to climate change." In several water basins in Yemen, the project carried out stakeholder consultations; data collection; integrated modelling of water demands and supply and, finally, multi-criteria analysis (MCA) to appraise adaptation options.

ADAPTATION SITUATION: APPRAISING ADAPTATION OPTIONS

In the Sana'a Basin, one of several selected project areas, stakeholder consultations were undertaken using rapid rural appraisal techniques and focused on local perceptions of water scarcity, climatic factors, and development challenges. The Water Evaluation and Planning System (WEAP) model was used to evaluate water demands and scarcity across all sectors for a baseline scenario (i.e. without adaptation strategies and under a climate sequence developed by repeating historical climate data) and a set of alternative scenarios, all simulated through the year 2025. These latter scenarios represented potential adaptation options in water resource management. These three steps fed into a MCA conducted with stakeholder input.

METHOD: MULTI-CRITERIA ANALYSIS

The MCA process sought to determine the preferred adaptation options among various interest groups (e.g. farmers, politicians), based on several criteria. The options considered drip irrigation; improved indigenous methods for the use of wadi (a ravine or channel that is dry except during the rainy season); alternative crop production; improved water distribution systems; promotion of lower population growth in Sana'a city; and the use of grey water. The criteria for appraising the options were based on Yemen's National Adaptation Programme of Action (NAPA) and included an option's contribution to sustainable development; livelihood security of local communities; poverty reduction to enhance adaptive capacity; synergy with other multilateral environmental agreements; and cost-effectiveness.

RESULTS

The MCA resulted in a ranking of potential adaptation options, with improvement of indigenous methods for wadi flow use as the stakeholders' top choice. An adaptation option planning for approximately 23 check dams to be constructed on the main watercourse of the Asser Wadi watershed to reduce runoff flow and to enhance groundwater recharge was prioritized.

Source: NCAP (2009)

How does the PROVIA Guidance support this activity?

We provide guidance on choosing appropriate decision-making methods (Section 2.3) and explain how to apply these formal decision-making methods (Section 3.7), with examples.

A wide range of methods can be applied to appraise adaptation options. The PROVIA Guidance Section 2.3, "Choosing approaches for appraising adaptation options", provides decision trees and criteria to choose appropriate methods.

We distinguish between formal approaches – for example, multi-criteria analysis (see the Yemen case study), cost-benefit analysis or robust decision-making – and deliberative/participatory approaches, which appraise options by eliciting information from the actors involved and harmonizing their preferences.

For formal appraisal of options, key factors in choosing an approach are whether the options are all short-term, or also include long-term ones; whether residual impacts can be projected; whether there are risks (or opportunities) due to current climate extremes and variability; what the relative costs of options are; and whether options are flexible. We have combined these criteria into a decision tree to guide readers to appropriate approaches, such as adaptive management, decision-making under uncertainty or robust decision-making. Section 3.7, "Formal decision-making", provides a more in-depth description of different methods, with examples.

ELEMENT C Implementation strategies

NAP-TG STEP C.3
Enhancing capacity for planning and implementing adaptations

Indicative activity
b. Designing and implementing training on the NAP process on an ongoing basis at sectoral and subnational levels to facilitate adaptation planning at subnational levels

Why is this activity important?
Training on the NAP process contributes to strengthening institutional, human, societal and systemic planning capacities in line with the overall goals of the NAP process.

How does the PROVIA Guidance support this activity?
We provide guidance on methods and tools for participation and stakeholder engagement that can support training on NAP process at various levels (Section 3.1). Additionally, general aspects of designing and implementing adaptation are relevant here (Section 2.4).

The PROVIA Guidance Section 3.1, "Participation and engagement", discusses tools to support successful stakeholder engagement and participation. This includes a discussion of the principles behind participatory processes, ethical and social-justice considerations, and the wide range of ways in which stakeholders may be engaged: from one-shot discussions, to sustained participation, ownership and leadership of adaptation processes. We also discuss what

makes a good facilitator – from strong interpersonal skills, to a commitment to ensuring all voices are heard, to awareness of factors that might discourage people from speaking freely. We then present several tools to help identify the stakeholders who should be engaged, analyse social networks, and understand participation (e.g. "ladders" to show different levels of engagement). In particular, see PROVIA Guidance Section 3.1.4, "Facilitation toolkit".

For general aspects of designing and implementing adaptation and required content for training, see PROVIA Guidance Section 2.4.

ELEMENT D Reporting, monitoring and evaluation

NAP-TG STEP D.1
Monitoring the NAP process

Indicative activity
a. Identify (few) areas to be evaluated through qualitative and quantitative performance measures as part of monitoring and assessment of progress, effectiveness and gap analysis of the NAP process

Why is this activity important?
Monitoring helps ensure that the process is working as planned, and highlights problems that require intervention. An exhaustive M&E system is unlikely to be cost-effective, so priorities need to be set.

How does the PROVIA Guidance support this activity?
We provide guidance on choosing approaches for M&E (Section 2.5) and tools for M&E (Section 3.10).

In NAP-TG Step A.1.e above, we introduced the PROVIA Guidance Section 2.5, "Monitoring and evaluation"; here it is again relevant – particularly the learning aspects discussed in the section. Learning through M&E is particularly important, as successful adaptation takes place through an iterative cycle in which processes and plans are continually adjusted and improved.

Section 2.5 and its companion, Section 3.10, "Methods for monitoring and evaluating adaptation", provide an overview of the motivations for M&E of adaptation, principles of successful M&E, different methods and tools that are commonly used, and reflections on how to determine what can and should be measured.

NAP-TG STEP D.1
Monitoring the NAP process

Indicative activity
b. For the areas identified above, define specific metrics for documenting progress, measuring and communicating levels of effectiveness and assessing gaps under the NAP process, and a data collection plan

Why is this activity important?
Once specific areas of focus for M&E have been selected, it is crucial to choose performance measures that are truly relevant, and for which adequate and timely data collection is feasible.

How does the PROVIA Guidance support this activity?
We provide guidance on identifying appropriate indicators (Sections 2.5.5 and 3.10.2) and on baseline-setting (Section 3.10.3).

The PROVIA Guidance Section 2.5.5, "Identifying appropriate indicators", emphasizes the importance of choosing indicators can isolate and represent the essential changes sought (see the case study on defining indicators for the German Adaptation Strategy). The process of defining indicators may also help clarify different perspectives on the desired outcomes and set realistic expectations. On the other hand, there are many potential pitfalls: for example, it is easy to pick misleading or inappropriate indicators, the data may be unreliable, and a great deal of context may be lost. It is also crucial to remember that the indicators will implicitly set priorities for implementation, as they create an incentive to try to perform well by the specific measures selected (e.g. number of people trained), potentially at the expense of other goals. Sections 3.10.2 and 3.10.3 are also useful, as they specifically discuss indicator selection and baseline-setting.

A final note

This user companion to the NAP Technical Guidelines and the PROVIA Guidance serves to connect the two documents and thus help those involved in national adaptation planning to identify and understand relevant assessment approaches, methods and tools. We hope that users will share their experiences and feedback with the authors, so that any future editions of the user companion and the PROVIA Guidance may benefit from practical lessons learnt.

© Katharine Vincent

© Flickr/Wiesbaden112.de/Michael Ehresmann

CASE STUDY *Defining indicators for the German Adaptation Strategy*

The German Federal Government adopted a national adaptation strategy in December 2008, laying out goals and responsibilities for adaptation as well as potential measures to be carried out by government actors at various levels.

ADAPTATION SITUATION: MONITORING AND EVALUATING ADAPTATION

The strategy identifies 13 sectors where action on adaptation will be taken: human health; building sector; water regime, water management, coastal and marine protection; soil; biodiversity; agriculture; woodland and forestry; fishery; energy industry (change, transport and utilities); finance management; transport, transport infrastructure; trade and industry, and tourism. In addition, two cross-cutting areas for adaptation are identified: spatial, regional and physical development planning, and public safety. In order to monitor and evaluate adaptation in each of these areas, relevant indicators need to be defined; the process summarized here developed indicators for climate change impacts and vulnerability and for adaptation options.

METHOD: INDICATOR SELECTION

Impacts and responses are identified in each action field, and ranked by stakeholders and experts according to certain criteria, i.e. whether the impact is relevant, whether it can be easily seen to be caused by climate, whether a response is well-known and understood by experts to reduce impacts. Based on this evaluation, themes are developed in the sectors for which indicators should be chosen. For example, the density of insurance against fires is selected as an indicator of the adaptation response against flooding from extreme events (because extended coverage is offered through the provision of fire insurance).

RESULTS

The results will produce impact, response and output indicators across all of the identified action fields. The development of this indicator system is being carried out through stakeholder involvement in each of the sectors; the first iteration should be complete by 2015.

Source: Schönthaler et al. (2010).

References

Least Developed Countries Expert Group (2012). *National Adaptation Plans: Technical Guidelines for the National Adaptation Plan Process*. United Nations Framework Convention on Climate Change Secretariat, Bonn, Germany. http://unfccc.int/nap/.

NCAP (2009). *The Adaptation Continuum: Groundwork for the Future*. T. Devisscher, G. O'Brien, P. O'Keefe, and I. Tellam (eds.). Netherlands Climate Assistance Program. http://www.wikiadapt.org/filestore/NCAP/NCAP_Webview.pdf.

PROVIA (2013). *PROVIA Guidance on Assessing Vulnerability, Impacts and Adaptation to Climate Change*. Consultation document. United Nations Environment Programme, Nairobi, Kenya. http://www.unep.org/provia.

Schönthaler, K., von Andrian-Werburg, S., Wulfert, K., Luthardt, V., Kreinsen, B., Schultz-Sternberg, R. and Hommel, R. (2010). *Establishment of an Indicator Concept for the German Strategy on Adaptation to Climate Change*. Umweltbundesamt, Dessau-Roßlau, Germany. http://www.umweltbundesamt.de/publikationen/establishment-of-an-indicator-concept-for-german.

UNDP (2011). *Down to Earth: Territorial Approach to Climate Change – 2011 Update*. United Nations Development Programme, New York and Geneva. http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/Climate%20Strategies/TACC_report.pdf.

Authors

Alexander Bisaro   *Global Climate Forum, Germany*
Jochen Hinkel   *Global Climate Forum, Germany*
Marion Davis   *Stockholm Environment Institute, USA*
Richard Klein   *Stockholm Environment Institute, Sweden*

PROVIA
PROGRAMME OF RESEARCH ON
CLIMATE CHANGE VULNERABILITY,
IMPACTS AND ADAPTATION

GCF
Global Climate Forum

SEI
STOCKHOLM
ENVIRONMENT
INSTITUTE

NAP-GSP
NATIONAL ADAPTATION PLAN GLOBAL SUPPORT PROGRAMME

UNDP
Empowered lives.
Resilient nations.

UNEP

gef

United Nations
Framework Convention on
Climate Change