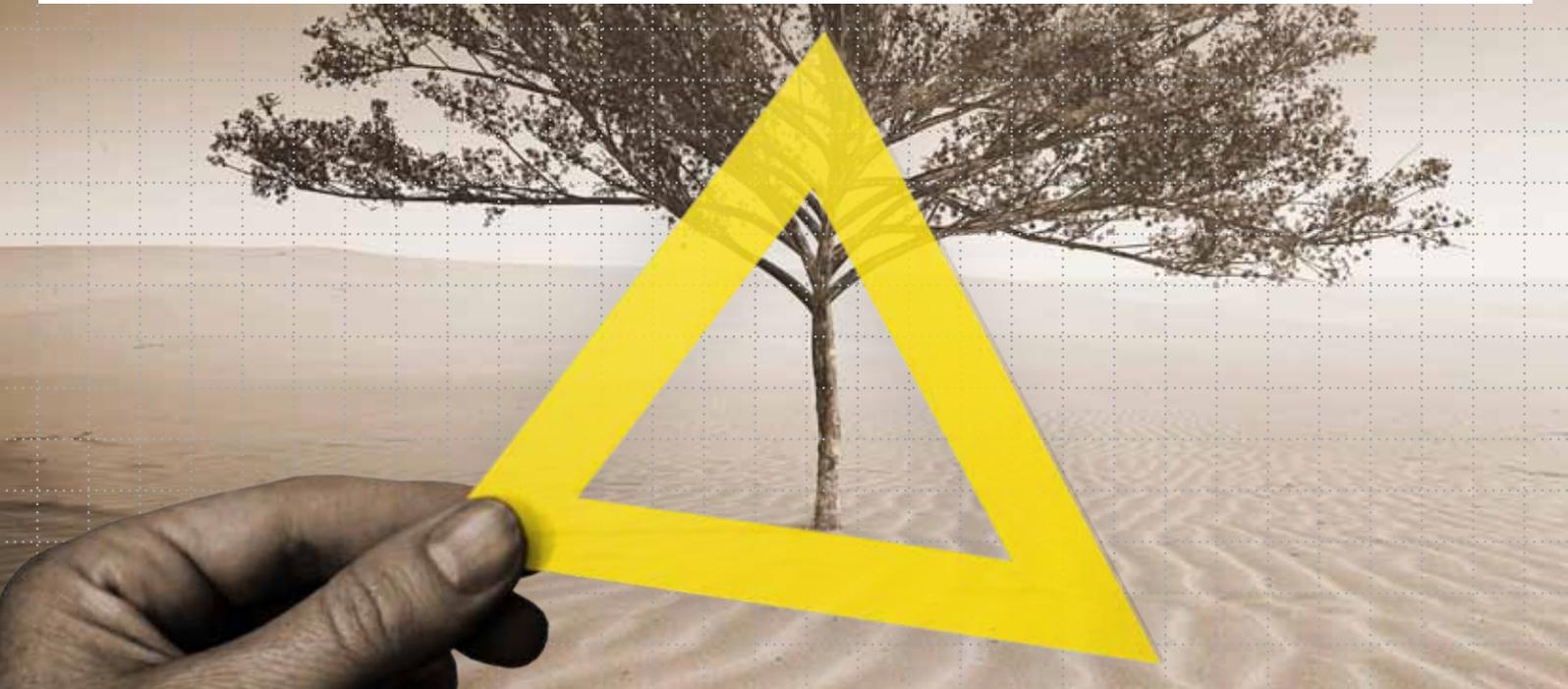




Federal Ministry
for Economic Cooperation
and Development



Developing national adaptation monitoring and evaluation systems: A guidebook

Published by

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

In cooperation with

 **IISD**
International Institute for
Sustainable Development



Acknowledgments

The authors are grateful to those who provided inputs and feedback throughout the process of drafting this Guidebook: Paul Desanker (UNFCCC Secretariat), Susannah Fisher (International Institute for Environment and Development, IIED), Youssef Jaouhari (Morocco), Don Lemmen (UNFCCC Adaptation Committee), Sofia Munoz Alarcon (Mexico), Thinley Namgyel (LEG), & Jan Verhagen (LEG).

Developing national adaptation monitoring and evaluation systems: A guidebook

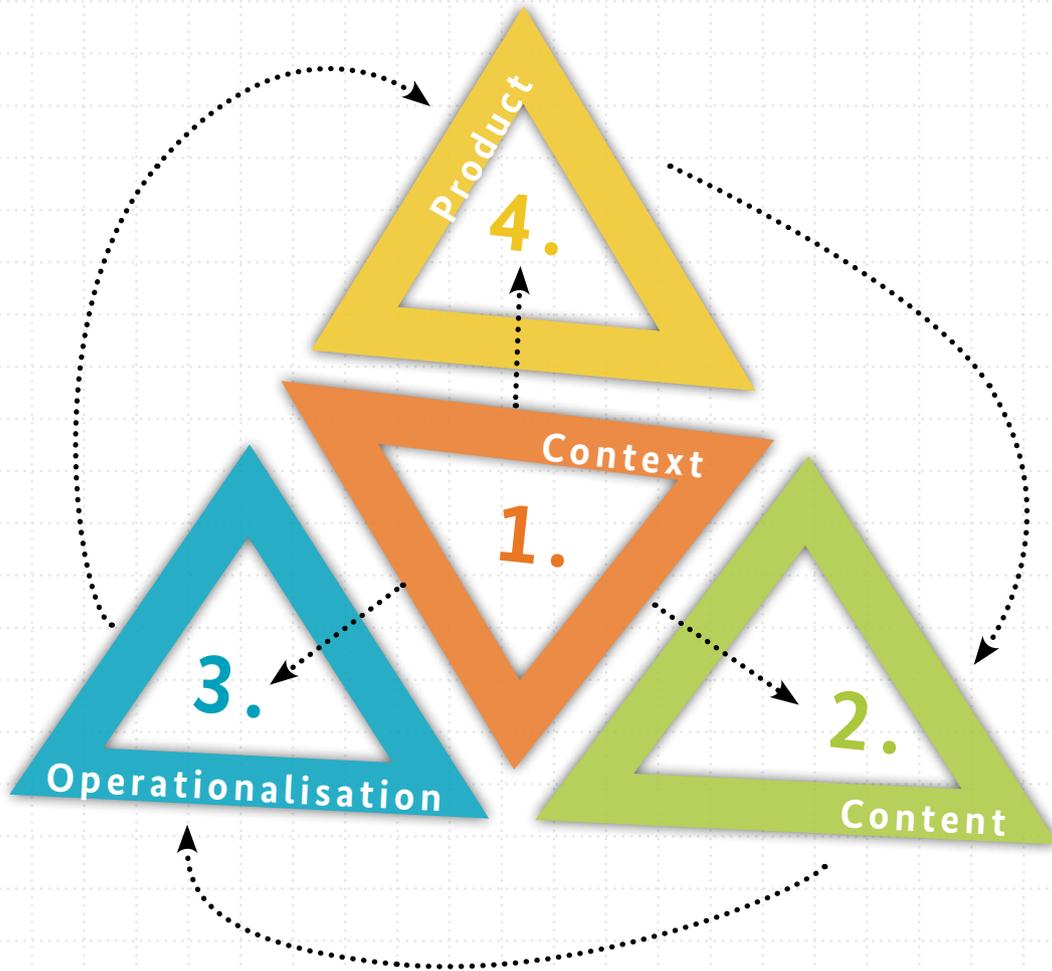
Responsible

Julia Olivier (GIZ)

Authors

Hayley Price-Kelly, Anne Hammill, Julie Dekens (IISD)

Timo Leiter, Julia Olivier (GIZ)



EXECUTIVE SUMMARY

As more and more governments foster the development and implementation of adaptation plans and policies including the National Adaptation Plan (NAP) process agreed by the parties to the UNFCCC, M&E of adaptation at the national level is gaining importance.

National M&E of adaptation looks at progress towards adaptation in a country. This may involve looking at progress in implementing adaptation-related investments, policies, plans and interventions (**process**), and/or impacts that these may have (**adaptation outcomes**). Since climate change affects a broad range of sectors that are critical to a country's overall development, such as agriculture, water, health, and infrastructure, national M&E of adaptation often requires data and information from across sectors and about interventions taking place at sub-national levels, such as municipal, community, and project levels.

This Guidebook is **intended for decision-makers and technical advisors** involved in the development of national M&E systems for adaptation, particularly in developing and middle income countries. Its **objective** is to guide decision-making regarding the purpose, design, operationalisation, and use of results of an appropriate system for national M&E of adaptation. Given its close linkages with the broader development and M&E context in a given country, the Guidebook recognizes that there

is **no one-size-fits all approach** to national M&E of adaptation: Experience shows that decision-makers in different countries have chosen very different approaches depending on the specific context.

This Guidebook therefore leads the reader through a series of questions for consideration, responses to which will provide a basis for identifying practical steps towards the adoption of a national adaptation M&E system that best suits a given country. These questions for consideration are divided into **four interrelated building blocks** illustrated in the figure on the left and related to: Understanding the **context** of the M&E system, identifying the **content** to monitor, designing a process for **operationalisation**, and deciding how to present results through products that will respond to the purpose of the M&E system.

This guidebook is based on examples from countries that have recently or are currently developing national adaptation M&E systems. It also builds on available publications and tools on M&E of adaptation. Although this Guidebook does not focus exclusively on M&E of the NAP process, it addresses related issues and points readers to relevant sections of the NAP Technical Guidelines, as well as to M&E tools that have been specifically designed for monitoring the NAP process.

CONTENTS

Boxes

Box 1: The National Adaptation Plan process	15
Box 2: Theory of change	22
Box 3: Addressing gender through M&E of adaptation	40
Box 4: Profiles of national M&E systems	51

Figures

Figure 1: Monitoring and/or evaluating adaptation for different purposes	9
Figure 2: Levels of M&E of adaptation	11
Figure 3: M&E of process and adaptation outcomes	13
Figure 4: Building blocks in the development of the M&E system	17
Figure 5: Map through the considerations in this Guidebook	19
Figure 6: Interlinkages among considerations in the Guidebook	20
Figure 7: Mapping purposes of M&E systems	27
Figure 8: Horizontal and vertical aggregation	30

Tables

Table 1: Examples of using M&E findings	28
Table 2: Existing tools and frameworks for national M&E of adaptation	34
Table 3: Example of mapping of existing data sources in Kenya	39
Table 4: Relative resource-intensiveness of M&E systems	45
Table 5: Examples of data collection tools and approaches	47
Table 6: Examples of outputs and reporting formats for different purposes	49



PREFACE	7	2. Content	32
		2.1 Focus:	32
		What do you want to monitor?	
		2.2 Data and information requirements:	36
		What type of data and information do you require to fulfill the purpose of the M&E system?	
INTRODUCTION	8	3. Operationalisation	42
Rationale for national M&E of adaptation	14	3.1 Institutional arrangements and resources:	42
		What institutions and resources will you work with?	
Structure of the Guidebook	16	3.2 Synthesis:	44
		How will you collect and synthesise the data and information you require?	
KEY CONSIDERATIONS: DEVELOPMENT OF NATIONAL ADAPTATION M&E SYSTEMS	21	4. Products	48
Before beginning	21	4.1 Outputs and Reporting:	48
		What will the products of the M&E system be?	
1. Context	24	NEXT STEPS	50
1.1 Policy context:	24	ANNEX	52
How does M&E of adaptation fit within the broader policy and M&E environment?		GLOSSARY	56
1.2 Purpose:	25	REFERENCES	57
What is the purpose of the M&E system and how do you intend results to be used?			
1.3 Scale(s):	29		
What are the levels of application and aggregation?			

Abbreviations

COP	Conference of the Parties to the UNFCCC
CRM	Climate Risk Management
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
IIED	International Institute for Environment and Development
LEG	Least Developed Countries Expert Group
M&E	Monitoring and Evaluation
NAP process	National Adaptation Plan process
OECD	Organisation for Economic Co-operation and Development
OREDDs	Regional Observatories on Environmental and Sustainable Development (Morocco)
PEG Tool	Tool for monitoring Progress, Effectiveness, and Gaps under the NAP process (developed by the LEG)
PPCR	Pilot Program for Climate Resilience
PROVIA	Global Programme of Research on Climate Change Vulnerability, Impacts and Adaptation
RREIE	Regional Network of Exchanging Environmental Information (Morocco)
SIRE	Regional Environmental Information System (Morocco)
SNAP tool	Stocktaking for National Adaptation Planning tool (GIZ)
TAMD	Tracking Adaptation and Measuring Development (IIED)
UKCIP	United Kingdom Climate Impacts Programme
UNFCCC	United Nations Framework Convention on Climate Change

PREFACE

Germany's Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and the Least Developed Countries Expert Group (LEG) initiated the development of this Guidebook. It responds to a demand from decision-makers working in the field of adaptation or a climate-sensitive sector who lacked information about M&E of adaptation and how it could inform their work.

The Guidebook was jointly drafted by the International Institute for Sustainable Development (IISD) and by GIZ. An Advisory Group comprising representatives from the UNFCCC Secretariat, the LEG and the Adaptation Committee served as reviewers and provided feedback throughout the drafting process. Experts on M&E of adaptation as well as decision-makers from developing countries who are working towards implementing adaptation M&E systems have also been consulted.

The Guidebook builds on a comparative review of national M&E of adaptation in ten countries, jointly produced by GIZ and IISD in 2014 and draws on examples, recommendations, and lessons that emerged from this

study. It also refers the reader to relevant resources developed by other institutions working in the field of adaptation and M&E, including: the Climate Technology Centre & Network (CTCN), Climate Investment Funds (CIF), the European Environment Agency (EEA), Global Environment Facility's Independent Evaluation Office (GEF-IEO), the online community of practice "Climate-Eval", the International Institute for Environment and Development (IIED), the Organisation for Economic Cooperation and Development (OECD), Global Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA), United Kingdom Climate Impacts Programme (UKCIP), NAP Global Support Programme (NAP-GSP), UNFCCC Adaptation Committee and Least Developed Countries Expert Group (LEG), and the World Resources Institute (WRI).

INTRODUCTION

Actors are pursuing climate change adaptation on different levels, ranging from household and community level to the international level. **Monitoring and evaluation (M&E)** is an important part of this process.

- ▶ **Monitoring** is the systematic and continuous collection of information that enables stakeholders to check whether an intervention is on track or achieving set objectives.
- ▶ **Evaluation** is a systematic assessment of the worth or utility of an intervention at a specific point in time, for example whether a policy has been effective in achieving set objectives.

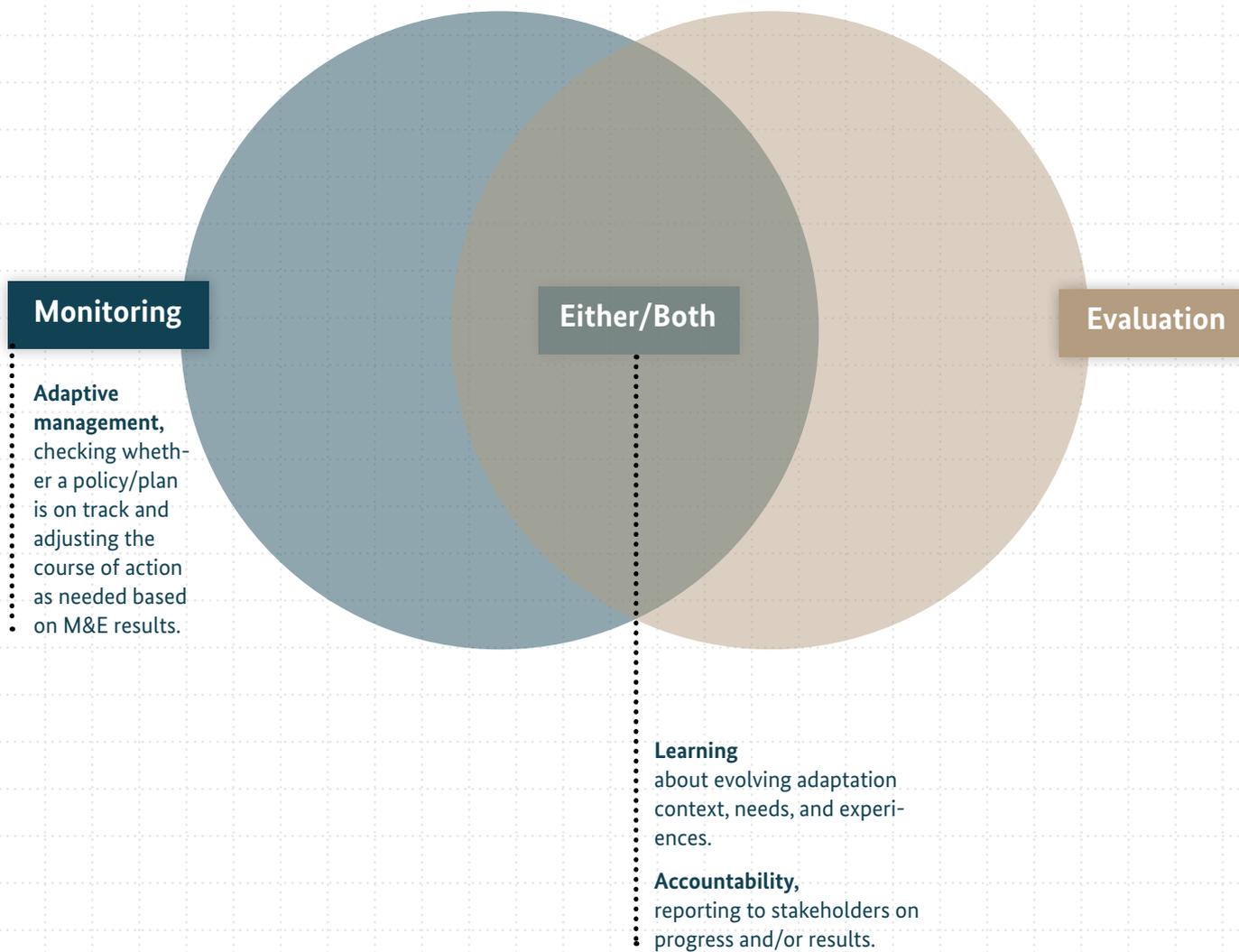
M&E of adaptation aims to track progress in implementing adaptation interventions, and/or how these interventions are reducing vulnerability, improving adaptive capacity, and supporting the overall well-being of populations affected by the impacts of climate change. As more and more governments move from raising awareness for the necessity of adaptation to developing and

implementing adaptation plans and policies—including the National Adaptation Plan process agreed by the parties to the UNFCCC—M&E of adaptation at the national level is gaining importance.

At the national level, adaptation is pursued through policies, planning and investments related to addressing the challenges and potential opportunities that climate impacts are expected to present, or are already presenting. Governments do this through stand-alone adaptation interventions, or by integrating adaptation considerations into policy and planning in climate-sensitive sectors or overall development planning. For the purposes of this Guidebook, the term “national M&E of adaptation” is used throughout, but the considerations and lessons are also relevant for lower-tier administrative levels such as federal states or provinces.

Although generally labelled “M&E”, **a national adaptation M&E system may use monitoring and/or evaluation to different extents depending on its purpose.** Figure 1 illustrates how monitoring and evaluation can serve dif-

Figure 1:
Monitoring and/or evaluating
adaptation for different purposes



ferent purposes. Monitoring takes place on a continuous basis which is required for adaptive management in order to track progress and determine whether any adjustments need to be made. For accountability purposes, both monitoring and evaluation may be used: monitoring can help to confirm whether a planned intervention has taken place, evaluation can help to assess its effectiveness. Similarly, both monitoring and evaluation can serve learning purposes. (For more on the purposes of national adaptation M&E systems, see consideration 1.2.)

National M&E of adaptation looks at progress towards adaptation in a country: Which achievements have been made in implementing adaptation-related policies, plans, interventions, and investments? And what are the results of those achievements? As interventions on a more local level also contribute to this progress, national M&E of adaptation may also need to take into account information about adaptation that happens at sub-national levels (Leiter, 2015). (For more information on this relationship see below, especially consideration 1.3.)

Figure 2 shows how national M&E of adaptation relates to community-based, project, and portfolio M&E of adaptation: National M&E of adaptation refers to adaptation progress of a country and can take into account information about what is happening at the more local project and community levels, whereas portfolio M&E of adaptation aims to explain how a range of adaptation projects (in one or multiple countries) are contributing to a common set of objectives. M&E of an international portfolio may draw on information from project- and national-level M&E, while M&E of a portfolio of projects

within a single country may feed into national M&E of adaptation.

National M&E of adaptation may focus to varying degrees on **process** or on **adaptation outcomes**. Process refers to advancement in implementing policies, plans or interventions that aim to promote adaptation and/or to build institutional and human capacity to do so. **Adaptation outcome** refers to the changes that result from the implementation of those policies, plans, or interventions, i.e. whether adaptation actually takes place.

Figure 2:
Levels of M&E of
adaptation



Legend:

Who does M&E?

What is being assessed?

Figure 3 illustrates how investments of financial and human resources feed into capacity for and implementation of adaptation interventions, which over time are expected to contribute to adaptation outcomes in the country or region in question. It also illustrates some of the **challenges associated with M&E of adaptation**—see [OECD 2014](#)⁴ and [Bours et al. 2014](#)¹ for more on these methodological issues, which include:

- ▶ the **context specific nature of adaptation** and the associated **lack of a common metric to measure success** (such as greenhouse gas reduction can be used to measure success of mitigation efforts);
- ▶ the **long timescale** over which climate change unfolds;
- ▶ **uncertainty** regarding the actual impacts of climate change (making it difficult to predict what a particular intervention will contribute to achieving adaptation results);
- ▶ **intervening factors** such as socio-economic change and non-climatic environmental degradation (which affect adaptation outcomes and make it difficult to determine whether a change can be directly attributed to a particular intervention, -> Figure 3);
- ▶ **unavailability of data** on the changes to be monitored (data may not be available by the time required for M&E purposes, or may not have been collected at all if the need for it was not foreseen well in advance).

Due to the challenges of directly attributing outcomes to individual actions it is often necessary to focus on

demonstrating a plausible **contribution** of inputs and processes to the achievement of outcomes. Furthermore, when looking at adaptation outcomes and why the expected results were or were not achieved, it is important to identify from the outset assumptions regarding expected climate change impacts.

Since climate change affects a broad range of sectors that are crucial for a country's overall development, such as agriculture, water, health, and infrastructure, adaptation policy and planning involves **cross-sectoral integration** and integration with **development planning and interventions** at national and more local levels. This requires involvement of ministries of relevant sectors (including those responsible for planning and finance) and a strong coordination function. Therefore national M&E of adaptation must also operate across sectors and levels and consider **integration in or linkages to existing M&E structures**.

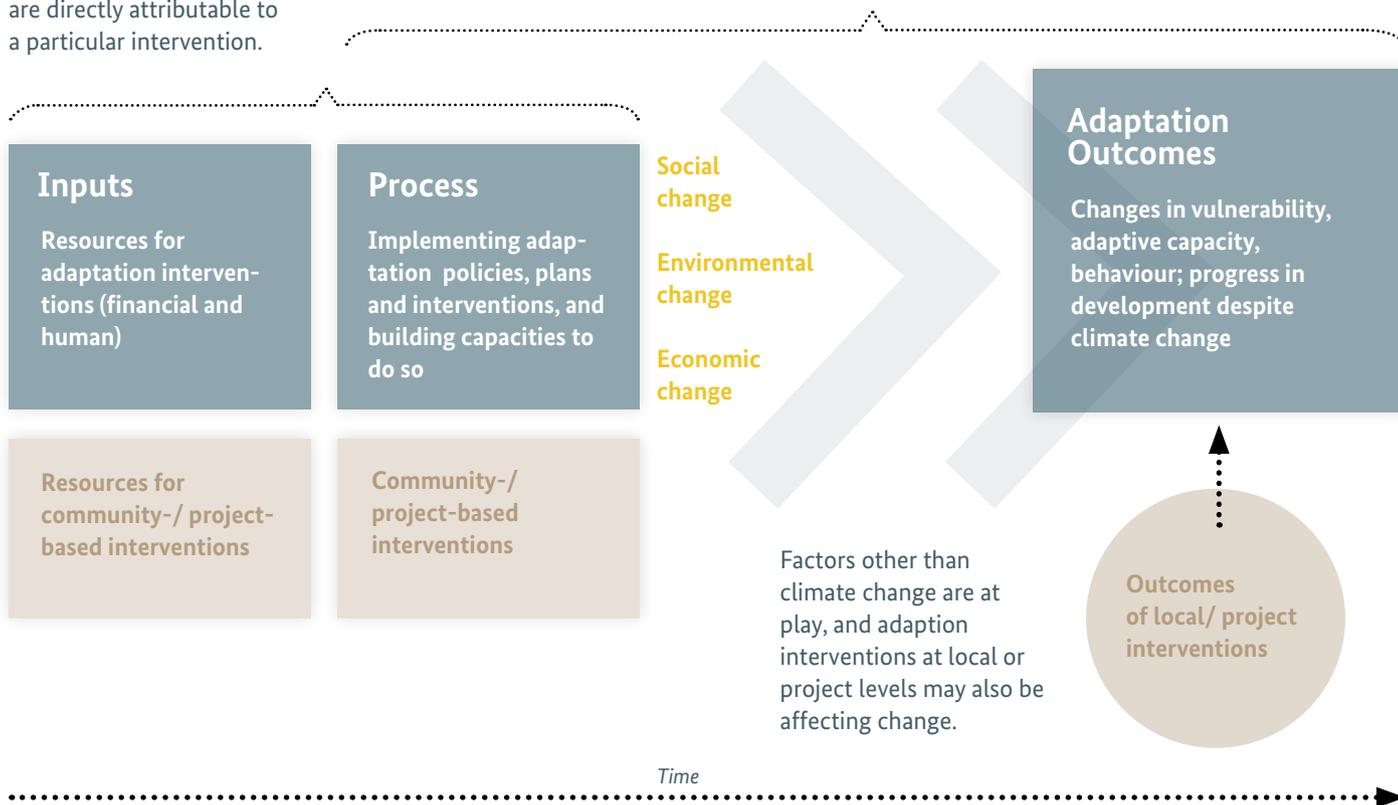
Figure 3:
M&E of adaptation
process and outcomes

Attribution

Demonstrating that capacities are in place to implement a policy/plan, and progress in implementation, are directly attributable to a particular intervention.

Contribution

To demonstrate that implementation of policy/ intervention/institutional capacity building contributed to the outcome (even if other factors did, too).



Legend:



Rationale for national M&E of adaptation

While the involvement of multiple sectors and levels may contribute to complexity, these same factors also help to make the case for national M&E of adaptation: **Progress on adaptation may be linked with the priorities and policies of a range of actors at all levels.**

Using information generated through national M&E of adaptation strategically can help to build broader political support for adaptation (Price-Kelly & Hammill 2015). For example:

- ▶ Sustainable development strategies may be strengthened by incorporating adaptation considerations to promote climate-resilient outcomes. Information from adaptation M&E systems can show how action on adaptation is safeguarding and supporting development goals.
- ▶ Climate-sensitive sectors may incorporate adaptation considerations into their own strategies and plans, in which case M&E of adaptation could help to demonstrate progress and results in sectors that are often prioritised, such as agriculture, water, and infrastructure.

- ▶ Using M&E data to demonstrate the ability to achieve results on the ground can help building support for adaptation from taxpayers, constituents, and/or development partners.
- ▶ Governments may showcase results on the international stage, e.g. through National Communications to the Conference of the Parties to the UNFCCC (COP).

Development of national adaptation M&E systems is therefore becoming more prevalent, and will continue to do so in the context of the NAP process (-> Box 1). “Reporting, Monitoring, and Review” is one of the four key elements of the NAP process set out in the [NAP Technical Guidelines](#)⁴³ (which do not, however, provide details on how to conduct M&E). While this Guidebook does not focus exclusively on M&E of the NAP process, it addresses relevant issues and points readers to related sections of the NAP Technical Guidelines and other tools that have been designed for monitoring the NAP process.



BOX 1

The National Adaptation Plan (NAP) process

The NAP process was established by the Conference of the Parties (COP) to the UNFCCC under the Cancun Adaptation Framework in 2010. The objectives of the NAP process are:

- a) to reduce vulnerability to the impacts of climate change, by building adaptive capacity and resilience, and
- b) to facilitate integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes, and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate.

Structure of the Guidebook

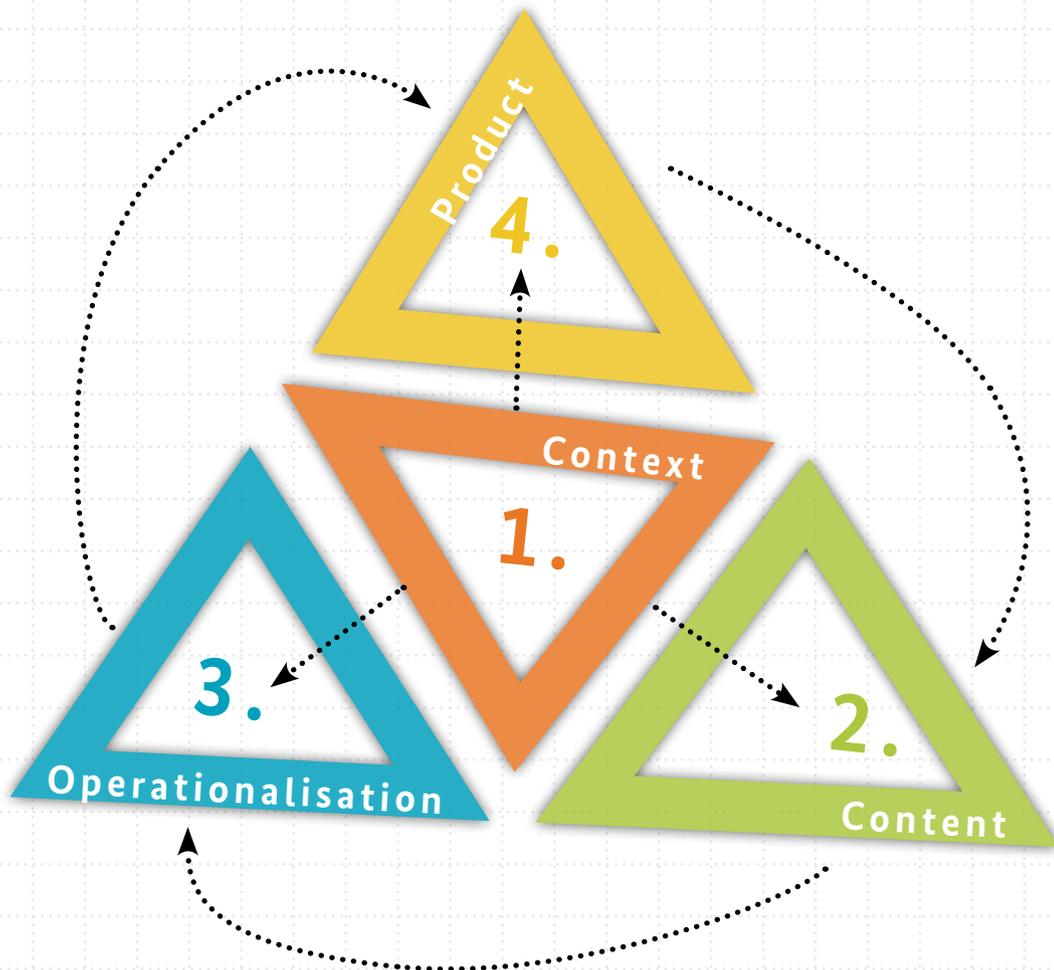
The objective of this Guidebook is to guide decision-making regarding the purpose, design, operationalisation, and use of results of an appropriate system for national M&E of adaptation. It provides advice for **M&E at both national and sub-national level(s)**—sub-national referring here to the level of a state or province or similar jurisdictions rather than more local municipal/community levels. Indeed it may be useful for any level where adaptation M&E is facing similar considerations and challenges.

Given its close linkages with the broader development and M&E context in a given country, **there is no one-size-fits all approach to national M&E of adaptation**: experience shows that decision-makers in different countries have chosen very different approaches depending on their specific contexts (Hammill & Dekens; EEA 2015). The Guidebook recognises this diversity by guiding the reader through **a series of questions for consideration** that should be taken into account when designing and implementing an adaptation M&E system.

The Guidebook **does not prescribe a single approach** to addressing any of these considerations, leaving it to the reader to select the appropriate course of action in his/her context.

Those **questions** are divided into **four interrelated “building blocks”** illustrated in Figure 4: Understanding the **context** of the M&E system, identifying the **content** to be monitored, designing a process for **operationalisation**, and deciding how to present results through **products** that will facilitate use. Each building block supports and relates to the others. Context is central to and informs the other pieces of the system. Products of the M&E system will in turn feed back into the context, building on or adding to existing M&E structures.

Figure 4:
Building blocks in the
development of the
M&E system



For each of these building blocks, the Guidebook provides:

 **Recommendations** to consider based on national adaptation M&E systems which have been developed to date (Hammill & Dekens 2014; EEA, 2015).

Concrete **examples** of different approaches taken by countries who have already developed or are in the process of developing adaptation M&E systems, along with links to full profiles of these systems where available.

Example Morocco

The case of Morocco's sub-national Regional Environmental Information System is included at each consideration to demonstrate an entire M&E development process for one country. This does not mean that Morocco's approach is the only valid one; examples of alternate approaches are also provided at each consideration point for further illustration.

A series of specific **questions for consideration**, answers to which will help to inform the process of developing and implementing a national adaptation M&E system.

Points on how these considerations relate to the NAP process are included throughout.

Reference to relevant **existing tools and resources** that can help to inform national M&E processes. If you are reading this Guidebook on your computer and are connected to the internet, the **hyperlinks**  will refer you directly to the relevant document; if you are reading the printed version, you can find that document in the list of references under the number  indicated.

Figure 5 illustrates the logic of the Guidebook's progression through the questions for consideration. You can use the "Questionnaire" in the Annex to make notes on responses and to check whether you have considered all relevant issues. However, the building blocks of an adaptation M&E system do not come together in a linear fashion (as illustrated in Figure 4), therefore multiple entry points are possible. An answer to one question may inform the answer to another, and many may need to be reconsidered at different stages, as mapped in Figure 6.



Figure 5:
Map through the
considerations in this
Guidebook

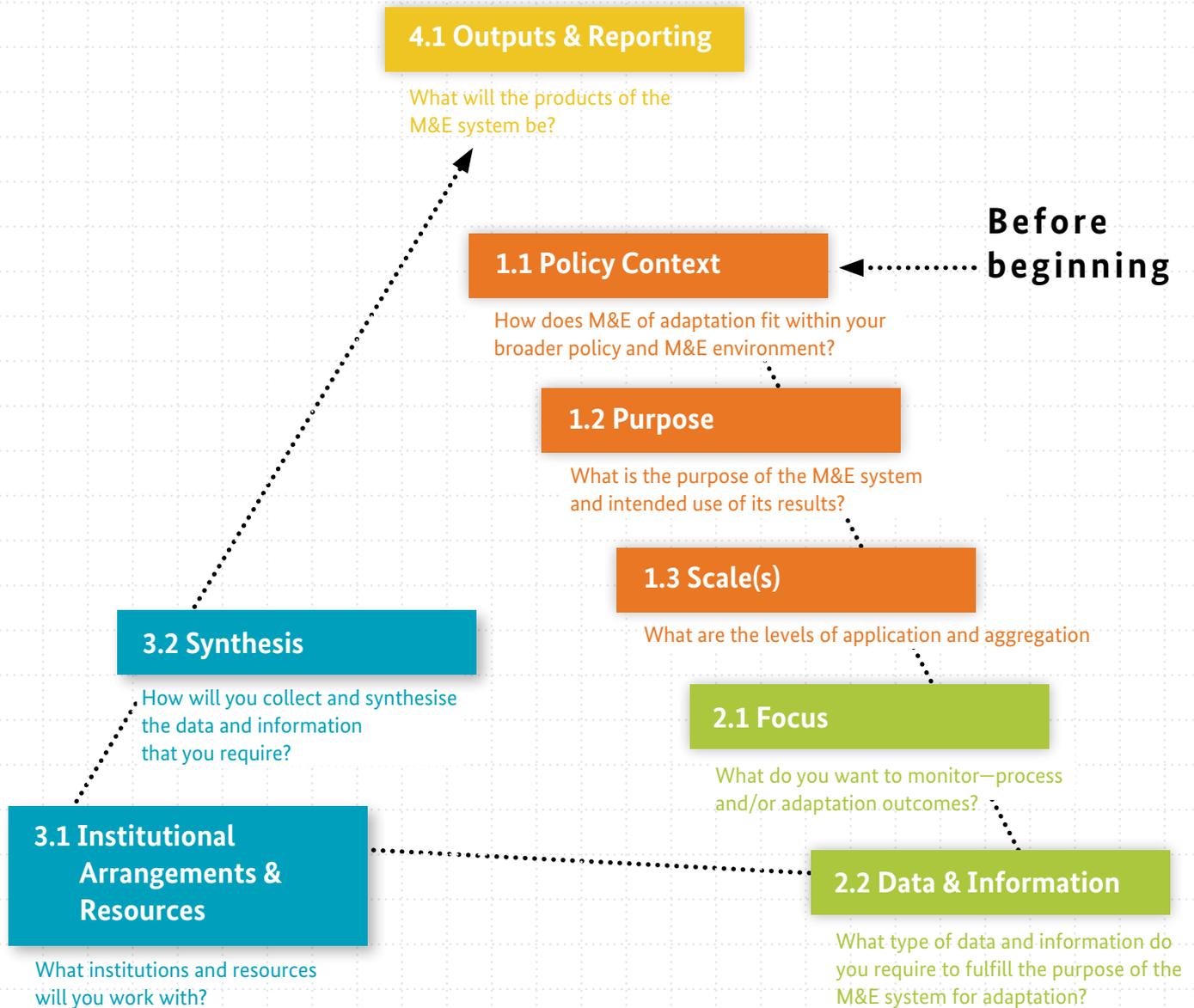
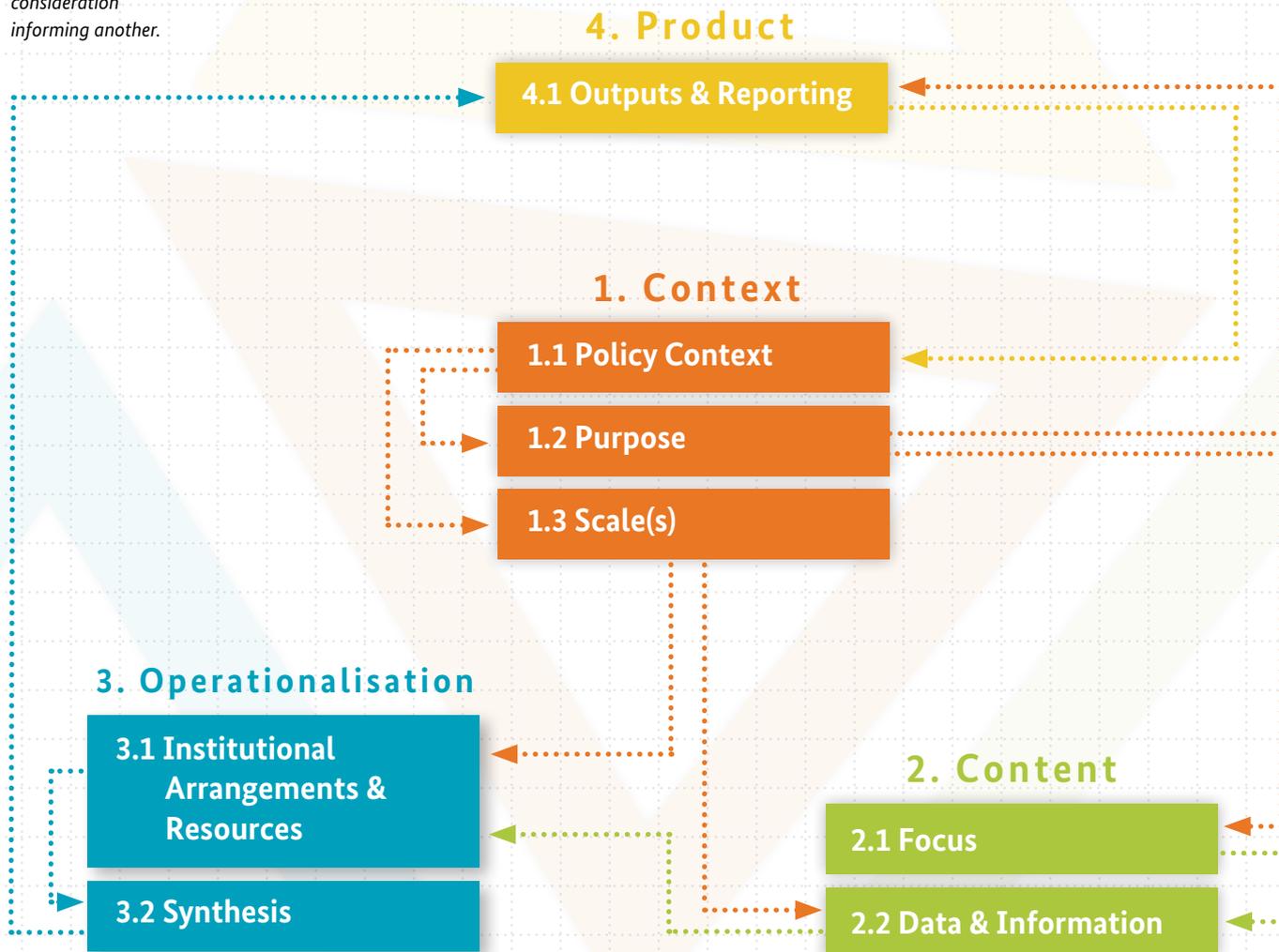


Figure 6:
Interlinkages among
considerations in the
Guidebook

Each arrow indicates a
consideration
informing another.





KEY CONSIDERATIONS: DEVELOPMENT OF NATIONAL ADAPTATION M&E SYSTEMS

Before beginning

Before beginning, determine **who will be leading or coordinating the development and implementation of the M&E system**, which **relevant stakeholders should be involved** in the development and implementation of the system, and who is going to use its results. This will help to ensure:

- ▶ relevance of the M&E system to the needs of decision-makers;
- ▶ integration with existing M&E systems and/or data sources;
- ▶ buy-in and feasibility of the M&E system.

While inclusiveness is important, consider the right balance between inclusiveness and efficiency in the

Invest in participation: Identify and consult with key institutions and stakeholders in the development of the M&E system for adaptation to help ensure ownership, commitment and engagement in its operationalisation.

Devote time to ensuring a common understanding of your adaptation context among these stakeholders.

BOX 2

Theory of change

A **theory of change** allows stakeholders to work backwards from determining which results an initiative aims to achieve and which assumptions can be made about how to achieve results, to identifying specific actions that should be taken. Using a theory of change normally involves a high degree of participation. By mapping how one step in implementing a policy/plan is expected to lead to results, a theory of change can help to estimate when different types of information may become available and where uncertainty may come into play. The theory of change should also account for factors outside of your control that might affect results.

For more information on theories of change, see:

- ▶ [Guidance Note: Theory of Change Approach to Climate Change Adaptation Planning](#)³ (Bours et al. 2014)
- ▶ [Introduction to Theory of Change](#)⁴² (video) (Tolmie 2014)

development process. In Germany,⁴¹ for example, the development of an M&E system involved 400 people in approximately 160 institutions, including scientists, academics, federal and state-level government representatives (Schönthaler et al., 2011). While this has helped to foster strong science-policy linkages and build awareness of adaptation issues, it has also meant that the development of the M&E system took nearly five years and required significant human resources. It is up to each country or entity to decide whether such an extensive process would be feasible, or whether the human and financial resources available call for a less time-consuming and resource-intensive approach, such as that taken in Morocco.⁴⁴

When to Start Thinking About M&E in the NAP Process

In the context of a NAP process, the NAP Technical Guidelines⁴³ indicate that monitoring should be considered when “Initiating and Launching the NAP process” (Element A, Step A1).

It is important to ensure that all those involved in the development of the adaptation M&E system have a common understanding of the adaptation context. This includes arriving at a shared vision of the adaptation results you are trying to achieve and the steps required to achieve them. The lead/coordinating institution may hold initial consultations, provide stakeholders with background information about the rationale for developing the M&E system, and/or offer training or other resources for those who have little experience working on adaptation. **A theory of change** (-> Box 2) is one tool that can be used in such a consultation process to determine the results the group hopes to achieve, identify assumptions about how to achieve them, and agree on appropriate actions. If there is a stand-alone adaptation policy or plan in place, it may already include an explanation of expected results and how the country or region aims to achieve them.

Answering the questions that follow should help you to design and implement a national adaptation M&E system that best fits your context. **You may choose different entry points** for addressing these considerations, but it is recommended to begin with developing an understanding of the context, as this is central to the M&E system and informs its other building blocks. Whilst working on any of the four building blocks, you should keep the others in mind as they are all interconnected.

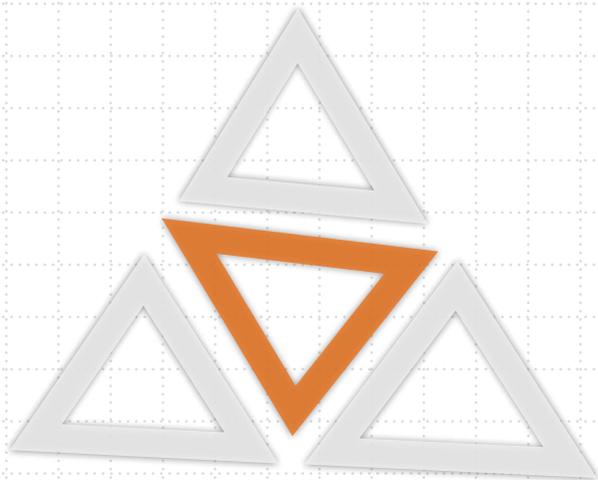
Morocco: Engagement in the Development of the M&E System for Adaptation

In Morocco,¹⁴ existing Regional Networks of Exchanging Environmental Information (RREIE) were involved in the development of the M&E system for each sub-national region. Each RREIE is composed of representatives from decentralised sectoral services affected by climate change and holding information relevant to M&E of adaptation. Such sectors include water, agriculture, forestry and tourism. Workshops were held in each of the two regions piloting the development and implementation of adaptation M&E systems—Souss Massa Drâa and Marrakech Tensift Al Haouz—early in the process of developing each M&E system to agree on a common vision for adaptation in the region and to understand the assumed cause-and-effect relationships between adaptation interventions and expected outcomes.

Sources: Hammill & Dekens 2014; Government of Morocco 2015



1. Context



- ✓ Ensure you have an understanding of how adaptation relates to the broader policy context, and be clear about the intended use of the information that the M&E system will generate.
- ✓ Align M&E of adaptation with decision-making processes, and consider how it might be integrated or linked with existing M&E structures to best serve the needs of targeted users.

Context refers to the policy framework of adaptation, the purpose of the M&E system, its level of application and aggregation, and to existing structures for M&E or data collection that may be drawn upon.

1.1 Policy context

How does M&E of adaptation fit within the broader policy and M&E environment?

The broader policy context as it relates to adaptation and sustainable development frames and informs the development of suitable adaptation M&E systems. Specific climate change plans or policies addressing adaptation and/or mitigation may be in place and may include a mandate for M&E. For example, the [South African National Climate Change Response Strategy](#)²² mandates the development of an M&E system (Government of South Africa 2011).

A government may **mandate** M&E of adaptation even in the absence of a stand-alone adaptation policy. This was the case at the level of sub-national administrations in Morocco; see below for further details. Given that adaptation considerations may be integrated into policies and planning across different sectors and levels, sectors and other levels of government may already undertake and/or track adaptation-related considerations and actions.

In some cases, it may be possible to **integrate or link M&E of adaptation with existing M&E systems**. Getting an overview of the M&E systems that already exist at the national, sub-national, and sector levels will help you



avoid duplication of efforts. Responding to the policy context in as many ways as possible may imply that M&E of adaptation occurs through multiple systems. In Mexico,¹³ for example, M&E of adaptation will feed into an M&E system at the national level, while states are also starting to monitor and evaluate adaptation at the sub-national levels—it remains to be seen how these systems will be linked (Hammill & Dekens 2014).

Mandate for M&E of Adaptation in the NAP Process

According to the NAP Technical Guidelines,⁴³ the mandate for a NAP process may take different forms (Element A, Step A.1.C)—this might include a proposal or overall vision for a NAP, a national policy, or on-going activities that lay the groundwork. M&E of adaptation is one possible element of the mandate for a NAP process.

1.2 Purpose

What is the purpose of the M&E system and how do you intend results to be used?

Purpose is at the core of the M&E system: It is important to agree on a clear definition of the purpose and on the intended use of M&E results early in the development of the M&E system. Keep this in mind throughout the process of development and operationalisation.

Policy and M&E Context in Morocco

During the development of its climate change policy, in 2010 the Government of Morocco⁴⁴ initiated a process of decentralising environmental policy and planning with the launch of the Environmental Charta. Since then, Regional Observatories on Environmental and Sustainable Development (OREDDs) have been established in each of Morocco's sub-national administrative regions. The OREDDs are responsible for the Regional Environmental Information System (SIRE), where environmental information and information on adaptation is being produced and disseminated. Although there is currently no regional-level adaptation planning approach in place, by 2014 two of Morocco's regions had operationalised M&E systems for adaptation. In its Intended Nationally Determined Contribution (INDC) submitted to the UNFCCC in 2015, Morocco expressed its intention to developing similar adaptation M&E systems in other regions of the country in the medium-term. Development is already under way in a third region, Tadra-Azilal. A new Moroccan national law on the right for general information access is also supportive of the development of the M&E system, facilitating data availability.

Sources: Hammill & Dekens 2014; Government of Morocco 2015



National systems for M&E of adaptation address one or more of the following **general purposes**:

- ▶ **learning**: producing knowledge about the evolving adaptation context, needs, and experiences;
- ▶ **accountability**: reporting to stakeholders on progress and/or results;
- ▶ **adaptive management**: checking whether a policy, plan, or intervention is on track and adjusting the course of action accordingly.

Most M&E systems aim to fulfill more than one of these general purposes to varying degrees, as illustrated through examples in Figure 7. Where would the system you are developing fall on the triangle in Figure 7?

Some countries use adaptation M&E systems to report to international development partners, including multilateral adaptation funds such as the GEF or CIF and/or bilateral development partners. In these cases, **alignment** of national systems and reporting requirements of development partners can improve the efficiency of reporting. International principles on effective development cooperation under the Busan Partnership for Effective Development Cooperation urge the use of these existing results platforms and coordination mechanisms to assess performance (Fourth High-Level Forum on Aid Effectiveness 2011). Integrating adaptation into existing M&E systems may therefore be considered.

Clarify the intended use of the M&E system and how it meets the M&E purpose. Identify target users and ask yourself: What specifically do you expect them to

do with M&E findings to meet the purposes you have identified? **Target users** may consist of decision-makers or technical advisors working on adaptation issues, development planning, and/or in climate-sensitive sectors. Table 1 provides examples of specific ways in which results might be used to meet learning, adaptive management, and/or accountability purposes.

Purpose(s) of M&E of Adaptation in the NAP Process

Monitoring a NAP process would include adaptive management, i.e. reviewing progress in implementation to inform regular updates. Another use of results of monitoring a NAP process suggested in the [NAP Technical Guidelines](#)⁴³ is exchanging information and updating the COP through National Communications (Element D, Steps D1 & D4). Given that NAP processes and related M&E systems may vary greatly from country to country, the M&E system may also support other purposes.

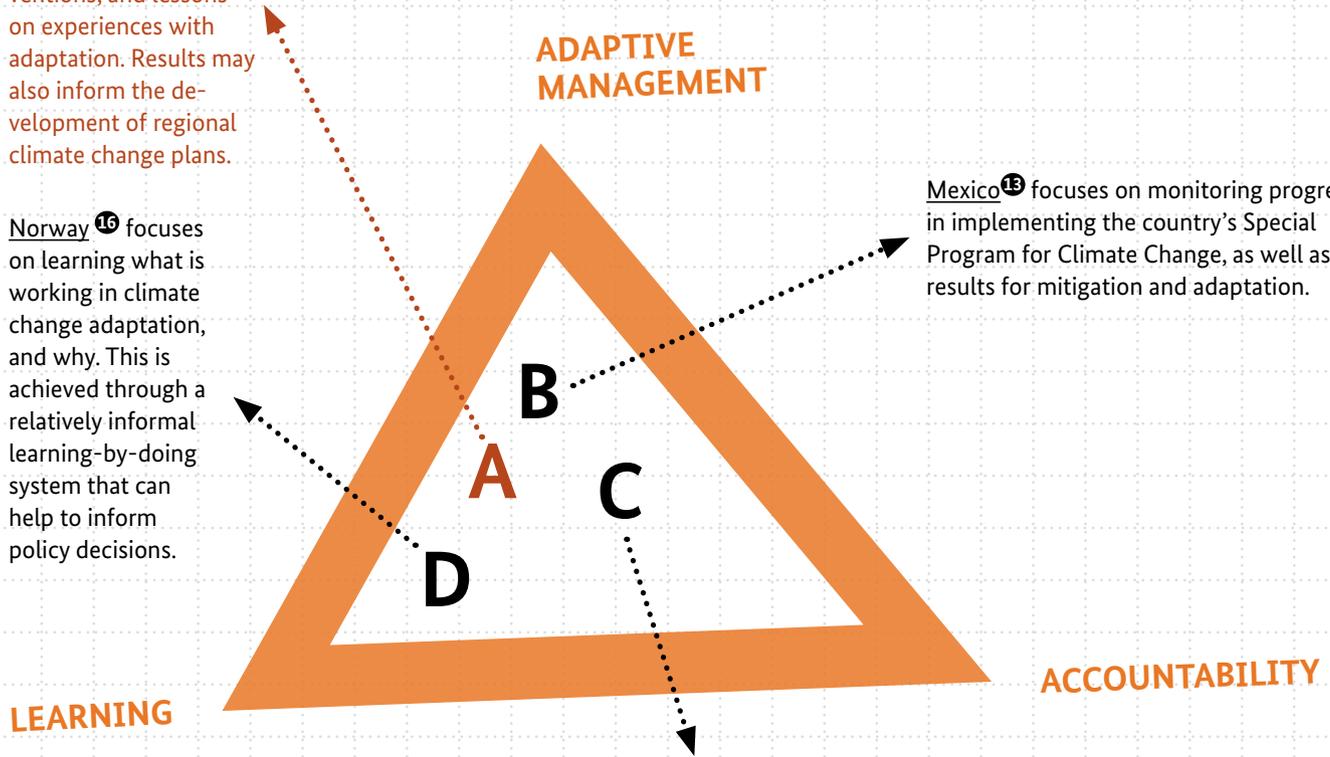


Figure 7:
Mapping purposes of
M&E systems

Morocco's¹⁴ SIRE  monitors changes in vulnerability in key sectors, the status of implementing interventions, and lessons on experiences with adaptation. Results may also inform the development of regional climate change plans.

Norway¹⁶ focuses on learning what is working in climate change adaptation, and why. This is achieved through a relatively informal learning-by-doing system that can help to inform policy decisions.

Mexico¹⁵ focuses on monitoring progress in implementing the country's Special Program for Climate Change, as well as its results for mitigation and adaptation.

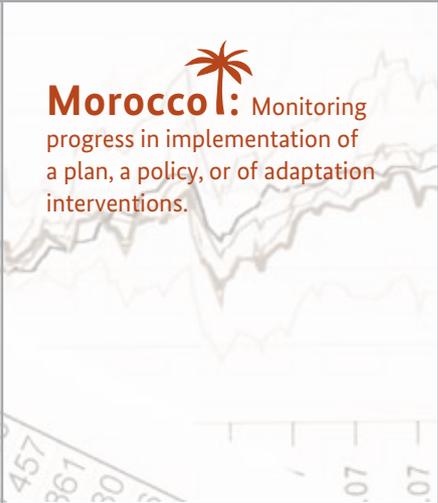


Nepal¹⁵ includes monitoring of progress, achievement, and lessons learned. Data also informs reporting to the government's Climate Change Program Coordination Committee and development partners.

*Country examples based on
Hamill & Dekens 2014.*

Table 1:

Examples of using M&E findings

LEARNING	ADAPTIVE MANAGEMENT	ACCOUNTABILITY
 <p>Morocco: Understanding which adaptation needs are sufficiently addressed and where additional efforts are required, for example through repeated vulnerability assessments.</p>	 <p>Morocco: Monitoring progress in implementation of a plan, a policy, or of adaptation interventions.</p>	<p>Demonstrating good use of taxpayers' funds and fulfillment of promises made through plans and policies.</p> <p><i>Updating the COP on progress, for example through National Communications.</i></p>
 <p>Morocco: Acquiring and systematising information on adaptation experience that may inform future initiatives. In <u>Morocco</u>,¹⁴ regions are developing an inventory of adaptation actions that may inform the development of a future climate change plan.</p>	<p><i>Using results to modify/improve policies and plans already under way.</i></p>	<p>Demonstrating to development partners/funders the ability to achieve results on the ground.</p>
<p>Using improved understanding of how and why adaptation has worked to inform policy- and decision-making.</p>		

Sources: Hammill & Dekens 2014; UNFCCC 2012



1.3 Scale(s):

What are the levels of application and aggregation?

Identifying the levels of **application** and **aggregation** will help you define the scope of the M&E system and ensure that all relevant stakeholders are involved in its development and implementation.

The **level of application** of the M&E system refers to the level at which results are expected to appear, e.g. at national, sub-national, or local level. The level of application may be specified in the mandate to develop the M&E system. In the context of this Guidebook, the level of application would be either the national level or a sub-national level (such as a state in a federal system, or a regional administration as in Morocco).

As described in the introduction to this Guidebook, national systems for M&E of adaptation often collect data from a number of units, namely sectors and more local

levels. These are the **levels of aggregation**. An M&E system may aggregate:

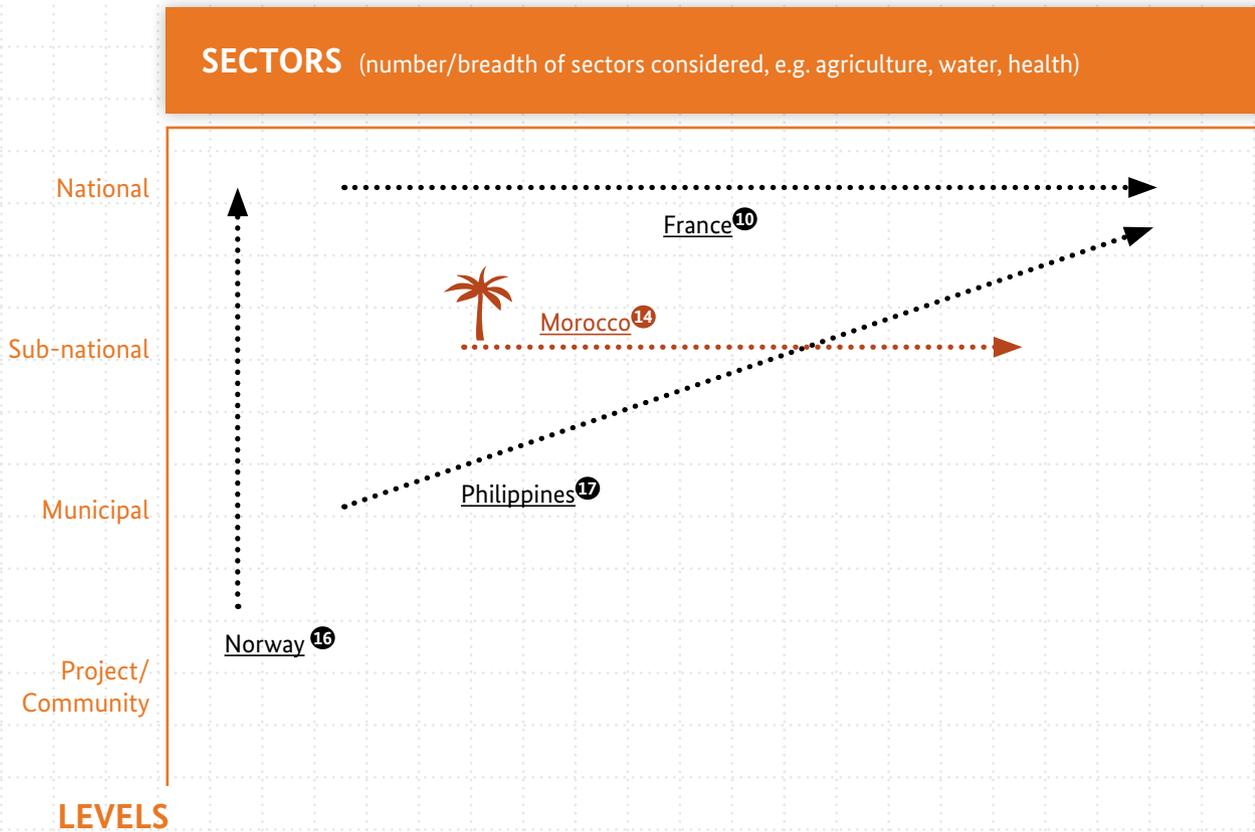
- ▶ **Horizontally, across thematic areas and sectors.** Priority sectors might be identified in a policy or plan, in National Communications to the UNFCCC, and/or in sectoral assessments or evaluations. If priority sectors have not yet been identified through these channels, a vulnerability assessment can help to identify them. (For more on how to conduct vulnerability assessments see [Fritzsche et al. 2014](#))⁷
- ▶ **Vertically, across geographic scales.** This is necessary where a system needs to take into account data that exists at more local scales, for example from municipal governments, communities, or adaptation projects. Vertical aggregation may involve linking with M&E of adaptation at the sub-national, community, and/or project level. (For information on how to address vertical integration see consideration 3.2.)

Note that aggregation is not restricted to quantitative analysis but can also refer to **synthesising** qualitative results (see consideration 3.2). Figure 8 illustrates and explains how a few countries are using horizontal and/or vertical aggregation in their adaptation M&E systems.

Integration and Aggregation in the NAP Process

The NAP process emphasises the need to integrate climate change adaptation into all relevant sectors and levels of government (i.e.: both horizontally and vertically) (Element A, Step A4.A). Therefore, while an M&E system that includes monitoring a NAP process may apply at the national level and be coordinated by a national entity, it will likely need to aggregate information from different sectors and/or scales.

Figure 8:
Horizontal and vertical
aggregation





VERTICAL

Norway¹⁶ conducts national vulnerability and adaptation assessments at the country level, which aggregate activities and experiences conducted through municipal projects, planning processes, and dialogues.

HORIZONTAL

France's¹⁰ M&E system for its National Adaptation Plan aggregates data from across 20 sectors involved in implementation. Each relevant ministry has a focal point/sectoral leader responsible for reporting on measures.

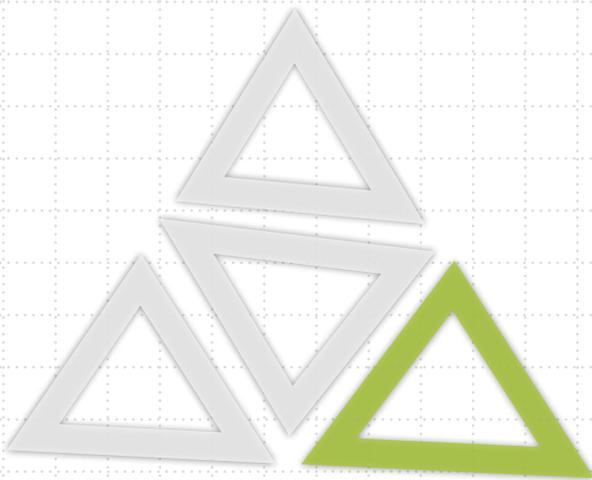
BOTH

The Philippines¹⁷ is developing a standard system of indicators to facilitate communication, comparison, and decision-making across key thematic areas and related sectors (horizontally), as well as across geographic scales, involving local levels of government in data collection and reporting (vertically).

Morocco's¹⁴ M&E system operates at the sub-national regional level, and in the pilot phase, draws on existing data from select sectors identified as most vulnerable in each region. These include: water, agriculture, tourism and biodiversity/forests.



2. Content



- ✓ *Be aware of and negotiate potential trade-offs between simplicity and detailed understanding.*
- ✓ *Be realistic about the data and information that can feasibly be collected to inform the M&E system: Consider what data is already available. Limit and contextualise indicators and link them to a theory of change.*
- ✓ *Where possible, foster science-policy linkages in the development of the indicators and data collection system.*

Content refers to the design of the system for M&E of adaptation, and the data and information required.

2.1 Focus:

What do you want to monitor?

As illustrated in Figure 3, national M&E of adaptation may focus on process and/or adaptation outcomes. Most M&E systems reviewed to date take a **hybrid** approach, considering focus on both process and outcomes.

The focus of the adaptation M&E system is related to its general purpose(s). A focus on **process** refers to monitoring advancement in implementing policies, plans and/or interventions that address climate change adaptation, and/or institutional capacity to do so. Process monitoring

can help to inform any of the three general purposes outlined under consideration 1.1. In particular, it is essential to support adaptive management, which requires checking that a policy, plan or intervention is on track. A focus on process monitoring can also inform accountability of short-term results, demonstrating that action has been taken.

A focus on **adaptation outcomes** refers to assessing changes that result from the



implementation of adaptation policies/actions. It is important to recognise that these outcomes may also be affected by other factors, as illustrated in Figure 3. This may include assessing changes in vulnerability, changes in overall well-being, and/or increased adaptive capacity. M&E for learning purposes seeks to understand how change takes place. M&E of adaptation outcomes may also serve accountability purposes if the policy or process being monitored can be explained to have **contributed** to the outcome (-> Figure 3), and if there is time for adaptation outcomes to materialise before an accountability-report is due.

An array of frameworks have been developed to understand and monitor one or both of these areas of focus. Table 2 provides an **overview of frameworks that are especially relevant for national M&E of adaptation**—some focus specifically on monitoring process (including NAP processes), some focus on adaptation outcomes, and others take a hybrid approach. Note that using these frameworks is not a requirement, but they may provide useful guidance.

You may also wish to consider whether frameworks that have been developed for M&E of adaptation at other levels could be useful. A wider array of frameworks addressing these levels are available—the Adaptation M&E Navigator (GIZ 2015)²⁰ can help you determine which of these may be useful for your purposes. Section 2.5 of UNEP’s PROVIA Guidance on Assessing Vulnerability, Impacts and Adaptation to Climate Change²⁵ (Hinkel et al. 2013) also provides a helpful overview of available tools and approaches.

Focus of M&E of Adaptation in the NAP Process

Given that adaptive management is one purpose of M&E of adaptation as described in the NAP Technical Guidelines,¹⁵ there should be some focus on process. This will support monitoring advancements in implementation of the NAP process, and using results to determine whether any adjustments should be made on an ongoing basis. M&E of outcomes of a NAP process can also help to assess its effectiveness in achieving desired results for constituents. For example, the Technical Guidelines suggest that the effectiveness of the NAP process be measured based on how well it reduces vulnerability—i.e. adaptation outcomes (Element D, Step D.2.A).

Table 2:

Existing frameworks for national M&E of adaptation

PROCESS

Stocktaking for National Adaptation Planning (SNAP) Tool

The SNAP tool guides a country through a self-assessment of its capacities to undertake a NAP process based on seven success factors: climate information, human and institutional factors, long term vision and mandate, implementation, mainstreaming, participation, and M&E. The tool is intended for use at the outset of a NAP process (Element A, Laying the Ground Work), but reassessments later in the process can help to monitor progress—radar charts can be used to illustrate the status quo, target, and progress on each of the seven success factors at any given point in time. The SNAP tool is typically administered through a two-day workshop.

Read more from GIZ: [Fact Sheet on the SNAP Tool](#)⁹ (GIZ 2014)

Tool for monitoring Progress, Effectiveness, and Gaps (PEG) under the NAP process

This tool helps to assess whether a country is fulfilling the essential functions of the NAP process. It does so by identifying expected outcomes of each essential function, as well as specifying indicators that could be used to assess whether progress is being made.

Read more from the LEG: [Presentation on the PEG Tool](#)²⁷ (LEG 2015)

Skills Assessment for National Adaptation Planning: How Countries can Identify the Gap

This resource provides a framework for assessing the skills base—i.e. capacity—that a country requires to design and implement a NAP process. It does so by providing guidance on how to gather, organise, and interpret data on institutional and individual capacities for adaptation planning. So far the framework is intended for use at the outset of the NAP process, but the metrics included also have the potential to be useful for tracking capacity building over time.

Read more from the NAP Global Support Program (NAP-GSP): [Skills Assessment for National Adaptation Planning](#)²⁸ (MacKay et al. 2015)

Pilot Program for Climate Resilience (PPCR) Monitoring and Reporting Toolkit

This toolkit explains and provides tools for monitoring five core adaptation indicators demonstrating a country's progress in integrating adaptation considerations into development planning. Two of these indicators—"degree of integration of climate change in national, including sector planning" and "evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience"—monitor progress at the national level. Three other indicators monitor progress at the project or program level; these are then aggregated to provide an indication of the country's overall progress.

Read more from the Climate Investment Fund: [PPCR Monitoring and Reporting Toolkit](#)³⁴ (PPCR 2015)





OUTCOMES

The Vulnerability Sourcebook

This resource provides a standardised approach to and step-by-step guidance for conducting vulnerability assessments. Conducting multiple assessments at different points in time can help to assess changes in vulnerability. If you can demonstrate that the process or intervention you are monitoring contributed to this change in vulnerability, this can be considered an outcome (-> figure 2).

Read more from GIZ: [The Vulnerability Sourcebook](#)⁷ (Fritzsche et al. 2015)

Impact Evaluation of Adaptation Interventions

Impact evaluation can be used to look at the extent to which it is possible to attribute adaptation outcome(s) to a particular adaptation policy, plan, or intervention. As illustrated in -> Figure 2, a number of intervening factors may also have contributed to a given outcome. Therefore, impact evaluation looks at how the situation would have developed if the intervention had not taken place, for example by comparing beneficiaries to a similar group not targeted by the intervention.

Read more from GIZ: [Impact Evaluation Guidebook for Climate Change Adaptation](#)⁴⁰ (Silvestrini et al. 2015)

HYBRID

The Tracking Adaptation and Measuring Development (TAMD) approach

The TAMD approach measures adaptation along two interrelated tracks: Track 1, “Climate Risk Management (CRM)”, focuses on monitoring process: it looks at institutions, policies, and capacities in place to manage climate risks. Track 2, “Adaptation Performance”, focuses on outcomes: it looks at whether CRM (process) is leading to improved adaptive capacities of a constituent population, and subsequently to improved human well-being. The TAMD framework includes indicators along both of these tracks and stipulates the development of a theory of change to illustrate the relationship between them. (For more information on indicators and theories of change see consideration 2.2.)

Read more from the International Institute for Environment and Development (IIED): [TAMD: A manual for national governments](#)³⁷ (Rai et al. 2015)

The Making Adaptation Count framework

“Making adaptation count” proposes a six step framework to developing a system for M&E of adaptation interventions, based on a theory of change. Addressing both process and outcome monitoring, the framework can be applied at different levels. The Climate Change Commission of the Philippines modified it to the national context and used it to guide the development of its national adaptation M&E system.

Read more from WRI & GIZ: [Making adaptation count](#)⁴¹ (Spearman & McGray 2011). Read more about the [experience of the Philippines](#)¹⁷ in applying the framework (Hammill & Dekens 2014).

Focus of Morocco's Regional M&E Systems

Morocco's¹⁴ regional M&E systems take a hybrid approach, including focus on monitoring:

- ▶ process, by tracking adaptation measures, and
- ▶ outcomes, by measuring the impacts of adaptation interventions and assessing changes in vulnerability at the regional level.

Morocco used the impact chains of the vulnerability sourcebook as foundation for their M&E approach which is tailored to existing institutional structures and procedures.

Source: Hammill & Dekens 2014

Some countries are adapting these frameworks for their specific context, using them to varying degrees in conjunction with existing M&E and data collection systems. Nepal¹⁵ for example is using the PPCR approach to collect project- and programme-level data to feed into its broader national system for M&E of adaptation, while also revising national development indicators to include some adaptation indicators (Hammill & Dekens 2014). The country is using household surveys to measure progress towards implementation of Local Adaptation Plans of Action and an Environment Friendly Local Governance framework to monitor adaptation actions at the sub-national level.

2.2 Data and information requirements

What type of data and information do you require to fulfill the purpose of the M&E system?

Data refers to a collection of numbers or characters. Information refers to data that has been compiled or organised to provide meaning. The purpose, scale(s) and focus of the adaptation M&E system will help to identify the data and information that the M&E system should collect. Engaging the scientific and research community in this task can facilitate science-policy linkages and provide assurance that what you plan to collect will be suitable for the intended use.

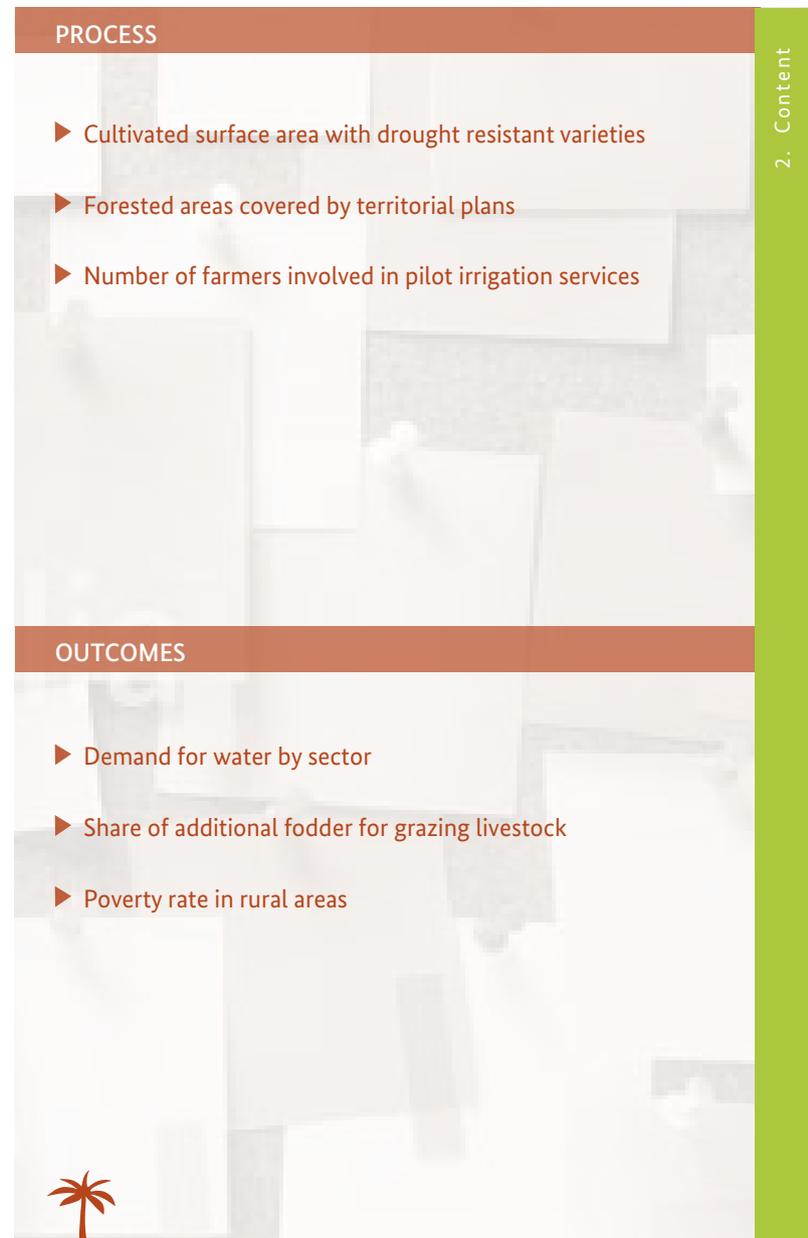
Rather than defining indicators upfront, systems where the purpose is strongly oriented towards **learning** may allow flexibility in the specific data and information to



Selected indicators being used in Morocco's regions

Process of Indicator Selection in Morocco

Morocco's¹⁴ regional adaptation M&E systems are indicator-based. Indicators were selected through multi-stakeholder dialogues with OREDDs and representatives of sectoral services. This included a process of prioritising indicators: only those indicators for which data is already available from existing data sources are being used in the initial pilot phase of the M&E system to ensure feasibility and data availability; other indicators remain on a "B list" that may be monitored in the future if feasible. Indicators track changes in vulnerability, adaptation measures, and adaptation outcomes, including indicators that address gender considerations, in line with the purposes and foci of the system. For each priority sector being monitored in the region, a climate change impact and vulnerability chain (much like a theory of change) was developed to map the linkages between these different indicators. See [Royaume du Maroc & GIZ \(2014\)](#)³⁸ for a visualisation of these impact and vulnerability chains.



Sources: Jaouhari 2014; Hammill et al. 2014

be collected as new experiences or problems arise over time. Norway¹⁶ is an example of a country taking a learning-by-doing approach, gathering data and information that emerge through implementation of adaptation interventions at various levels (Hammill & Dekens 2014). (For more on approaches to capture this type of data in order to support learning purposes see consideration 3.2.)

Most systems—nine out of the ten reviewed by Hammill & Dekens (2014)—use indicators to define what to measure. An **indicator** is a measurable characteristic or variable which helps to describe an existing situation and to track changes or trends – i.e. progress – over a period of time. Different indicators can be used to monitor process and/or outcomes, as the examples from Morocco indicate.

When selecting indicators you should take into account the following key points (Hammill et al., 2014):

- ▶ **Focus:** Are you trying to track progress in implementing adaptation actions/strategies (i.e.: process)? Or the results of these actions/strategies (i.e.: outcomes)? Or both? The frameworks outlined in Table 2 include examples of indicators that can be used to track each of these areas of focus. Further guidance on and examples of indicators are provided at the end of this section. (See also the Moroccan example on the previous page.)
- ▶ **Relevance to the context:** A theory of change (-> Box 2) is one tool that can help to determine relevance. What does the indicator say about the actions

or changes that you are trying to monitor? Will this data support the intended use of results?

- ▶ **Time and resources needed to collect the data:** If an indicator is too difficult or resource-intensive to track, it may not be feasible to apply. Similarly, attempting to track too many indicators may make operationalisation difficult and/or resource-intensive (see also consideration 3.1). A process of prioritisation, such as the one that took place in Morocco,¹⁴ or Germany³⁹ is generally required to identify the indicators that stakeholders consider to be essential to meeting the purposes of the M&E system.
- ▶ **Availability of data through existing data sources/ M&E systems:** Considering what data is already available can help to avoid duplication of efforts and to ensure that the M&E of adaptation is well aligned with the broader M&E and policy context. It can also help to assess the relative ease of attaining the data, and thereby may contribute to prioritisation of indicators. For example, sectors may already be conducting M&E that could feed into the system, and/or data may be available from a national statistics bureau. In Kenya,¹² development of the M&E system included mapping of relevant existing data sources that could be used to monitor adaptation (-> Table 3) (OECD 2015).

After selecting indicators, consider how you will establish a **baseline**—i.e. the starting point with which you will compare indicator data collected over time. For some process-focused indicators, such as “number of farmers



Table 3:
Example of mapping of existing data sources in Kenya

DATA SOURCE	RELEVANT SECTOR	DESCRIPTION OF DATA
Kenya Meteorological Department	All	Climatic data (from upper air and rainfall stations, marine tidal gauges, etc.).
	Agriculture	Agro-meteorological stations collect data on climate & surrounding farms.
Kenya Agricultural Research Institute	Agriculture Livestock	Data on food, horticultural and industrial crops, animal production, animal health, soil fertility, vegetation, agroforestry, and irrigation. In future, data on household vulnerability and performance of various crops under changing climatic conditions will be collected.
Department of Resource Surveys and Remote Sensing	Forestry Wildlife Agriculture Livestock	Data on livestock/wildlife numbers and distribution, vegetation cover, forests, species composition, biofuel, biomass, crops, land degradation, and human settlements.
Water Resources Management Authority	Water	Data on flow volumes at river gauging stations; from hydro meteorological weather stations.
Kenya Forest Service	Forestry	National-level statistics on forestry, forest cover, land use change, timber and fuelwood consumption.
National Environment Management Authority	Water	Data on water quality.
Kenya National Bureau of Statistics	All	Socio-economic data.
Ministry of State for Planning, National Development	All sub-sectors	Medium-term plan reports contain data on all sub-sectors.
Monitoring and Evaluation Directorate	All	Process-based indicators on expenditure on adaptation and related activities.

Source: Adapted from OECD 2015 & Ministry of Environment and Mineral Resources, Kenya 2012

BOX 3

Addressing gender through M&E of adaptation

In addition to collecting data and information from different sectors and geographic scales, depending on a government's priorities, there may be an interest in looking at how policies and plans are addressing the **needs and opportunities of specific vulnerable groups**. Women, for example, may face different adaptation challenges or cope differently with climate change impacts due to social factors. [Vincent et al. \(2010\)⁴⁵](#) elaborate on the specific challenges and opportunities that women face under climate change. This publication also looks at how information about women's vulnerability and adaptation options can be collected at local and project levels.

Many indicators may also be disaggregated to assess the relative focus and/or outcomes of adaptation interventions on vulnerable groups. The indicators included in the examples and guidelines on indicators listed above include examples of disaggregating data by gender, region, rural/urban, and other sub-groups.

involved in pilot irrigation services”, this might be zero at the outset of an intervention. For outcome indicators like “poverty rate in rural areas”, a comparison point would be necessary. For more guidance on establishing base-lines, see [Spearman & McGray \(2011, p. 43\)⁴¹](#).

The following resources provide examples of indicators that have been used for national M&E of adaptation, and further guidance on selecting indicators:

- ▶ [Repository of adaptation indicators²⁴](#) (Hammill et al. 2014): Based on a review of ten countries' national systems for M&E of adaptation, it provides examples of indicators, sorted by their focus, and by sectors.
- ▶ [Selecting indicators for climate change adaptation programming²](#) (Bours et al. 2014): This guidance note provides information on selecting indicators and understanding how they can come together to provide a well-rounded picture of an adaptation intervention.
- ▶ [Good Practice in Designing and Implementing National Monitoring Systems for Adaptation to Climate Change³²](#) (Naswa et al. 2015): Provides examples and best practices for developing adaptation indicators based on recent experiences in Latin American countries.
- ▶ [Good Practice Study on Principles for Indicator Development, Selection, and Use in Climate Change Adaptation Monitoring and Evaluation⁴⁴](#) (Viggh et al. 2015): Provides guidance on the development of indicators for different purposes, and how indicators have previously been used within existing frameworks for



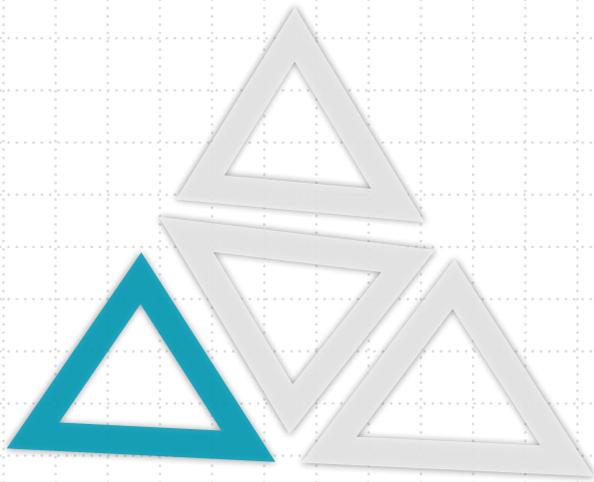
M&E of adaptation. In particular, Section 5 provides an overview of different sets of criteria that can be used to select indicators.

- ▶ Climate resilient development index: theoretical framework, selection criteria and fit-for-purpose indicators⁴¹ (Miola et al. 2015): Provides a framework for selecting indicators that will capture data on natural hazards, exposure to climate change impacts, vulnerability, adaptive capacity, and development dimensions of climate change. Annex III of the report includes a repository of examples of indicators that can be used for each dimension.

Data and Information for M&E in the NAP Process

*According to the NAP Technical Guidelines*⁴³ (Element D, Step D.2.A) drawing on research addressing the latest science and other assessments of the outcomes of adaptation activities will help to assess the effectiveness of a NAP process. The frameworks for monitoring NAP processes in Table 2 provide other examples of the types of data and information requirements for M&E of a NAP process.

3. Operationalisation



✓ Do not worry about starting modestly and progressing incrementally—overcommitting resources, whether human or financial—may diminish the feasibility of operationalising the M&E system.

✓ Foster science-policy linkages throughout the operationalisation of the M&E system—for example, the scientific and research community may be able to play a role in quality assurance of information collected through the adaptation M&E system.

Operationalisation refers to the institutions charged with overseeing M&E of adaptation and the steps and process involved in gathering and synthesising the necessary information.

3.1 Institutional arrangements and resources

What institutions and resources will you work with?

Refer back to the levels of application and aggregation (-> consideration 1.3) and the engagement process initiated. What role will institutions and actors involved in the operationalisation of the adaptation M&E system need to play, and what resources will they require to do so?

The **lead/coordinating** institution is commonly the ministry responsible for the environment and climate change

or a specifically appointed coordination body—in the Philippines,¹⁷ for example, the national Climate Change Commission plays this role (Hammill & Dekens 2014). Usually, an individual or team within this institution is in charge of the establishment of a national adaptation M&E system, which includes developing a governance framework and guidelines for its operation,



synthesising results and ensuring that the different institutions and actors involved are completing their tasks.

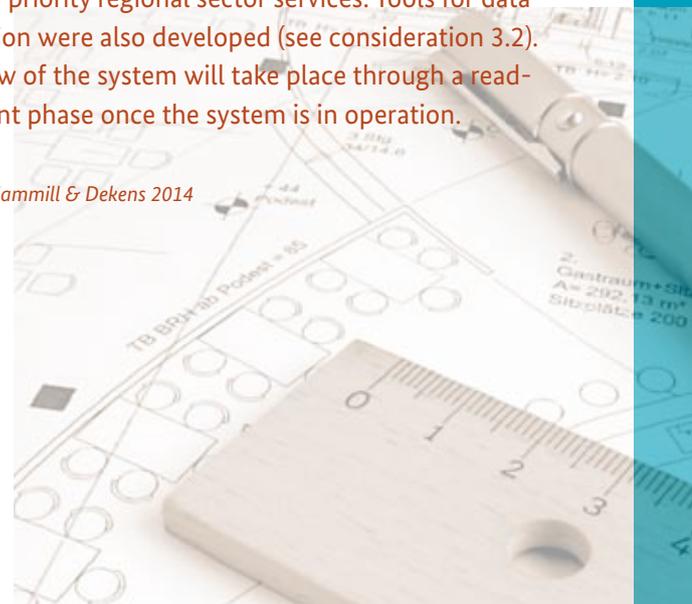
Teams or individuals in the sectors or levels of government from which data and information is being collected often have a role to play, too. These decision-makers and technical staff are also target users of the M&E results—which can motivate them to contribute accurately and timely. It is important to clearly **define and communicate the roles and responsibilities of each institution**. Doing so might include:

- ▶ providing background documents about the M&E system;
- ▶ determining who is responsible for contributing which piece of information;
- ▶ providing training on the M&E system to those actors involved (information on an adaptation M&E training offered by GIZ is [available online](#)⁸);
- ▶ developing and providing user-friendly tools to support data collection (see consideration 3.2);
- ▶ facilitating ongoing engagement for those involved in the M&E process and giving them opportunities to provide feedback on how the M&E system is working, for example through periodic consultations. This will allow you to identify any unforeseen challenges and adjust the system accordingly.

Morocco: Institutional Arrangements for M&E of Adaptation

In [Morocco](#),¹⁴ the Regional Observatories on Environment and Sustainable Development (OREDDs) are responsible for monitoring the state of the environment at the regional level, developing tools to support decision-making, and managing environmental information through the Regional Environmental Information System (SIRE). Integration of adaptation monitoring into the SIRE occurred through three stages in each of the pilot regions: conceptualisation, operationalisation, and readjustment. Conceptualisation included an assessment of the vulnerability of the region. Operationalisation included the selection of indicators in consultation with stakeholders including the OREDDs and representatives of priority regional sector services. Tools for data collection were also developed (see consideration 3.2). A review of the system will take place through a readjustment phase once the system is in operation.

Source: Hammill & Dekens 2014



Resources, both financial and human, are another important consideration. Look at the types of data and information you plan to collect and at the amount of time those involved in operationalising the M&E system would need to invest initially and on an ongoing basis. In consultation with stakeholders, it is important to make an honest assessment of whether the necessary resources are in fact available. Otherwise, you risk jeopardising the **feasibility** of the M&E system and its potential to fulfill its purpose.

Table 4 gives an overview of the resource-intensiveness of different M&E systems and of some contributing factors. Note that drawing on existing M&E and data collection systems does not guarantee low resource-intensiveness—if existing M&E structures are not functioning well, integration may actually diminish the system’s efficiency.

3.2 Synthesis

How will you collect and synthesise the data and information you require?

Refer back to the data and information required to meet the purposes of your M&E system (-> consideration 2.2), and to the institutions and resources that will be involved in its operationalisation. Determining and clearly communicating which method and steps for collecting and synthesising the required data and information are necessary will help you facilitate accuracy and efficiency.

Leiter (2015) suggests three practical approaches to conducting M&E of adaptation across scales—whether

vertically across different levels, or horizontally across sectors:

- ▶ Using **standardised (i.e. the same) metrics** at all scales feeding into the M&E system so that information can easily be aggregated. This is the approach being taken by the PPCR,¹⁹ as outlined in Table 2: all countries involved are asked to report on a core set of indicators that can then be aggregated to provide an overall assessment of the PPCR portfolio (PPCR 2015).
- ▶ Allowing actors at different scales to use **level-specific (i.e. different) metrics that address common themes** identified at the national level. This allows actors in different sectors or at different levels to collect data that is tailored to their needs, while ensuring the information produced will be easily aligned with the national system. Mexico¹⁹ is considering to use this approach in order to link already ongoing state level M&E of adaptation with a national system for M&E of adaptation (Leiter 2015).
- ▶ Focusing on **informal links or a synthesis** of available information. To fulfill the purpose of a strongly learning-oriented adaptation M&E system, standardised formats or tools may not be required, as demonstrated by Norway¹⁹ (Hammill & Dekens 2014). Approaches to collecting information on lessons learned and experiences might include conducting surveys or holding focus groups with the intended beneficiaries of a policy or plan or those implementing it, or reviewing and synthesising the outcomes of public dialogues or discussions.

Table 4:
Relative resource-intensiveness of M&E systems

Example	Extent to which it draws on existing data/systems	Other contributing factors	Resource-Intensiveness
<u>Morocco</u> ¹⁴	Drawing exclusively on data already available in pilot phase. 	Process supported by GIZ; national & international consultants. Prioritised indicators based on data that was already available.	Low
<u>Kenya</u> ¹²	Integrating into existing national M&E structures; drawing on data from relevant sectors.	Set-up of the system will involve approximately 100 people. Any delays or challenges in operationalisation of national M&E structures may slow down or complicate implementation of the M&E system for adaptation.	High
<u>France</u> ¹⁰	Collecting data from focal point in each of 20 relevant sectors.	Implementation coordinated by one full-time staff member; in-kind contributions from ministries.	Low
<u>UK</u> ¹⁹	Cyclical process of assessment, planning, and reporting, including detailed annual vulnerability assessments.	Part of an ongoing learning process.	High
<u>Norway</u> ¹⁶	Lessons from implementation of interventions gathered through both formal and informal methods including surveys, research, pilots & consultations.	Lessons consolidated and fed into national assessments every five years.	Low

Source: Hammill & Dekens 2014

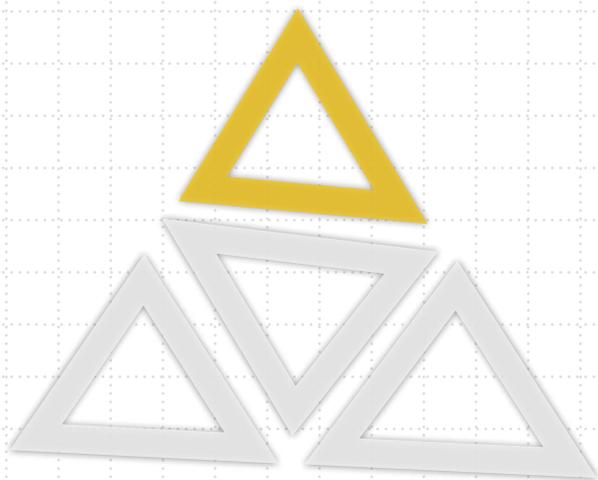
If you are using an indicator-based system, providing background information tailored to particular actors involved in operationalisation, as well **as standard formats for inputting data**—such as scorecards or databases—can both facilitate the process of providing and synthesising information. Table 5 provides examples of data collection tools and resources. In most of the systems reviewed by Hammill & Dekens (2014), **stakeholders from the scientific and research community** were involved in quality assurance of data and information collected through indicator-based systems.



Table 5:
Examples of data collection tools and approaches

COUNTRY /FRAMEWORK	TOOLS & RESOURCES
<p><u>Morocco</u>¹⁴</p> 	<p>In Morocco, factsheets on each adaptation indicator include a description, responsibilities for data collection, baseline values, and information on how to interpret the indicator.</p>
<p><u>France</u>¹⁰</p>	<p>In France, sector focal points are asked to fill out “Action Sheets” which define indicators and specify the relevant data that should be collected to monitor adaptation actions.</p>
<p><u>TAMD Framework</u>³⁷</p>	<p>To monitor Climate Risk Management (CRM) (process), the TAMD framework provides “scorecards” for each indicator with standard questions that a government can use to self-assess progress—a government may also choose to customise the scorecards to fit its specific purposes.</p> <p>To monitor adaptation performance (outcomes), the TAMD framework suggests drawing on existing data sources and statistics concerning climate information and the well-being of constituent populations, as well as using results of vulnerability assessments.</p>

4. Products



Products refers to the packaging and dissemination of the M&E results, i.e. of the information generated by the adaptation M&E system.

Promoting Use of M&E Results in the NAP Process

The [NAP Technical Guidelines](#)⁴³ (Step D.3.A) suggest updating the NAP process based on M&E results and coordinating the timing of updates of NAPs with updates to other relevant policies, such as development plans or relevant sector plans, in order to support integration.

4.1 Outputs and Reporting

What will the products of the M&E system be?

How will you present the information to target users in a way that best meets the intended purpose?

Frequency and timing of outputs is an important aspect of this consideration: if results are intended to inform the development of new policies and interventions or the revision of existing ones, it may be useful to synchronise the outputs and reports with the policy cycle. The [Philippines](#)⁴⁷, for example, have aligned its reporting cycle on adaptation progress with its consultation process for updating the National Development Plan. The frequency and timeframe of **data availability** may also influence how frequently reporting can take place.

There may be multiple **outputs and reporting formats** of a single system for M&E of adaptation, each serving a different purpose/audience. Table 6 provides examples of different formats that have been adopted to the particular purpose and intended use (-> consideration 1.2). Visual representations of data can also help to communicate key data and messages clearly. For example, the SNAP Tool (-> Table 2) uses radar charts to demonstrate starting points, targets, and progress on seven indicators related to the NAP process.



Table 6:

Examples of outputs and reporting formats for different purposes

EXAMPLE OF INTENDED USE	EXAMPLE OF OUTPUT/REPORTING FORMAT
Learning	
<p>Understanding which adaptation needs are sufficiently addressed and where additional efforts are needed, for example through repeated vulnerability assessments.</p>	<p>In <u>Morocco</u>,¹⁴ the main output produced by the OREDDs is the Annual Report on the State of the Environment, which will include a chapter on adaptation and vulnerability.</p> 
<p>Acquiring and systemising information on adaptation experience that may inform future initiatives.</p>	<p>In <u>Morocco</u>,¹⁴ monitoring data and information will be accessible via SIRE's web-based information system. For the Marrakech region a <u>report</u>³⁸ outlines impact chains, indicator baselines and indicator factsheets containing information on data sources and access arrangements as well as, responsible institutions for providing indications on how to interpret data.</p>
<p>Using improved understanding of how and why adaptation has worked to inform policy- and decision-making.</p>	<p>In the <u>UK</u>,¹⁹ an annual adaptation progress report has been published since 2012. In addition, an independent evidence report will be produced to inform the 2017 Climate Change Risk Assessment.</p>
Adaptive Management	
<p>Use of data to modify/improve policies and plans already under way.</p>	<p>The <u>Philippines</u>¹⁷ produces annual monitoring reports on the progress of the National Climate Change Action Plan (NCCAP) to set its priorities and budget for the year.</p>
Accountability	
<p>Use of data to modify/improve policies and plans already under way.</p>	<p>In <u>Nepal</u>,¹⁵ the Ministry of Science, Technology and Environment is coordinating the development of a Climate Change Plan (CCP) baseline assessment report and of CCP periodic performance reports to be disseminated to government and development partners.</p>
<p>Demonstrating good use of taxpayers' funds.</p>	<p>In <u>France</u>,¹⁰ an annual monitoring (or implementation) report of the NAP is presented to, and reviewed by, key stakeholders through the National Committee for Ecological Transition and communicated to the wider public via Internet.</p>
<p>Updating the COP on progress, for example through National Communications.</p>	<p><i>The NAP Technical Guidelines suggest this as one means of updating the international community on progress</i></p>

NEXT STEPS

As the various examples in this Guidebook have illustrated, there is no one-size-fits-all approach to developing a national system for M&E of adaptation. However, addressing the considerations outlined above should help you put the basic building blocks in place to support an adaptation M&E system that is best suited for your specific context.

Completing the questionnaire in the Annex may help you to prepare a summary of your approach and to formulate next steps to address each consideration. The example of Morocco presented throughout this Guidebook illustrates what a full process of developing a system for M&E of adaptation might look like. Box 4 refers you to information about systems that other countries have adopted to suit their own circumstances.

A hand is shown holding a light-colored wooden triangle against a background of a globe. The globe is partially visible, showing continents and oceans. The hand is positioned at the bottom left, with fingers gripping the base of the triangle. The triangle is oriented with one vertex pointing upwards. The overall image has a soft, slightly blurred quality.

BOX 4

Profiles of national systems for M&E of adaptation

Learn more about the following countries' approaches to national M&E of adaptation in a series of country profiles by GIZ & IISD (2014):

- ▶ [France](#) ¹⁰
- ▶ [Germany](#) ¹¹
- ▶ [Kenya](#) ¹²
- ▶ [Mexico](#) ¹³
- ▶ [Morocco](#) ¹⁴
- ▶ [Nepal](#) ¹⁵
- ▶ [Norway](#) ¹⁶
- ▶ [Philippines](#) ¹⁷
- ▶ [UK](#) ¹⁹

ANNEX

Use this questionnaire to see whether you have considered the key questions outlined in this guide. Before you begin to develop an M&E system, ask yourself:

- ▶ Have you identified a lead/coordinating institution?
- ▶ What other institutions need to be involved in the development and implementation of the M&E system?

Involve these stakeholders in developing responses to these questions. More stakeholders may be identified as the development of the M&E system progresses.

Questionnaire

1. Context

Question	Related Considerations	Informed by
<p>1.1 Policy context:</p> <p>How does M&E of adaptation fit within the broader policy and M&E environment?</p>	<p><i>What are related policies and priorities?</i></p>	
	<p><i>What policy mandate prompted the development of the M&E system?</i></p>	
	<p><i>Are there broader M&E and/or data collection systems in place in your context?</i></p>	
<p>1.2 Purpose:</p> <p>What is the purpose of the M&E system and how do you intend results to be used?</p>	<p><i>To what extent will you address learning, accountability, and/or adaptive management purposes?</i></p>	<p>1.1</p>
	<p><i>Who are your target users and how are they expected to use M&E results?</i></p>	
<p>1.3 Scale(s):</p> <p>What are the levels of application and aggregation?</p>	<p><i>At what level will the M&E system apply (national, sub-national)?</i></p>	<p>1.1</p>
	<p><i>What are the key sectors and/or levels in which interventions are expected to take place or produce outcomes?</i></p>	

2. Content

Question	Related Considerations	Informed by
<p>2.1 Focus:</p> <p>What do you want to monitor?</p>	<p><i>To what extent will you focus on monitoring process and/or adaptation outcomes?</i></p>	<p>1.2</p>
	<p><i>What existing M&E frameworks, if any, will you draw upon?</i></p>	
<p>2.2 Data and information requirements:</p> <p>What type of data and information do you require to fulfill the purpose of the M&E system?</p>	<p><i>What type of data and information do you require, and what is already available?</i></p>	<p>1.2 2.1</p>
	<p><i>How will you establish a cause and effect relationship between policies or actions and results?</i></p>	
	<p><i>Will you use indicators, and if so, which ones?</i></p>	
	<p><i>Will you involve experts in the process of developing indicators and interpreting data, and if so, how?</i></p>	

3. Operationalisation

Question	Related Considerations	Informed by
3.1 Institutional arrangements and resources:	<i>What institutions will you need to work with to operationalise the system?</i>	Before beginning 1.3 2.2
What institutions and resources will you work with?	<i>What resources are available to support the M&E system, and is your approach realistic in light of this?</i>	
3.2 Synthesis:	<i>In what format will key actors involved in the M&E system provide information?</i>	3.1
How will you collect and synthesise the data and information you require?	<i>How will you synthesise the information?</i>	

4. Products

Question	Related Considerations	Informed by
4.1 Outputs and reporting:	<i>How will you present the results of the M&E system, and how will this support use?</i>	1.2 3.2
What will the products of the M&E system be?	<i>How frequently will you report on results?</i>	

GLOSSARY

Adaptation: Human-driven adjustments in ecological, social, or economic systems in response to actual or expected climate change impacts.

Adaptive Capacity: The ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences of climate change.

Aggregation, level(s) of: Sectors and/or levels of implementation (e.g. governments, projects, communities) from which an M&E system draws data and information to feed into the monitoring system.

Application, level of: Refers to the level at which results of the M&E system will apply.

Baseline: The starting point with which you will compare data collected over time.

Content: Refers to the design of the adaptation M&E system, and the data and information required.

Context: Refers to the policy framework of adaptation, the purpose of the M&E system, its level of application and aggregation, as well as existing structures for M&E and data collection that may be drawn upon.

Data: A collection of numbers or characters.

Evaluation: A systematic assessment of the worth or utility of an intervention at a specific point in time, for example whether a policy has been effective in achieving set objectives.

Indicator: A measurable characteristic or variable which helps to describe an existing situation and to track changes or trends – i.e. progress – over time.

Information: Data that has been compiled or organised.

Monitoring: The systematic and continuous collection of information that enables stakeholders to check whether an intervention is on track or achieving set objectives.

Operationalisation: Refers to the institutions charged with overseeing M&E and the steps and process involved in gathering and synthesising the necessary information for M&E of adaptation.

Outcomes: The changes that result from the implementation of policies, plans, or interventions. They need to be assessed in order to determine whether adaptation actually takes place. It is important to recognise that these outcomes may also be affected by other factors.

Process: Advancement in implementing policies, plans or interventions that address climate change adaptation, and/or in building institutional and human capacity to do so.

Results: Information generated through M&E.

Sub-national level: refers to a level below the national level – a state or province, but not to local, municipal, or community levels.

Theory of Change: An illustration of how a desired change is expected to happen and under which assumptions activities are expected to lead to the intended results.

Vulnerability: The propensity or predisposition to being adversely affected by the impacts of climate change.

REFERENCES

Many of these documents are available under <www.AdaptationCommunity.net>. For easy access to the relevant documents you can also download this Guidebook online at <www.AdaptationCommunity.net> under “Monitoring and Evaluation” -> “National-level M&E of adaptation”, and use the active hyperlinks in the list of references.

- ❶ **Bours, D., McGinn, C., & Pringle, P. (2014a).** Guidance note 1: Twelve reasons why climate change adaptation M&E is challenging. SEA Change Community of Practice and UKCIP.
- ❷ **Bours, D., McGinn, C., & Pringle, P. (2014b).** Guidance note 2: Selecting indicators for climate change adaptation programming. SEA Change CoP and UKCIP.
- ❸ **Bours, D., McGinn, C., & Pringle, P. (2014c).** Guidance note 3: Theory of Change approach to climate change adaptation programming. SEA Change Community of Practice and UKCIP.
- ❹ **Dinshaw, A., Fisher, S., McGray, H., Rai, N., & Schaar, J. (2014).** Monitoring and Evaluation of Climate Change Adaptation: Methodological Approaches, OECD Environment Working Papers, No. 74, OECD Publishing.
- ❺ **EEA (2015):** National monitoring, reporting and evaluation of climate change adaptation in Europe. European Environment Agency.
- ❻ **Fourth High-Level Forum on Aid Effectiveness (2011).** Busan Partnership for Effective Development Co-Operation.
- ❼ **Fritzsche, K., Scheiderbauer, S., Bubeck, P., Kienberger, S., Buth, M., Zebisch, M., & Kahlenborn, W. (2014).** The Vulnerability Sourcebook: Concept and guidelines for standardised vulnerability assessments. GIZ.
- ❽ **GIZ (2014a).** Adaptation M&E Training.
- ❾ **GIZ (2014b).** The Stocktaking for National Adaptation Planning (SNAP) Tool. GIZ.
- GIZ & IISD (2014):** National adaptation M&E Factsheet for ...
 - ❿ France
 - ⓫ Germany
 - ⓬ Kenya
 - ⓭ Mexico
 - ⓮ Morocco
 - ⓯ Nepal
 - ⓰ Norway
 - ⓱ Philippines
 - ⓲ PPCR
 - ⓳ UK
- ⓴ **GIZ (2015).** The Adaptation M&E Navigator. A decision support tool for the selection of suitable M&E approaches for adaptation to climate change. GIZ.
- ⓵ **Government of Morocco (2015).** Morocco: Intended Nationally Determined Contribution (INDC) under the UNFCCC.
- ⓶ **Government of South Africa (2011).** National Climate Change Response White Paper.
- ⓷ **Hammill, A., & Dekens, J. (2014).** Monitoring and Evaluating Adaptation at Aggregated Levels: A Comparative Analysis of Ten Systems. GIZ.

- 24 **Hammill, A., Dekens, J., Leiter, T., Olivier, J., Klockemann, L., Stock, E., & Gläser, A. (2014).** Repository of Adaptation Indicators. GIZ.
- 25 **Hinkel, J., Bharwani, S., Bisaro, A., Carter, T., Cull, T., Davis, M., Klein, R., Lonsdale, K., & Rosentrater, L., & Vincent, K. (2013).** PROVIA Guidance on Assessing Vulnerability, Impacts and Adaptation to Climate Change: Consultation Document. United Nations Environment Programme (UNEP).
- 26 **Jaouhari, Y. (2014).** Guide relatif au montage du Système de Suivi-Évaluation de la Vulnérabilité et de l'Adaptation au Changement Climatique dans les Régions du Souss Massa Drâa et Marrakech Tensift Al Haouz. GIZ.
- 27 **LEG (2015).** Update on progress: A tool for monitoring and reviewing progress, effectiveness and gaps in the formulation and implementation of NAPs (PEG M&E tool). LEG.
- 28 **Leiter, T. (2015).** Linking Monitoring and Evaluation of Adaptation to Climate Change across Scales: Avenues and Practical Approaches. In: D. Bours, P. Pringle & C. McGinn (Eds.), *Monitoring and Evaluation of Climate Change Adaptation: A review of the landscape*. New Directions for Evaluation, 147.
- 29 **Mackay, A., Gallo, I., Husch, J., & Raksakulthai, V. (2015).** Skills Assessment for National Adaptation Planning: How Countries Can Identify the Gap. United Nations Institute for Training and Research (UNITAR).
- 30 **Ministry of Environment and Mineral Resources, Kenya (2015).** National Performance and Benefit Measurement Framework, Section A: NPBMF and MRV+ System Design, Roadmap and Guidance. Ministry of Environment and Mineral Resources, Kenya.
- 31 **Miola, A., Paccagan, V., Papadimitriou, E., & Mandrici, A. (2015).** Climate resilient development index: theoretical framework, selection criteria and fit-for-purpose indicators. European Commission. Joint Research Centre.
- 32 **Naswa, P., Traerup, S., Bouroncle, C., Medellin, C., Imbach, P., Louman, B., & Spensley, J. (2015).** Good Practice in Designing and Implementing National Monitoring Systems for Adaptation to Climate Change. Climate Technology Centre & Network (CTCN).
- 33 **OECD (2015).** National Climate Change Adaptation: Emerging Practices in Monitoring and Evaluation. OECD Publishing.
- 34 **PPCR (2015).** PPCR Monitoring and Reporting Toolkit. Climate Investment Funds (CIF).
- 35 **Price-Kelly, H., & Hammill, A. (2015).** Targeted Topics: High-level political support & sectoral integration in NAP processes. International Institute for Sustainable Development (IISD).
- 36 **Prowse, M., & Snilstveit, B. (2011).** Impact Evaluation and Interventions to Address Climate Change: A Scoping Study. International Initiative for Impact Evaluation (3ie).
- 37 **Rai, N., Brooks, N., & Nash, E. (2015).** Tracking Adaptation and Measuring Development: a manual for national governments. International Institute for Environment and Development (IIED).
- 38 **Royaume du Maroc & GIZ (2014).** Système de suivi et évaluation de la vulnérabilité et de l'adaptation au changement climatique. Recueil des fiches-indicateurs et indications pour l'interprétation. Region de Marrakech Tensift-Al Haouz.

- 39 **Schönthaler, K. et al. (2011).** Entwicklung eines Indikatorensystems für die Deutsche Anpassungsstrategie an den Klimawandel (DAS). Umweltbundesamt [English Summary: p. 1-15].
- 40 **Silvestrini, S., Bellino, I., & Väth, S. (2015).** Impact Evaluation Guidebook for Climate Change Adaptation Projects. GIZ.
- 41 **Spearman, M., & McGray, H. (2011).** Making Adaptation Count: Concepts and Options for Monitoring and Evaluation of Climate Change Adaptation. GIZ.
- 42 **Tolmie, C. (2014).** Introduction to Theories of Change (video). Results for Development Institute.
- 43 **UNFCCC (2012).** National Adaptation Plans: Technical guidelines for the national adaptation plan process. United Nations Framework Convention on Climate Change Secretariat.
- 44 **Viggh, A., Leagnavar, P., Bours, D., & McGinn, C. (2015).** Good Practice Study on Principles for Indicator Development, Selection, and Use in Climate Change Adaptation Monitoring and Evaluation. Climate-Eval Community of Practice.
- 45 **Vincent, K., Wanjiru, L., Aubry, A., Mershon, A., Nyandiga, C., Cull, T., & Khamarunga, B. (2010).** Gender, climate change, and community-based adaptation: A Guidebook for designing and implementing gender-sensitive community-based adaptation programmes and projects. UNDP.



Published by

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices

Sector Project Effective Adaptation Finance (M&E Adapt)
Bonn and Eschborn,
Germany

Authors

Hayley Price-Kelly, Anne Hammill, Julie Dekens (IISD)
Timo Leiter, Julia Olivier (GIZ)

Design and editing

Additiv. Visuelle Kommunikation, Berlin, Germany

Photo credits

Cover: © lassedesignen - fotolia.com; page 15: © GIZ;
pages 18, 47: © Africa Studio - fotolia.com; pages 23, 37: © strixcode - fotolia.com;
pages 25, 28, 31, 36, 45, 49: © wrangler - fotolia.com; page 43 © Kaarsten - fotolia.com;
page 46 © Holger Melzow; page 51 © Burkhardt Glaser

As at

December 2015

GIZ is responsible for the content of this publication.

On behalf of

Federal Ministry for Economic Cooperation and Development (BMZ),
Special unit 'Climate'

Addresses of the BMZ offices

BMZ Bonn
Dahlmannstraße 4
53113 Bonn
Germany
Tel. +49 (0) 228 99 535-0
Fax +49 (0) 228 99 535-3500

poststelle@bmz.bund.de
www.bmz.de

