

## LEAST DEVELOPED COUNTRIES EXPERT GROUP

Monitoring and assessing progress, effectiveness and gaps under the process to formulate and implement National Adaptation Plans: The PEG M&E tool



**United Nations**  
Framework Convention on  
Climate Change





# Monitoring and assessing progress, effectiveness and gaps under the process to formulate and implement National Adaptation Plans: The PEG M&E tool

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## SUMMARY

The LEG has established 10 essential functions of the process to formulate and implement national adaptation plans (NAPs) to encapsulate the main expected outcomes of the process. In order to monitor and assess progress, the LEG has developed a set of generic metrics that can be applied to each of these essential functions when monitoring and assessing progress and effectiveness, and in so doing, helps identify gaps and needs to further improve the process. The generic metrics can be applied in a flexible manner, and the results are useful in directing efforts where gaps exist to ensure an effective and successful process over the long-term. The tool currently focuses on the process, while future extensions will cover the adaptation outcomes after implementation of the plans.

**Keywords:** NAP Process, adaptation M&E, generic metrics, NAPs, LDCs, UNFCCC, LEG







# 1. INTRODUCTION

Planning for adaptation at the national level is a complex process involving many actors and stakeholders acting in tandem to achieve adaptation outcomes at their respective levels. The component activities are happening at different rates and are at different stages at any given moment in time, depending on what exists and what had been implemented during past efforts. The process to formulate and implement national adaptation plans (NAPs) was established at COP 16 (decision 1/CP.16), and is designed to enable all developing and least developed country Parties to assess their vulnerabilities, to mainstream climate change risks and to address adaptation. The COP also agreed that enhanced action on adaptation follows a participatory and fully transparent approach that facilitates country driven actions considering the vulnerable groups, communities and ecosystems. As a strategic national plan, the NAP would provide guidance in doing adaptation at multiple levels of governance. This will not only cover government agencies and ministries, but also communities, private sector, local governing bodies, civil society and other relevant stakeholders.

## 2. BACKGROUND

There are a host of institutions working at multiple levels in the field of adaptation and M&E, including bilateral agencies, international think tanks and bodies and expert groups under the Convention. Since climate change impacts a broad range of sectors that are critical to the overall development of the countries, monitoring and evaluation of adaptation also need operations across sectors and levels with a strong element of coordination. The M&E of adaptation is an area of active research. While we have studied recent results in this area, we will not attempt to summarize the current science however the reader is directed to recent reviews such as by the OECD.<sup>1</sup>

There are multiple approaches and methodologies to deal with M&E of adaptation. As more and more governments are moving towards development and implementation of adaptation plans and policies, a generic approach/tool for M&E at the national level is vital to track the impact of climate change adaptation uniformly. The PEG M&E tool paper is an initiative in this direction and is developed following some basic assumptions in the process to formulate and implement NAPs.

### WHAT IS ADAPTATION?

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Adaptation is a process of adjusting systems and managing climate change risks through a process of identifying, planning and implementing activities (policies, projects and programmes), in order to cope with, reduce vulnerability to and build resilience towards a changing climate.

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- The systems can be ecosystems, social or economic, or any combination of these or others, broken down to a manageable level and size;
- Adaptation can be viewed as a **process, adjustment or outcome** (*this corresponds to the 3 areas of M&E listed later in the text*);
- Adaptation is a **continuum**, from coping, addressing urgent and immediate needs including through disaster risk reduction, to national planning and efforts to address losses and damages. The actions themselves can also be in the form of incremental actions all the way to major transformation;
- Definitions of adaptation are context-specific, and vary by country. This requires that adaptation be described in a given situation to clarify boundaries and what is included in the discourse.

### PROCESS-THINKING FOR ADAPTATION

The NAP is embedded in process thinking. In this case, “a process to formulate and implement national adaptation plans,” designed to take a long-term approach to the planning, moving beyond mere production of one-off plans.

A normal definition of process is that it is “*a series of linked and interdependent procedures, which, at each stage, consume resources to convert inputs into outputs, the outputs then serve as inputs for the next stage, until a known goal or end result is reached.*”<sup>2</sup>

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<sup>1</sup> <[http://www.oecd-ilibrary.org/environment/national-climate-change-adaptation\\_9789264229679-en](http://www.oecd-ilibrary.org/environment/national-climate-change-adaptation_9789264229679-en)>.  
<sup>2</sup> Simplified from: <http://www.businessdictionary.com/definition/process.html#ixzz3g5NuaYWU>.



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A process for formulating and implementing national adaptation plans can be defined as follows: It is a **series of linked and interdependent procedures** which, **collectively and successively**, lead to the **formulation and implementation of national adaptation plans** to address adaptation **covering all important sectors and issues** in the country, on a **continuing, iterative and coherent manner**, with due consideration of **broader development priorities** and the **long-term nature of climate change**.

**The NAP process works towards two agreed objectives, which are:**<sup>3</sup>

1. To **reduce vulnerability** to the impacts of climate change, by building adaptive capacity and resilience;
2. To **facilitate the 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.

These were then indirectly scaled up in 2015 when the Paris Agreement established the global goal on adaptation of **enhancing adaptive capacity, strengthening resilience** and **reducing vulnerability to climate change**, with a view to contributing to sustainable development and ensuring adequate adaptation response **in the context of limiting temperature increase to well below 2°C**.

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- › The process to formulate and implement NAPs involves many procedures that produce outputs that are then used as inputs to subsequent procedures to produce more outputs and outcomes, on an ongoing basis, given the long-term nature of climate change and time taken to achieve intended outcomes;
  - › The national adaptation plans are one of many outputs of the process, and they facilitate the adaptation cycle by providing a basis for implementation, and may include activities that target the local to regional and national systems, taking a sectoral or integrated approach, as appropriate.

## DIMENSIONS OF M&E FOR ADAPTATION

There are 3 main areas for M&E in the context of NAPs and adaptation:

- › M&E of the process of formulating and implementing NAPs, which is the niche for the PEG M&E tool is designed to manage the process and help steer it towards successful outcomes by promoting best practices;
- › M&E of adaptation projects, programmes, policies, as routinely carried out by funding and implementing agencies, and is designed to show accountability for funds allocated and show value for the money;
- › M&E of adaptation outcomes and impact. This is broader, includes research and systematic observation of impacts, state, and how adapted a system is.

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<sup>3</sup> Decision 5/CP.17

## 3. APPROACH AND PRINCIPLES FOR THE PEG M&E TOOL

The PEG M&E tool defines a set of metrics to monitor and assess the process to formulate and implement NAPs. Metrics are a system of measurement that includes the item being measured, the unit of measurement, and the value of the unit (NAS 2005).

For the process to formulate and implement NAPs, metrics offer a tool for measuring progress, improving process effectiveness, and demonstrating programme successes and gaps to the UNFCCC/COP, national governments, and other stakeholders.

### 3.1 PRINCIPLES FOR DEVELOPING METRICS

Metrics are developed for many objectives. Metrics are used to gauge progress in meeting programme objectives and to identify where adjustments should be made to improve performance. Metrics are also used to manage programmes or to increase their accountability to policy-makers and the public and to facilitate learning. A United States National Academy of Sciences (NAS) Committee on Metrics (NAS 2005)<sup>4</sup> identified the following principles among others, for developing useful metrics and avoiding unintended consequences:

1. **Good leadership is required if programmes are to evolve toward successful outcomes.** Programmes suffer if no one has the authority to direct resources and/or effort. For the process to formulate and implement NAPs, this could be one individual or in some cases, it is an office/department, such as the one housing the UNFCCC Focal Point.
2. **A good strategic plan must precede the development of metrics.** Such a plan includes well-articulated goals against which to measure progress and a sense of priorities. Absent this context, it is difficult to select the most important measures for guiding the programme.
3. **Good metrics should promote strategic analysis.** Demands for higher levels of accuracy and specificity, more frequent reporting, and larger numbers of measures than are needed to improve performance can result in diminishing returns and escalating costs.
4. **Metrics should be easily understood and broadly accepted by policy-makers.**
5. **Promoting quality should be a key objective for any set of metrics.** Quality is best assessed by independent and transparent peer review.
6. **Metrics should assess process as well as progress.** Metrics in a complex programme such as the process to formulate and implement NAPs will be diverse. It includes measuring factors that range from programme planning, to resulting adaptation knowledge and practical applications, to the ultimate impact of policy decisions on society.
7. **A focus on a single measure of progress is often misguided.** Relying solely on the metric of integrating climate adaptation in national budgets, for example, can create an erroneous sense of progress, since vulnerability can increase, decrease, or remain constant as the degree of integration increases.

<sup>4</sup> NAS 2005. Thinking Strategically: The Appropriate Use of Metrics for the Climate Change Science Program. Available at <<http://www.nap.edu/catalog/11292.html>>.



8. **Metrics must evolve to keep pace with scientific progress and programme objectives.** Adjustments to the measures will be required as programme managers gain experience and the programme itself matures and evolves.
9. **The development and application of meaningful metrics will require significant human, financial, and computational resources.** It is possible to develop and apply numerous metrics for the process to formulate and implement NAPs, but doing so would be costly and may not lead to improved programme performance. A deliberative process of selecting the few most appropriate metrics, collecting the necessary information, and carrying out the evaluation will be required. The frequency of measurement will depend on the context. For example, one can take measurements every 10 years to assess whether to build a dyke, but yearly to see if yields are increasing.
10. **A good set should include all 5 types of metrics to the extent possible.** See a box later for the five types of metrics.

Although each of these principles is important, **five** of them merit especially careful attention according to NAS (2005) and the LEG:

1. Leadership to guide the programme and redirect resources;
2. A plan of action against which to apply the measures;
3. The potential to use metrics not just as simple measures of progress, but as tools to guide strategic planning;
4. Availability of human, financial, and computational resources required for the development and application of metrics;
5. Adjustment in metrics is necessary to keep pace with scientific progress and programme objectives, allowing to learn from experience and foster future progress.

### 3.2 METRICS FOR THE PROCESS TO FORMULATE AND IMPLEMENT NAPs

The first challenge in developing metrics is to choose goals against which progress should be measured. Adaptation planning can have numerous goals and objectives, stated at different levels of specificity, from overarching goals to milestones, products, and pay-offs, from local individual adaptation actions to sectoral, subnational and national efforts, as well as regional and global efforts that have benefits to countries.



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The LEG found that the milestones, products, and pay-offs of the process to formulate and implement NAPs could be grouped into the following **10 essential functions (EFs)**, which cover the scope of the NAPs, and these are then amenable to the development of metrics:

1. Helping governments to provide **national leadership** and **coordination of adaptation efforts at all levels** and to act as the **main interface** with regional and international mechanisms;
2. The collection, compilation, processing and dissemination of **data, information and knowledge** on **climate change and relevant development aspects** in support of adaptation planning and implementation;
3. **Identifying and addressing gaps and needs** related to capacity for the successful design and implementation of adaptation;
4. Assessing **climate-development linkages and needs**, and supporting the **integration** of climate change adaptation into national and subnational development and sectoral planning (through policies, projects and programmes);
5. **Analyzing climate data** and **assessing vulnerabilities** to climate change and identifying **adaptation options** at the sector, subnational, national and other appropriate levels;
6. **Appraising adaptation options** to support decision-making on adaptation investment plans and development planning;
7. Promoting and facilitating the **prioritization** of climate change adaptation in national planning;
8. Facilitating the **implementation** of adaptation at all levels through appropriate policies, projects and programmes, taking into account opportunities for synergy;
9. Facilitating the **monitoring, review** and **updating** of adaptation plans over time, to ensure progress and effectiveness of adaptation efforts and to demonstrate how gaps are being addressed;
10. Coordinating **reporting** and **outreach** on the process to formulate and implement NAPs to stakeholders nationally, internationally and formally on progress to the Convention.

In its earlier work, the LEG identified 10 adaptation–development themes/goals that could represent the breadth of focus areas for looking at adaptation in the countries, as follows:<sup>5</sup>

1. **Agriculture and food security:** Achieve and safeguard food security (can add nutrition);
2. **Water Resources:** Achieve and safeguard water security and sanitation;
3. **Physical Safety:** Protecting life and property against climatic extremes and disasters such as along low-lying and coastal areas;
4. **Protecting livelihoods and enhancing adaptive capacity;**
5. **Climate-proofing** major components of national economies and sustainable development (climate-proofing the socio-economic growth engine);
6. Supporting and enhancing **Human Health and Safety;**
7. Protecting and enhancing ecosystem structure and function for sustainable provision of **Ecosystem Goods and Services** including land use;
8. Climate-proofing renewable **Energy Sources and Supplies;**
9. Protecting and preserving **Cultural Values and Cultural Systems;**
10. Protecting and improving the design of critical **Infrastructure and Land Use Planning.**

A similar list of result areas was developed by the GCF (document GCF/B.07/11, p53), except for the focus on energy.

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<sup>5</sup> Step-by-Step guide for the implementation of NAPAs ...



## OVERALL APPROACH IN DEVELOPING THE PEG M&E TOOL

*A general set of metrics can be developed and used to measure progress and guide strategic thinking and learning across the entire set of the essential functions of the process to formulate and implement NAPs.*

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### BOX 1: BACKGROUND ON CATEGORIES OF METRICS

Metrics can be devised to evaluate the overall process for reaching a goal, or any stage or result of the process (input, output, outcome, impact). Definitions of these categories and example metrics related to essential function 2 in relation to the NAPAs are given below.

1. **Process**—a course of action taken to achieve a goal. Example metrics include existence of a champion for the NAPA process the length of time between starting the preparation of the NAPAs to delivering a NAPA to policy-makers for endorsement, and over the duration of the implementation phase.
2. **Input**—tangible quantities put into a process to achieve a goal. An example input metric is expenditures for (a) consultation meetings of the NAPA team with various stakeholders and actors, (b) deployment of studies and consultants to conduct technical assessments of vulnerability in all relevant sectors and subsequent aggregation of the information, (c) formulation of project proposals to the LDCF and other fund sources.
3. **Output**—products and services delivered. Examples of output metrics include number of assessment reports and number of projects funded to implement the priorities in the NAPAs.
4. **Outcome**—results that stem from use of the outputs. Unlike output measures, outcomes refer to an event or condition that is external to the program and is of direct importance to the intended beneficiaries (e.g., ministry heads, policy-makers, other stakeholders). Examples of outcome metrics are the number of adaptation options/solutions introduced to society to reduce the impact of climate change in each sector and the assessment outputs integrated into a new understanding of adaptation to climate change.
5. **Impact**—the effect that an outcome has on something else. Impact metrics are outcomes that focus on long-term societal, economic, or environmental consequences. Examples of impact metrics include the achievement of sustainable agricultural production in the face of a variable climate (changed growing season etc.) and the increase in public understanding of the impacts and consequences of climate change on sustainable development.

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The general metrics recommended by the LEG are given in Box 2. The metrics are grouped into the five main types of metrics: process, input, output, outcome and impact metrics, and build on the results of the NAS 2005 study.

Not all metrics will be applicable to all essential functions. Moreover, it would be too expensive to measure and monitor all essential elements of the process to formulate and implement NAPs. Efforts should be made to select the most appropriate measures. Metrics to guide strategic thinking will focus on identifying and monitoring programme strengths and weaknesses with the object of enabling managers to make decisions that support successful outcomes. These measures will become apparent from even rough scores or answers to the metrics listed in Box 2. Metrics for demonstrating programme progress will depend on how NAP teams define what constitutes success.

Metrics to promote learning will capture experiences and lessons with a view to improving how things are done (see LEG BP&LL Volume 3 for a methodology for capturing best practices and lessons learned). As countries gain experience, the initial metrics listed in Box 2 will be refined and simplified until only the most useful emerge.

*While the answers will mainly be a yes or no or a numerical score, the formal evaluation should include a commentary explaining the meaning of the score, and this explanation and commentary is as important as the yes or no answer.*

An answer of no to any of the metrics, could imply a gap.

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## **BOX 2: GENERAL METRICS FOR THE PROCESS TO FORMULATE AND IMPLEMENT NAPS**

### **Process Metrics (measure a course of action taken to achieve a goal)**

1. Leader with sufficient authority to direct the process to formulate and implement NAPS at the national level and allocate resources to relevant actors, direct planning efforts with participation of all relevant ministries and other stakeholders, and facilitate progress for the country.
2. A multi-year plan that includes goals, focused statement of task, implementation, operational research and systematic observations, applications, and integration, such as in the form of a road map.
3. A functioning participatory process in place involving all appropriate stakeholders, with (a) underlying processes and timetables, (b) assessment of progress toward achieving programme goals, and (c) an ability to revisit the plan in light of new advances.
4. A strategy for setting priorities and allocating resources among different elements of the programme (including those that cross agencies), advancing promising avenues of relevant research, piloting and implementation, and roles and responsibilities of the actors.
5. Procedures in place that enable or facilitate the use or understanding of the results by others in the country as well as at the regional and global level (e.g., researchers and practitioners in other disciplines, operational users, decision-makers) and promote partnerships.

### **Input Metrics (measure available resources to be used by the process to achieve a goal)**

1. Sufficient intellectual and technological foundation to support the work.
2. Sufficient commitment of resources (i.e. people, infrastructure, financial etc.) directed specifically to allow the planned programme to be carried out.
3. Sufficient resources to implement and sustain important steps under each essential function.
4. Sufficient resources to promote the development and maintenance of each of the following: (a) human capital; (b) measurement systems, models and tools where relevant, and synthesis and interpretive activities; (c) transition to operational activities where warranted; and (d) services that enable the use of data and information by relevant stakeholders.
5. Activities use existing resources (e.g., regional historical data records, infrastructure, ongoing programmes and projects, and whether the new planning process built on past work).

### **Output Metrics (measure the products and services delivered)**

1. The activities of the process produce peer or publicly-reviewed and broadly accessible results, such as (a) data and information, (b) quantification of important systems and processes, (c) applicable measurement techniques, (d) scenarios and decision support tools, and (e) well-described and demonstrated relationships aimed at improving understanding of processes or enabling forecasting and prediction.
2. An adequate community and infrastructure to support the elements of the process to formulate and implement NAPS has been developed.



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**BOX 2: CONTD.**

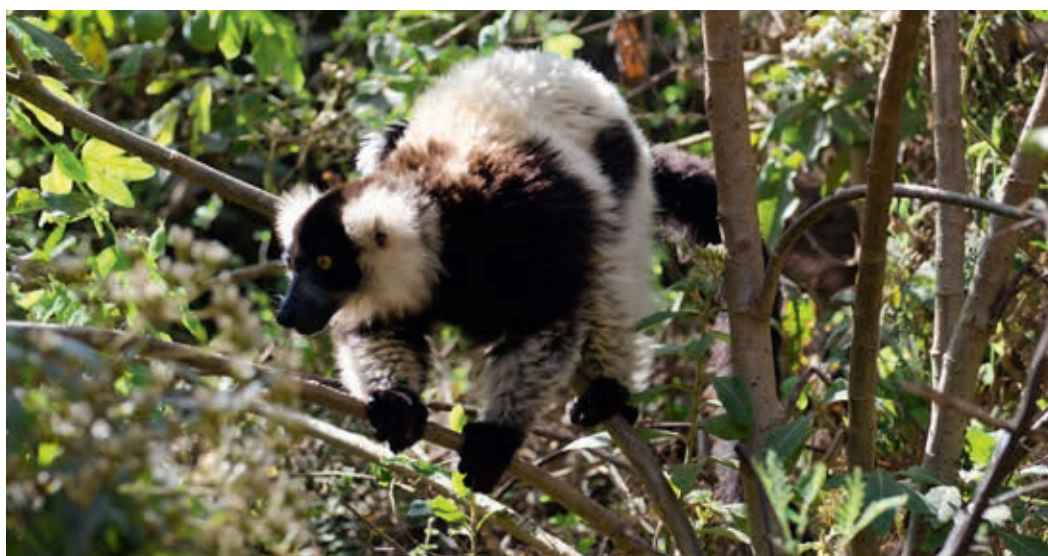
3. Appropriate stakeholders judge these results to be sufficient to address needs of the process to formulate and implement NAPs and to inform management and policy decisions.
4. Synthesis and assessment products are created that capture key experiences and lessons learned from carrying out the process to formulate and implement NAPs.
5. Results and outputs of the process to formulate and implement NAPs are communicated to an appropriate range of stakeholders especially policy- and decision-makers.

**Outcome Metrics (measure results that stem from use of the outputs and influence stakeholders outside the programme)**

1. The activities under the process to formulate and implement NAPs have engendered significant new avenues of action and resources to address the objectives of adaptation.
2. The element of the process to formulate and implement NAPs has yielded improved understanding, such as (a) more consistent and reliable predictions or forecasts of risks and sources of vulnerability to climate change, (b) increased confidence in our ability to cope and deal with climate change and variability, and (c) broadly accepted conclusions about key issues or relationships.
3. Assessment results and pilot activities have been transitioned to operational use.
4. Institutions and human capacity have been created that can better address a range of related problems and issues in addressing adaptation.
5. The measurements, analysis, and results are being used (a) to answer the high-priority climate adaptation questions that motivated them, (b) to address objectives outside the NAP within broader sustainable development, and/or (c) to support beneficial applications and decision-making, such as forecasting and early warning systems, cost-benefit analysis, or improved assessment and management of risk.

**Impact Metrics (measure the long-term societal, economic, or environmental consequences of an outcome)**

1. The results of the process to formulate and implement NAPs have informed policy and improved decision-making in the country on adaptation issues and ultimately on development planning.
2. The programme has benefited society in terms of protecting and enhancing economic vitality, promoting environmental stewardship, protecting life and property, and reducing vulnerability to the impacts of climate change.
3. Public understanding of climate adaptation issues has increased.







## 4. CASE STUDY

The case study elaborated here is based on detailing of multiple levels under each metric for one essential function. By going through the generic metrics in Box 2, a list of customized metrics is derived to comprise the set for assessing progress, effectiveness and gaps.

**Essential Function 2:** The collection, compilation, processing and dissemination of **data, information and knowledge on climate change and relevant development aspects** in support of adaptation planning and implementation.

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Expected Result/Outcome 1: The process to formulate and implement NAPs leads to enhancement or **establishment of effective systems** for collection, compilation, processing and dissemination of climate data and information that support the needs of all stakeholders in adaptation planning and implementation.

Expected Result/Outcome 2: The process to formulate and implement NAPs leads to **strengthening of systems for collection**, compilation, processing and dissemination of development data (socio-economic and development scenarios) and information supporting the needs of all stakeholders in adaptation planning and implementation.

Expected Result/Outcome 3: The process to formulate and implement NAPs leads **to improved knowledge systems** including belief systems/expert-based systems based on experiences and lessons learned from adaptation actions.

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The generic elements of metrics under the essential function 2 will cover the questions like the nature of data, the responsibility centers for data collection, and procedures and rules for data collection and finally the essential data assimilation and communication strategy. This is with an overall objective of tracking the systems of data processing, progress and overall knowledge management for an effective process to formulate and implement NAPs.

### *Process Metrics*

- › *Clarity in the purpose of the required data to effectively engage in the process to formulate and implement NAPs;*
- › *A designated institution with capacities for collecting and processing of required data that support the needs of multiple stakeholders;*
- › *Ensuring the sufficiency of available data to assess current and future climate risks, vulnerability and adaptation for better adaptation planning and implementation;*
- › *Putting in place a functioning system for accessing data.*

### *Input Metrics*

- › *Have adequate expertise (human capital, systems etc.) in the required sectors for data collection, compilation, processing and dissemination;*
- › *Sufficient financial resource made available to support the process of climate data and information management;*
- › *Required technological and intellectual support made available to sustain the work.*

*Output Metric*

- › *Activities of the process and timely inputs results in reports relevant for adaptation planning and implementation. E.g. Scenarios, V&A etc.;*
- › *An appropriate quality control system put in place to ensure that the output is in line with the quality standards envisages under the process to formulate and implement NAPs;*
- › *Have a clear, written and agreed data-sharing policy in place.*

*Outcome Metric*

- › *System for data collection, analysis and dissemination have been enhanced and strengthened to support adaptation planning and implementation;*
- › *A functioning system with users/stakeholders receiving and utilizing data/information.*

*Impact Metrics*

- › *Resultant system after the process to formulate and implement NAPs contributed to improvement of policy formulation on adaptation planning and implementation;*
- › *The programme has improved the policy making based on the best available data information and knowledge.*

*Notes*

- › *“Gaps” (in PEG) can be captured through the responses of no to the metrics;*
- › *“Effectiveness” (in PEG) can be captured mainly from the metrics under “outputs” and “outcomes” for the functions;*
- › *The metrics under outcome level would be answering the question whether the particular essential function is being met;*
- › *“Impact” is at a higher level and is related to the two objectives of process to formulate and implement NAPs (integration and vulnerability). Thus the impact metrics can be common across the 10 essential functions and will be related to the objectives of the process to formulate and implement NAPs.*



## 5. NEXT STEPS

The sample application of the generic metrics to produce specific ones will be extended to cover all 10 essential functions, and these will be applied to a sample country.



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