

# AMME FRAMEWORK

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Adaptation Metrics Mapping Evaluation

# Adaptation Metrics Mapping Evaluation Framework

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## **About the International Platform on Adaptation Metrics (IPAM)**

The International Platform on Adaptation Metrics (IPAM) was launched in 2020 as the culmination of adaptation metrics convenings launched by the Moroccan Presidency of Conference of Parties to the UN Framework Conventions on Climate Change (COP22).

The aim of IPAM is to serve as an international reference platform for adaptation metrics. It seeks to co-develop metrics and tools in response to emerging adaptation needs, and IPAM also to create synergies among its members. IPAM structures its work in dedicated sector-oriented committees such as agriculture, cities, and water. It also addresses challenges such as cross-sectoral metrics harmonisation, and the identification and application of appropriate techniques and tools for metrics.

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# Executive Summary

## Background and challenge

The field of climate change adaptation metrics is complex and fast-changing. While there are a number of important new adaptation initiatives creating an enabling environment for metrics evaluation and development, there are also major challenges in developing comparative metrics that need to be overcome. These hinder progress towards adaptation objectives at all scales.

The absence of suitable adaptation metrics can be explained by the limited availability of suitable underpinning data and information, a lack of common definitions and standards for metrics which hinder effective comparisons, and conceptual and practical difficulties in developing composite, aggregable metrics that can support cross-sectoral, national, or global overviews.

Competing objectives and definitions of adaptation also create tensions. Metrics often need to serve different stakeholder needs and decision-making objectives. Clarity in defining metrics and objectives is central to overcoming these issues.

## IPAM Adaptation Metrics Mapping Evaluation (AMME) Programme, and the AMME Framework

The Adaptation Metrics Mapping Evaluation Programme (AMME Programme), initiated by the International Platform on Adaptation Metrics (IPAM), aims to collate and support interventions focused on adaptation metrics evaluation.

With support from the UK-funded North Africa Technical Assistance Facility (NATAF) the present AMME Framework document has been developed to support the implementation of the AMME programme. The objective behind the AMME Framework is to provide practical guidance for mapping and evaluating available metrics and identifying the potential for developing new metrics.

The AMME Framework outlines five aspects that are common to all *adaptation interventions*. The metrics aspects are:

1. Purpose
2. Stakeholder engagement, participation and communication strategies
3. Stakeholder competencies and capacities
4. Data and information, and,
5. Evaluation and good practice.

Each of these aspects is viewed through three lenses. These lenses identify key *metrics* issues central to all interventions:

1. Stakeholders and their needs
2. A 'whole system' perspective
3. How metrics support decision making processes.

The lenses automatically adjust for differences in scope, scale and purposes of individual mapping evaluations, and their individual perspectives overlap naturally where required.

## Mapping evaluation implementation

The implementation of the AMME Framework is undertaken in four steps - each with their own action checklists – and supported by a matrix which maps the coverage of existing metrics in relation to the mapping evaluation scope:

- **Step 1** involves specifying the mapping evaluation scope and metrics challenges to be addressed
- **Step 2** analyses the coverage, in an 'idealised metrics map', that existing metrics contribute to coverage of the metrics challenges and identifies gaps in this
- **Step 3** provides a methodology to reconcile the 'idealised metrics map' generated in Step 2 with the practical realities affecting metrics imposed by the specific constraints of individual adaptation projects.
- **Step 4** highlights the role of learning, feedback and revision obtained from AMME Framework applications, both for local projects and on the wider mapping evaluation.

## A rational foundation for metrics evaluation

The AMME Framework provides a rational process for the evaluation of metrics; for more extensive or complex areas of interest it can be a starting point for more sophisticated analysis and evaluation.

# 1. Introduction

The Adaptation Metrics Mapping Evaluation (AMME) Framework aims to guide the formulation of good practice in the choice and development of appropriate metrics for the wide array of different contexts related to climate adaptation. It provides a systematic assessment process for understanding how metrics relate to their potential range of purposes for a given context. Recognition of different stakeholders, their needs for metrics and their engagement in the process of their development and application is a central focus of the AMME Framework.

In this section the context for the Framework is outlined together with an overview of the structure of this document.

## 1.1. Climate Change Adaptation Metrics

The IPCC defines adaptation to climate change as ‘the process of adjustment to actual or expected climate and its effects.’ Adaptation to climate change aims to reduce the negative impacts of climate change, while also seeking to create new opportunities that could arise as a result of this change. Metrics refers to ‘a group of values (measures) that taken together give a broader indication of the state or the degree of progress to some desired state’ (IPCC, p.837). The AMME Framework combines these terms to define adaptation metrics as ‘the group or groups of values that give an indication of the degree of progress towards positive adjustment to climate and its effects.’ The AMME Framework is a contribution to these challenges of measuring current and potential adaptation to climate change.

Adaptation is distinct from climate mitigation. With the latter there are clearly definable physical objectives with the emphasis on limiting greenhouse gas levels in the atmosphere. By contrast, climate change adaptation is a much more complex challenge which can encompass a very wide range of physical, social, environmental and economic aspects and corresponding objectives across variable timescales.

Governments and communities worldwide are now concentrated on how to observe and evaluate the results of adaptation investments. Adaptation metrics are essential to enable this and include assessing climate vulnerability, risk, resilience or impacts, as well as tracking adaptation responses and outcomes. Metrics are essential for: guiding decision making; informing implementation progress, effectiveness and efficiency; appraising investment; and adaptation learning. An overview of recent initiatives and work in this field is set out in more detail in section 2.

## 1.2. The International Platform on Adaptation Metrics (IPAM)

The International Platform on Adaptation Metrics (IPAM) was launched in 2020 as the culmination of adaptation metrics convenings launched by the Moroccan Presidency of Conference of Parties to the UN Framework Conventions on Climate Change (COP22).

The aim of IPAM is to serve as an international reference platform for adaptation metrics. It seeks to co-develop metrics and tools in response to emerging adaptation needs, and IPAM also to create synergies among its members. IPAM structures its work in dedicated sector-oriented committees such as agriculture, cities, and water. It also addresses challenges such as cross-sectoral metrics harmonisation, and the identification and application of appropriate techniques and tools for metrics.

To make sense of the adaptation landscape, offer better clarity on metrics approaches and capacity requirements and, ultimately, to provide better information for decision making, IPAM has created the Adaptation Metrics Mapping Evaluation Work Programme (AMME Work Programme) as its first step in this direction comprising a series of ‘metrics mapping evaluations’. The outputs of these exercises are intended for use in a variety of adaptation applications including specific projects, policy making and monitoring and evaluation.

The mapping evaluations are, in turn, supported and guided by this AMME Framework; a methodology for evaluating and deploying metrics. How the AMME Work Programme and the AMME Framework relate to each other is set out in section 3, and the AMME Framework and its implementation process, in detail, in sections 4 and 5.

### 1.3. Document Overview

Following this introduction, the background to the development of the AMME Framework is described in section 2 with reference to recent adaptation metrics initiatives and work in the field.

In section 3, an overview of relationship between the AMME Work Programme and AMME Framework is outlined and, in section 4 the elements of the AMME Framework and how they are used to evaluate existing metrics and identify potential gaps in their coverage. This is achieved by viewing five universal features (or aspects) of adaptation projects through three different 'lenses' which provide important focuses. How the aspects and lenses are combined to provide the overall mapping evaluation are set out in guidance for the practical implementation of the AMME Framework in section 5.

## 2. Context for Adaptation Metrics

There has been extensive work on climate adaptation metrics, their development and application in recent years which articulates key challenges and tensions in choice and use of metrics across a wide range of different contexts and purposes. Key insights arising from this are set out here and this acts as a background rationale for the AMME Framework.

The IPCC Fifth Assessment Report (Noble, et al., 2014) discusses both ‘adaptation’ and ‘metrics’, noting that adaptation is “*the process of adjustment to actual or expected climate and its effects...*” and a metric is “*a group of values (measures) that taken together give a broader indication of the state or the degree of progress to some desired state*”. It further makes the point that a meaning of adaptation is emerging to incorporate a “degree of purposefulness” (IPCC, p. 837).

Adaptation takes place in a wide variety of contexts, for example across different scales, sectors, and geographies. These may include:

- changes in practices (e.g., soil management and crop rotation),
- changes in infrastructure (e.g., creating new physical flood defences),
- introduction and prioritisation of adaptation policies, programmes (e.g., building codes or local infrastructure subsidies), and;
- adaptation plans, (e.g., ‘future proofing’ land use planning to take account of climate impacts).

Taken together, ‘adaptation’ and ‘metrics’ indicate a sense of purpose and progress and this is central to an ability to comprehend and act upon the challenges of adaptation to climate change. However, a lack of consensus on identifying and deploying appropriate adaptation metrics holds back many tasks: robust project monitoring and outcome evaluation; project finance; policymaking; and learning for improving adaptation practices. Specific metrics may be more suitable for certain users and user needs, scales, locations and timeframes, than others. The relevance and contribution of metrics also depends on the availability of data and the tools and techniques for its analysis and evaluation.

### 2.1. Adaptation Metrics: Key issues

#### 2.1.1. The Global Goal on Adaptation: Measuring its dimensions

The field of adaptation metrics has evolved considerably over the past twenty years and particularly under the United Nations Framework Convention on Climate Change (UNFCCC). The term ‘metrics’ can cover an enormous range from, for example, the ‘degree of vulnerability’ of a country to climate change effects, to monitoring and evaluating adaptation actions at sectoral, regional and national levels. An emerging priority is the review of the adequacy and effectiveness of adaptation and its funding support.

The Global Goal on Adaptation established in the 2015 Paris Agreement is a key driver for this and is precipitating debate and action ahead of the 2023 Global Stocktake. The Paris Agreement established a qualitative global goal on adaptation: “*enhancing adaptive capacity, strengthening resilience, and reducing vulnerability to climate change*” (UNFCCC, 2017).

The importance of monitoring, evaluating and supporting learning about adaptation was also recognised in Article 7 of the UNFCCC and a ‘transparency framework’ was established to track progress made in implementing Nationally Determined Contributions (NDCs) and to provide information related to climate change impacts and adaptation (Article 13). However, the Paris Agreement does not include any specific adaptation metrics or request their development.

Assessing climate adaptation progress on a global basis requires protocols and corresponding metrics that apply across countries and economic and natural systems as well as over time. However, unlike limits on greenhouse gas emissions, there is no simple, unique or universal adaptation metric given the complexity and ambiguity associated with climate adaptation (Ford, et al., 2015); (Hallegatte & Engle, 2019); (Magnan & Ribera). Context-specific vulnerabilities and needs vary widely across different regions and sectors (e.g. agriculture, water, energy), and across different scales (e.g. cities, regions, nations). There are also temporal, spatial, economic, social and cultural dimensions to be accounted for, and the diversity of resources and adaptive capacity available.



However, approaches to overcome some of these challenges have been proposed using 'proxy indicators' that can apply irrespective contexts such as regions, project types, or sectors. An example of one of these metrics is the Vulnerability Reduction Credit (VRC). This uses 'avoided climate impact costs' - together with per capita income – as a proxy for climate vulnerability reduction. The VRC provides a basis for comparisons across alternative adaptation measures and this serves as a starting point for understanding adaptation benefits (Schultz K. H., 2012).

### 2.1.2. Adaptation metrics for different needs

As adapting to climate change cuts across so many global human and environmental considerations, a wide variety of institutions and advocates for different interests are involved (Leiter, et al., 2019). Therefore, a rational process for taking adaptation decisions, is essential to contribute to their overall effectiveness and efficiency. The AMME Framework offers such a process for the consideration of appropriate metrics choice.

International responses to the 'Global Goal' both from Parties and non-state actors (such as local governments, private enterprises, non-governmental organizations, and sectoral interests) have articulated the complexities and relative suitability of metrics in different contexts. They raise the importance of adaptation metrics to inform decision-making from the likes of corporate business investors through to vulnerable communities at a local level who might lead their own adaptation actions.

As noted in the introduction, standards may also (if followed) serve as adaptation measures, and may play an important role in enabling adaptation and vulnerability reduction. For many organisations the standard ISO 14001, for environmental management systems, is deployed and includes specific elements for adaptation (International Organisation on Standards, 2016).

At the level of state-directed and international adaptation policies and programs, adaptation metrics challenges have been spelled out by a variety of organisations. Prominent among these is the Adaptation Committee to the UNFCCC, which has reviewed approaches to measuring overall progress made in achieving the Global Goal (Adaptation Committee, 2021) . This recognises the importance and challenges of developing metrics to do so and significant challenges and trade-offs in assessing collective progress are noted. The Adaptation Committee references a wide range of research literature highlighting not only methodological and empirical challenges, but also political sensitivities, and conceptual challenges regarding what actually counts as 'adaptation'.

To address the need for suitable adaptation metrics for the Global Goal, a number of frameworks and methodologies have been proposed, including the UNEP Adaptation Gap Report (UNEP, 2017) . This concluded that 'proximity-to-target' approaches, using governments' own targets as a benchmark, could be effective at addressing the issue of diverse national contexts. The Gap Report also notes that there has been a proliferation of these frameworks by academics, donors, national and sub-national governments. In addition, for the Global Goals, there are more specific approaches proposed such as that by the Institute for Sustainable Development and International Relations (IDDRI) GAP-Track approach which uses expert judgement to score progress at a national level (Magnan & Chastalani, 2019). However, any proposed framework needs to be underpinned by specific metrics and analysis.

The Global Goal on Adaptation also brings together actions beyond the strictly national level to include initiatives involving a diverse of range of businesses, NGOs, and sub-national government. This includes the 'Race to Resilience' initiative which encourages these actors to set 'resilience' targets. These also require a metrics framework, and this is currently under development (UNFCC, 2021).

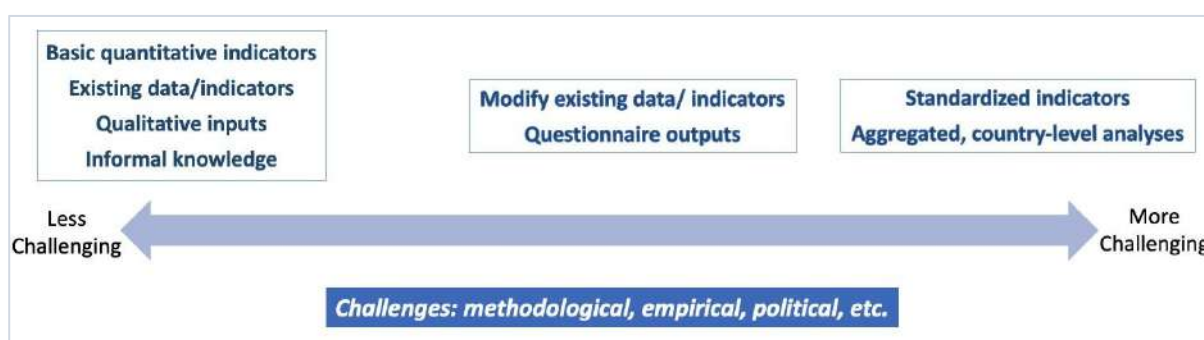
Another framework initiative, from the Financial Stability Board (FSB), is more directly targeted at the financial and business community: the Task Force on Climate Related Financial Disclosures (TCFD) (Financial Stability Board, 2021) . The importance of this is growing as is the number of businesses which are voluntarily or, increasingly, being required to prepare financial disclosures concerning both physical climate risk and transitional financial risks to their business. Efforts to clarify metrics are underway, as reflected in Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans (Task Force on Climate-Related Financial Disclosures, 2021) The TCFD guidance is further underpinned by other supporting initiatives for example on climate-related financial disclosure standards (Climate Disclosure Project et al., 2020). However, many of these initiatives have an emphasis on mitigation rather than adaptation (Schultz K. H., 2021).

Climate funds and international aid programs are another active driver for adaptation metrics thinking. Funders and project implementers - such as the Green Climate Fund (GCF) and the Adaptation Fund (established by the UNFCCC) - are particularly interested in how their funding results in positive aid and adaptation outcomes (see for example, World Bank Group, 2021). The question of what funding should be attributed to adaptation is currently an area of debate, as the funding levels for adaptation projects under the Paris Agreement (12% in 2017/2018) are to be equal to, but are currently significantly less than, that for mitigation projects (Climate Home News, 2021a, 2021b), and reporting by the Climate Policy Initiative (Buchner, et al., 2019) . This contrasts with stated aims made under the Paris Agreement that funding 'should represent a progression beyond previous efforts' (UNFCCC, 2017) . However, developed countries count almost three-quarters of climate finance as official development assistance (Mitchell, Ritchie, & Tahmasebi, 2021) . This has important implications for how adaptation project funding is attributed and for any associated metrics.

## 2.2. Adaptation Metrics: Key challenges

### 2.2.1. Tensions in metrics choice

The areas of debate discussed above about what metrics to apply and in which contexts, generally centre around a number of trade-offs in their design and application.



**Figure 1: Spectrum of approaches to assessing adaptation progress and magnitude of challenges**

(Adapted from Adaptation Committee, 2021)

The Adaptation Committee has identified a spectrum in the metrics response to these challenges which range from taking a relatively straightforward quantitative approach (for example, based on simple indicators), to more complex approaches which might include aggregate and standardised suites of indicators and sophisticated analytics (figure 1).

Different users, and their corresponding needs, may be at one end of the spectrum or the other - and many will have a need for a mix of approaches. While this may be necessary and appropriate for an individual project, it creates difficulty when attempting to draw more strategic comparisons between, for example, similar types of projects in other locations or, at the global level, attempting to measure progress towards achieving adaptation goals. Addressing this tension is the central technical challenge for the development, choice and use of adaptation metrics.

In starting to address this challenge, the Adaptation Gap Report (United Nations Environment Programme, 2017) suggests six desirable characteristics in adaptation metrics for integration into the Global Goal on Adaptation:

1. Aggregable
2. Transparent
3. Longitudinal
4. Feasible
5. Coherent
6. Sensitive to national context

Each of these criteria offers both advantages and disadvantages in its capacity to meet specific, desired goals and the AMME Framework guides the evaluation of metrics along these lines (Section 3 below). For example, aggregation in data is a desirable objective as it enables global progress to be understood and accounted for while, at the same time, identifying where more support might need to be given at a national or regional level.

However, the choice of indicators that enable aggregate metrics, may be limited by the availability of data which limits its coverage or risks distorting decisions based upon it. International comparisons might therefore be less accurate. Conversely, the criterion 'sensitivity to national contexts' is very important in order to understand the differences in needs, capacities, and data resources. While these criteria were designed to address a specific adaptation metrics challenge, the Global Goal, they apply more generally to challenges of integrating metrics across different scales and other contexts.

A further point of tension which recurs frequently in the climate change adaptation literature is that involving competing ethical and political considerations. These have implicit - as well as often explicit - impacts on metrics formation and use. Metrics may be used to measure what a particular user or user group wants to measure in relation to their desired outcomes, but this may not match the needs of others, in particular disadvantaged groups with a lack of political or financial capital, that limits their access to and influence in determining the metrics used. Metrics might also be used to create - intentionally or otherwise - false incentives (Leiter, et al., 2019) , that may lead to decisions which exacerbate inequities, and disparate power relations.

### 2.2.2. Definitions

One of the most considerable challenges and tensions can be caused through confusion over definitions. Clarity of terminology is essential to reduce misunderstanding and confusion that may obstruct accurate analysis and informed decision making, and risking mistakes or inaction. Ambiguity of terminology may even go so far as to result in legal disputes or political conflicts.

This includes not only definitions of particular metrics, but also for how systems facing climate impacts and adaptations might be categorised (i.e., taxonomies). Without clarity of the terms used in taxonomies, there is a risk of conflict over defining and applying thresholds. This in turn may have serious implications for decisions regarding issues such as funding or prioritisation.

Another challenge of clarity relates to how agents in particular contexts understand or define the same metrics terminology in different ways. Examples might include relative perspectives of rural and urban dwellers, different professional groups, or between different cultures and countries. An ability to develop and share a common understanding of terms (also called 'harmonisation' or 'translation') is essential to avoid confusion and underpin better decision making.

### 2.2.3. Challenges: The IPAM response

The objective of the AMME Framework is to make sense of the challenges, tensions and trade-offs between alternative approaches to adaptation metrics. Doing so requires a coherent effort to map and evaluate how metrics might apply in different contexts and support users of metrics in their appropriate choice and deployment in support of better decision making in the field of climate adaptation.

### 3. Overview of the AMME Work Programme and Framework

As previously noted, governments and communities worldwide are currently initiating adaptation actions and observing and evaluating the results of current and past adaptation investments. From this starting point, IPAM has identified the following priority areas for work which focus on identification, monitoring, and evaluation of:

- Adaptation metrics, as currently used and applied globally and across different sectors;
- Stakeholders and their needs for, and their perception of, adaptation metrics, measurement frameworks and tools for evaluation; and
- Solutions to develop aggregable, longitudinal and coherent adaptation metrics that respond to the global need for measuring adaptation progress.

The AMME Work Programme builds upon and supports the work, goals, and principles of international agreements including the Paris Agreement, Sendai Framework on Disaster Risk Reduction, and the SDGs. In addition, the programme also aligns with initiatives such as those of the World Adaptation Science Programme, Global Center on Adaptation, Race to Resilience, Global Resilience Knowledge Coalition, and the Adaptation Research Alliance (Adaptation Research Alliance, 2021).

The AMME Work Programme seeks to support better understanding and deployment of metrics for adaptation project design, prioritisation, and funding. The outputs of metrics mapping evaluations – the maps – are intended to improve decision making for adaptation projects, policy making, and monitoring and evaluation. The Work Programme does not focus on managing individual climate change adaptation projects, but on developing overviews and evaluating - or mapping - metrics across relevant and topical subject areas. In this way it provides a point of expert reference and practical support for the use of metrics in specific climate adaptation projects. The box illustrates the distinction between an adaptation project and a metrics mapping evaluation. A metrics mapping evaluation offers more than a simple review of existing metrics in a particular field of interest, however; it also offers a process for identifying gaps where potentially relevant, new metrics might be developed, and for wider cross-sectoral metrics issues to be addressed. For example - again in the ‘transportation networks flooding’ scenario – this would mean mapping, evaluating and developing metrics which take into account links between network disruption, economic impact, and the equity in transport provision could be of relevance to explore across operational and policy areas.

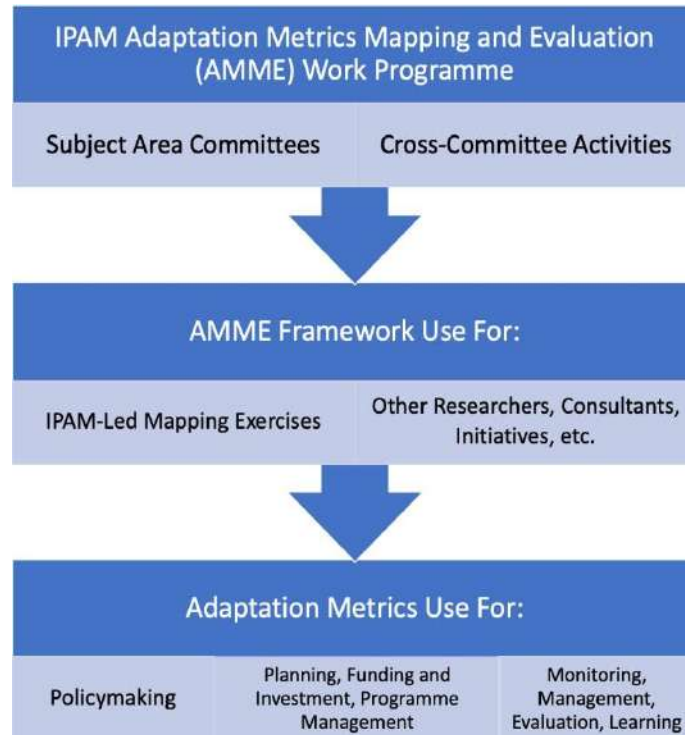
#### ***The Difference Between ‘Mapping Evaluations’ and ‘Adaptation Projects’***

*For example an individual climate change adaptation project might be to assess the impact of increased flooding events for urban transport networks in a particular city. Metrics to monitor and evaluate current and future scenarios of the impact of different adaptation interventions will be required and many of these will be context-specific to the particular networks and location.*

*However, there will also be many similarities with metrics for similar transport flooding adaptation projects in other cities or countries. Some of these metrics will not be context-specific; others may be readily adaptable so there is an opportunity to quickly learn and absorb lessons and experience in ways which an individual project team may not have the resources to access independently. In this example a readily available ‘metrics mapping’ might take a broad perspective of ‘flooding adaptation for transport networks’ and provide an initial reference source and a starting point for application of metrics in an individual, location-specific setting.*

This is where the AMME Framework comes into play by providing a guide to the process of evaluating existing metrics and identifying gaps (figure 2). It can support adaptation project experts in different fields to better understand the potential variety and purpose of metrics and their applications. The AMME Framework is a systematic guide to evaluating appropriate metrics in a given mapping context and its application precedes and sets the basis for choice or design of specific metrics for use in an individual adaptation project.

As well as guiding the AMME Work Programme, the AMME Framework can also be used by third parties such as research and academic institutes, government departments, NGOs, and consultancies.



*Figure 2: The Relationship between the AMME Framework and AMME Work Programme*

## 4. The AMME Framework: Metrics Aspects and Lenses

The AMME Framework comes to life through the interplay of five key 'aspects' of the process of adaptation mapping evaluation, as seen through the perspectives of three key 'lenses'. The Framework needs to be both comprehensive in its consideration of metrics mapping evaluation aspects which pertain to all AMME activities while, at the same time, retaining the capacity for encompassing future developments in metrics and evaluation practices.

### 4.1. Metrics Aspects

The five key aspects of metrics mapping are:

1. **Purpose for evaluating metrics.** The reason for undertaking mapping evaluation; for example, may be for prioritising between projects, supporting funding applications, contributing to good practice in metrics development and application; developing more sophistication and precision in metrics and analytical methodologies; encouraging user participation and engagement.
2. **Stakeholder Engagement, Participation and Communication Strategies.** One of the most important aspects of any project is to establish the people - individuals and groups - for whom metrics are designed to provide support, and how they might use and interpret them. Metrics are needed to demonstrate appropriate stakeholder engagement and participation and also to assess how these are communicated.
3. **Stakeholder Competencies and Capacities.** The ability and capacity for people that will use metrics and analytical tools needs to be taken into consideration in terms of their skills, time, financial resources, and access to data and technologies.
4. **Data and Information:** This aspect is central to the quality, provenance, and design of metrics and other analytical tools. The danger lies in designing metrics to fit the data available, rather than having a clear plan of what metrics are required for the purposes of the mapping evaluation and for this reason taking an 'ideal metrics' perspective as a starting point – deliberately disregarding any data or other real world constraints– is crucial for obtaining a systematic and objective perspective on metrics requirements.
5. **Evaluation and Good Practice:** This focuses on the appropriate analysis and interpretation of metrics in alignment with the project purpose, stakeholder objectives and good practice. Evaluation needs to consider both broader ethical perspectives and specific adaptation objectives that, together, define the success of an adaptation initiative. A 'good practice' evaluation will also encourage learning outcomes from projects.

Different adaptation applications will have different emphases on some aspects compared with others, but it is important to apply all aspects in every mapping evaluation.

### 4.2. Metrics Lenses

The Adaptation Gap Report (UNEP, 2017) proposed six desirable characteristics for metrics which will track progress on the Global Goal on Adaptation (see section 2.2.1). The AMME Framework builds on this idea and extends it to apply across all adaptation contexts, through the application of 'lenses'. These provide an evaluative focus for three fundamental considerations common to all adaptation projects. These lenses are:

1. Stakeholders and Stakeholder Needs
2. Systems
3. Information for Decision Making

The lenses provide a set of complementary and overlapping perspectives all of which have direct relevance in any given metrics mapping evaluation project. Each lens will have a variable degree of coverage and focus which will depend on the precise purpose and objectives of a given mapping evaluation exercise. Sometimes the exercise will have a narrow, technical remit; in other cases, there may be large-scale

community involvement with multiple objectives to take into account. Some mappings will have a short-term time horizon or small spatial coverage; others may cover a large geographical area and with several project time horizons.



Figure 3: The AMME Lenses

The lens perspectives (figure 3) all overlap each other, and the degree to which they do so will automatically adjust to provide a consistently rounded view of a potential mapping and its impact. In this way they enable aims and objectives to drive the data, metrics, and analytical requirements rather than have them constrained from the outset by whatever data and information happen to be at hand.

Each of the three lenses is described separately below and illustrated by means of a set of 'water resource scenarios' based around characteristics of two fictitious countries: Upper and Lower Wash (figure 4). Upper Wash: the wealthier of the two countries has a mountainous terrain and is affected by climate change bringing increased occurrences of flooding.

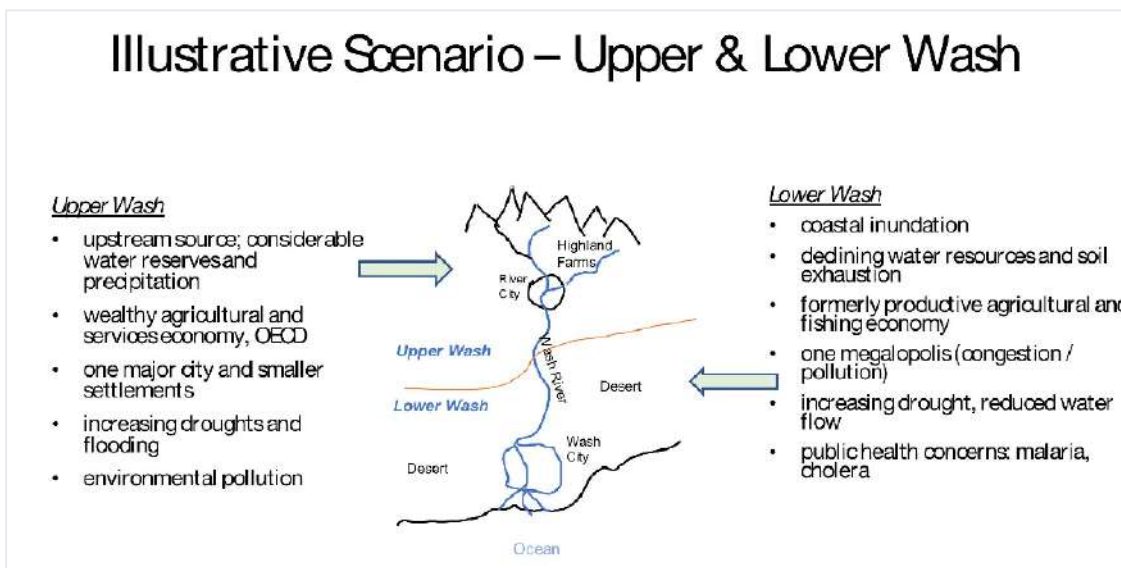


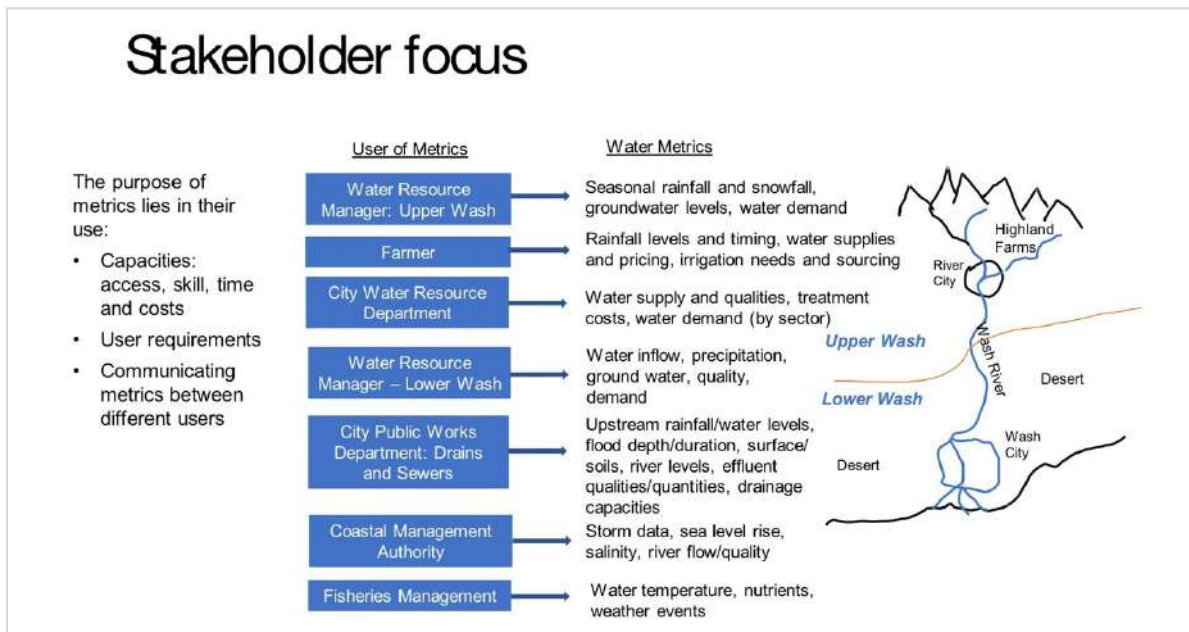
Figure 4: Upper & Lower Wash scenario

Its downstream neighbour – Lower Wash – has more significant problems including desertification and declining water resources that endanger food security. Migrants from the land are risk overwhelming the main city and its public services, and there are public health concerns arising from overcrowding and water quality concerns.

Many mappings could be established to address some, or all, of the issues connected with metrics and evaluation highlighted in this scenario. In the following sections, 'water resource issues' is used as a common theme to illustrate how this might be viewed through the different lenses.

#### 4.2.1. Lens: Stakeholders and stakeholder needs

All projects will have stakeholders with associated needs. They include those directly commissioning, funding and managing an adaptation policy, programme, or project - for example funding or commissioning organisations - as well as communities who are directly or indirectly affected by the project outcomes and decisions based upon them (and whether as beneficiaries or otherwise).



**Figure 5: Water issues scenario: the user and user needs lens**

Examples from the water resource scenario are shown in figure 5. Some needs might be relatively narrowly defined (for example, technical learning derived from managing the project, or responsibilities for specific areas of water management such as the 'Water Resources Manager' in this scenario). Others are wider in scope: the inhabitants of Wash City will have very diverse water needs, ranging from drinking to industrial and waste purposes. This, in turn, may lead quickly to identifying greater discretion between groups.

Defining stakeholders and their needs in this way is crucial to establishing the scope, coverage and impact of any project and ensure an understanding of the connections between the project purpose and those it will impact upon. The insights gained from the stakeholder perspectives lens will then guide the choice of metrics, analytical techniques and tools which are appropriate to enabling stakeholder engagement and evaluate how their needs might be met by the project outcomes.

#### 4.2.2. Lens: Systems perspective

The systems lens perspective is about understanding the wider scope, scale and interconnectedness of the adaptation measure (figure 6). An important reason for taking a systems perspective is to explore and understand how adaptation outputs and outcomes might be 'mainstreamed' so they become an integral component either in support of existing systems and processes – or assisting in their transformation. Two key features of taking a systems perspective are:

- The capacity for a system to be disaggregated into component subsystems which can be relevant for increasing understanding of the adaptation intervention.
- 'Feedback' which is an inherent feature of a systems approach and which can result in greater clarity and realism over how the system functions and what potential effects for intervention outcomes.



# Systems perspectives

Metrics need to take account of:

- timescale
- changing definitions
- appropriate/ timely communication
- decision-making purposes and their timescales

## Water supply

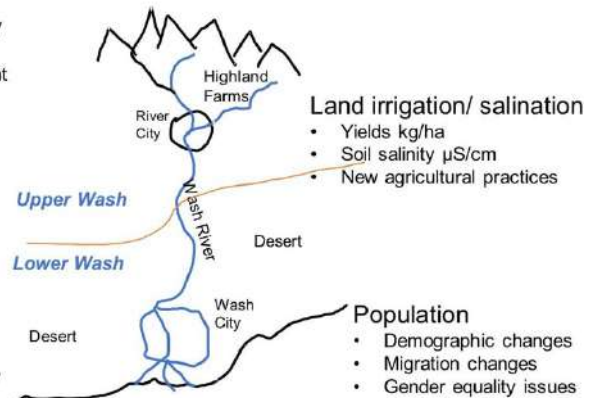
- Precipitation vol/ frequency
- Reservoir / river levels
- frequency/ extent

## Population health

- Cholera incidence/1000
- Pollutants – parts/million

## Economic and political impacts

- Agric : urban contribution to economy
- Popn % in education
- Rate of investment in water infrastructure
- Influence of water issues on national/ international politics



## Land irrigation/ salination

- Yields kg/ha
- Soil salinity  $\mu\text{S/cm}$
- New agricultural practices

## Population

- Demographic changes
- Migration changes
- Gender equality issues

Figure 6: Water issues scenario: the systems lens

Taking a systems perspective therefore includes identifying:

- Aspects of an intervention which directly address climate vulnerability and climate adaptation, and their interface with more mainstream, 'business as usual' activities, investments, plans, etc.,
- Systems, and system boundaries (these could be described in physical or spatial terms as well as conceptual distinctions such as socio-economic groups);
- Those connections which need to be made beyond across 'boundaries' to other systems (which may provide inputs to, or receive outputs from, the intervention);
- Appropriate scales (temporal, spatial, political and economic) which need to be taken into account (for example, whether the adaptation is focused on short-term operational or longer-term strategic issues, or both).

With complex projects there are likely to be several of these dimensions operating simultaneously. In the water resources scenario this might involve looking at the focus of a water resources climate adaptation project in different ways (for example, its natural watershed, or its value to a local industry). However, both of these subsystems will have feedback implications for each other.

Taking a 'systems lens' view in this way enables potential synergies between different aspects of the adaptation intervention to become apparent and their feedback effects considered. Once a systems perspective is established then relevant metrics and techniques which will best support the intervention and will be more clearly understood and focused.

### 4.2.3. Lens: Information for decision making

An 'information for decision making' lens is crucial as it provides the ultimate focus for any adaptation measure given that – whatever their scope or scale – they all have a purpose which is to provide data and information on which decisions concerning policy or operations will depend.

This also directly supports both the stakeholder and systems lens perspectives as it maintains a focus on decision points. Such decision points include those directly related to the project process itself as well as its objectives and outcomes. The converse is also true; the other lenses can help to identify decision making points which may not be immediately obvious from the start. There are, in addition, often other decision points which may be indirectly attributable to an intervention – for example where adaptation outcomes are only realised over a very long period of time or where impacts were unforeseen from the start.

In relation to the water resources scenario, if construction of a dam was an adaptation project outcome it might be decades before some of its environmental impacts become apparent (for example, an increase in waterborne disease vectors, or whether an irrigation project to support farmers adapting to dryer climatic

conditions prevents unnecessary economic migration from the land). In addition, the outputs of many projects add to a wider body of knowledge which can be influential for decision making, even if not directly attributable.

This lens focuses attention not only on who the decision makers are, but also helps to identify relevant data, metrics, analyses and know-how required and how they might best be communicated and applied. The lens also provides a focus on when and where decision making points might lie on the project timeline. If a project is too ambitious, or poorly managed, for example, and has expensive cost overruns or fails to deliver the right information at the right time, then it may have potentially catastrophic implications for its validity, acceptance, or utility.

# 5. Implementing the AMME Framework

The three lenses – stakeholders, systems, and information for decision making – are each used to view each of the five aspects, with attention being paid to noting and maintaining definitions throughout the process.

Metrics mapping designs need to be comprehensive in their coverage of aspects and be sensitive to the context in which they are applied. Note that in describing the lens/ aspect pairings there is some degree of overlap and restatement between them. Where this happens, it serves to emphasise the importance of the particular pairing in the given context.

This section sets out the tasks which need to be implemented through a set of ‘action checklists.’

## 5.1. The Implementation Process

A fundamental objective of AMME Framework mapping evaluations is to provide depth and breadth in the evaluation of relevant metrics for a given adaptation context. This requires more than a simple overview of existing metrics; there needs to be a consideration of what is an ‘ideal set’ of relevant metrics which could - and should be – available to address the specific challenges and requirements in a given mapping context. It is this insight which the aspects and lenses analysis of the AMME Framework seeks to provide.

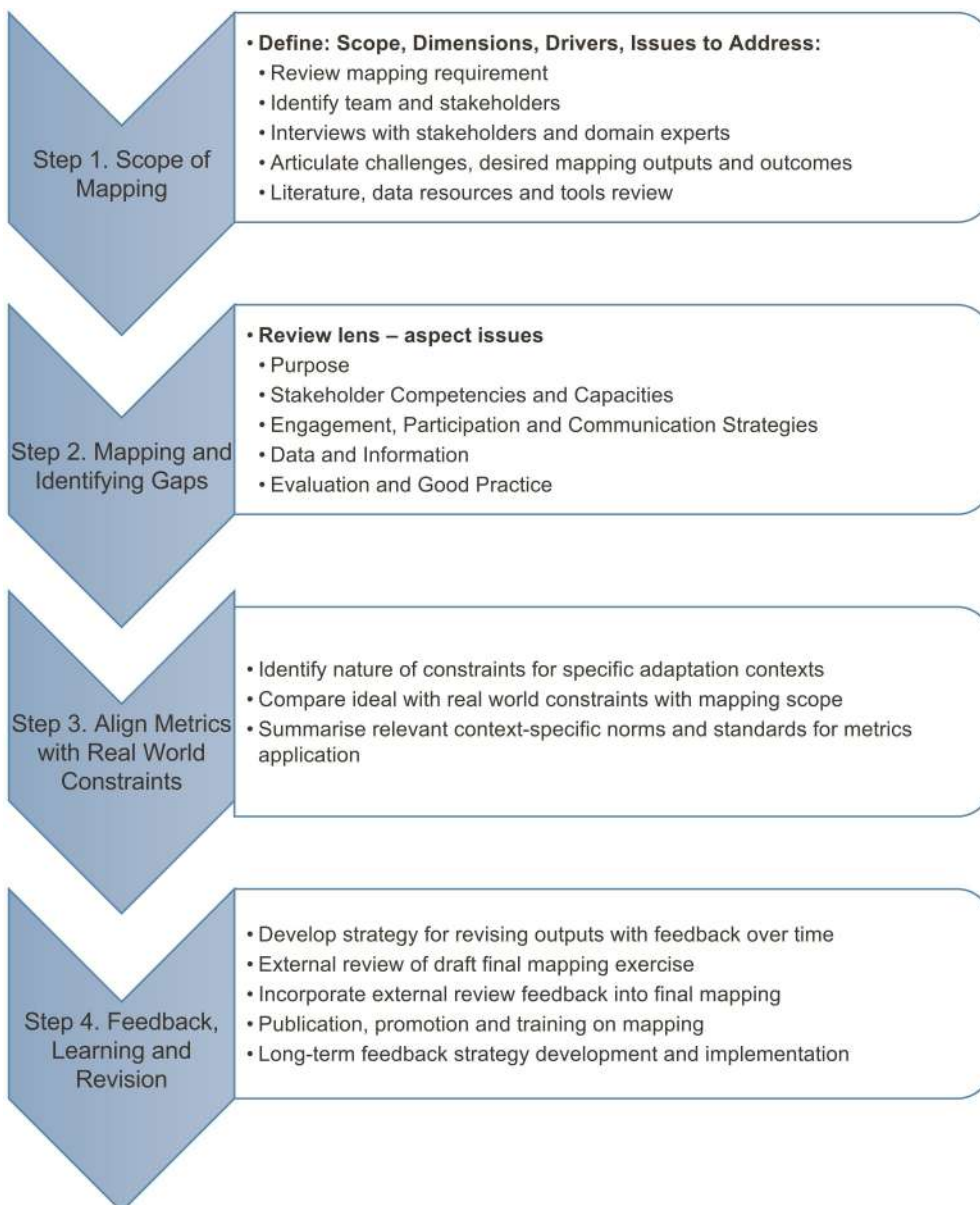


Figure 7: AMME Framework implementation steps

This means that, once the basic scope of the mapping exercise including its key sectors - has been established (**Step 1**), the next step is to identify to the extent to which metrics not only already cover this scope, but what the gaps are in this coverage which metrics either are addressing insufficiently, or not at all (**Step 2**) This is where having an 'ideal metrics map' is essential for providing a 'direction of travel' for the improvement and development of metrics. Without it there is always a danger that metrics will only be focused on 'what can (easily) be measured', and system inertia of 'measurements have always been done this way' will be an obstacle to improving and adapting to new and relevant circumstances and conditions.

Only after an 'ideal mapping' has been established is it time to consider its feasibility in relation to the practical constraints of a specific adaptation project (**Step 3**). This provides a set of generalised guidance principles to support local adaptation project managers in this process.

Finally, **Step 4** describes how a metrics mapping might be sustained. This includes tasks focused on planning for feedback and learning processes which will contribute to continuous improvement of the mapping, and dissemination and training requirements for adaptation project managers.

The AMME Framework applies these same four steps (figure 7) to **all** metrics mapping evaluations, regardless of subject, although the time taken to go through each of them will depend on the size of the mapping evaluation scope and the extent to which there is existing relevant metrics materials to be assessed.

The Framework brings a common approach and clarity to this diversity. It encourages 'creative tension' between the need to balance flexibility and accountability for specific subject contexts on one hand with a procedurally rational approach in the design and application of metrics and their evaluation on the other.

Throughout each step of a mapping evaluation, it is crucial to pay attention to clarity and consistency in the use of definitions and taxonomies. This is also important for maintaining consistency across the AMME Work Programme generally.

## 5.2. Implementation Steps and Action Checklists

### 5.2.1. Step 1: Clarifying the metrics mapping requirements

The first step in applying the AMME Framework is to clarify in detail the purpose, scope, and resources required to undertake the mapping evaluation, including, critically, the team composition. This will need to reflect stakeholder interests and also incorporate – or have access to – relevant domain expertise. The ability to view a wider 'whole system' perspective is very important in ensuring the bigger picture is seen from the mapping exercise outset. This will help with identifying any relevant challenges at an early stage that a mapping evaluation should cover. By 'challenges' we mean the articulation of different issues or problems within the overall scope of a mapping evaluation.

The focus of a single metrics challenge may span different scales or sectors. For instance, a specific challenge in a metrics mapping evaluation for urban metro systems facing greater flooding risks could be how increased flooding and related adaptation measures impact urban water quality and health systems. A consequent challenge might be balancing competing objectives - such as the resilience of the metro system to flooding against drinking water quality - all within resource limitations. Metrics will be needed to understand the challenge and support decision-making to tackle it and the mapping team needs to identify and assess potential challenges at an early stage in the mapping evaluation.

### Step 1 (Scoping) Checklist:

- ✓ Review of the initial mapping requirement, considering:
  - Desired objectives, outcomes and outputs
  - Geography and other spheres of action and corresponding boundaries
  - Stakeholders and targeted users
  - Challenges that mapping addresses
- ✓ Identify and recruit range of requisite mapping exercise team skills and expertise.
- ✓ Identify and engage with appropriate stakeholder and expert constituencies.
- ✓ Interviews with mapping exercise stakeholders and domain experts to understand the mapping scope envisaged.
- ✓ Articulate potentially relevant challenges within the mapping exercise scope.
- ✓ Review of relevant literature, data resources, and tools.
- ✓ Revisit, revise and articulate desired mapping outputs and outcomes.
- ✓ Formulate an approach to evaluate the mapping with stakeholder input, and outline how metrics mapping may be monitored over time.

All of these actions should be seen as an iterative, 'co-productive' endeavour with involvement of stakeholders because, as the scoping element of Step 1 proceeds, new avenues to explore or include may require review and revision of initial ideas and mapping deliverables along the way. The AMME Framework provides a 'guiding process' for encouraging the mapping evaluation team to adopt a wide perspective from the outset and describe and define those elements which ultimately define the scope relative to its required purpose.

#### 5.2.2. Step 2: mapping existing metrics and gaps in their coverage

Once there is a clear picture of the scope of the mapping evaluation, the next - and key step - is to use the AMME action checklists to map available metrics in relation to aspects and lenses and identify gaps in coverage where the scope of new relevant metrics might be described.

Note that all of the five 'metrics aspects' - outlined in section 4.1 - apply in **all** mapping evaluations. Each aspect needs to be reviewed through each lens (section 4.2) in order to confirm whether or not they are relevant or require further investigation. Each aspect is reprised below together with applications of each of the lenses.



Figure 8: Applying AMME Framework lenses to aspects

The resultant sets of 'action checklists' take into account the different lens perspectives which are used to map available metrics and flag potential gaps.

The overall process requires clear definitions and classifications of all metrics and terms used as the process unfolds which supports clarity of communication and understanding. This is a continuous activity throughout the mapping evaluation and will also benefit from the literature review undertaken in step 1.

The AMME Framework matrix (figure 9) provides a means for assessing existing available metrics coverage and identify gaps where metrics development might be needed. At its most basic it may only be necessary to identify a simple 'yes/no' connection between an existing metric and a particular lens-aspect pairing. However, this could be developed further to consider more detailed quantitative and qualitative associations.

### AMME FRAMEWORK: Metrics assessment tool

The AMME Matrix Assessment Tool is a systematic framework for evaluating existing metrics and identifying gaps in coverage.

The measurement scale is user-defined. It can be yes/no, quantitative, descriptive or a mixture. This will depend on the mapping requirement, local context and ease of acquiring data.

(The current pilot version of the matrix enables 'yes/no' or simple numerical values only).



International Platform on Adaptation Metrics

AMME Work Programme

#### Mapping Evaluation Example:

*Urban metro system resilience in the face of increasing climate change induced flood risks*

**Adaptation Challenge 1: Maintaining train operation frequencies without additional health and safety risks**

	Existing available metric?	Aspects & Lenses								
		A1: Purpose			A2: Stakeholder engagement			A3: Competencies & capacities		
		Stakeholders	Systems	Dec Making	Stakeholders	Systems	Dec Making	Stakeholders	Systems	Dec Making
Number of days/year with 95%+ trains on-time	YES	x	x	x	x	x	x			
Passenger accidents/year (hospitalisation or death)	YES	x				x	x			x
Number of days/year with urban drainage systems over capacity	NO		x	x	x	x				x
Additional metric 1										
Additional metric 2										

**Adaptation Challenge 2: Maintaining ground-water quality through prevention of leachate from metro system flooding**

		Aspects & Lenses								
		Aspect 1: Purpose			Aspect 2: Stakeholder engagement			A3: Competencies & capacities		
		Lens 1	Lens 2	Lens 3	Lens 1	Lens 2	Lens 3	Lens 1	Lens 2	Lens 3
Contaminants (ppm) within 50 m of metro system after flooding event										x
Number people/100,000 reporting gastro-intestinal ailments after flooding event										x
Etc.										

**Adaptation Challenge 3:.....**

Figure 9: Indicative Mapping Evaluation Matrix

### 5.2.2.1. Purpose of mapping evaluation

This entails clarifying and defining the purpose of the metrics application within the scope of the mapping evaluation. This might include, for example: metrics to support prioritisation or funding between different adaptation projects; the development of greater sophistication and precision in metrics and analytical methodologies; or encouragement of stakeholder participation and engagement.

#### Stakeholders and stakeholder needs

Identifying relevant stakeholders, their needs, and levels of influence in the project is fundamental to any mapping. Understanding how project purpose and outcomes impact upon - or are influenced by - these is the primary focus of this lens.

Metrics need to be able to inform how an adaptation measure will impact different stakeholders, particularly if it is complex or has outcomes which may only emerge after a long period of time.

AMME Framework mapping proposals firstly need to set out strategies for identifying potential stakeholders. They might be, for example, a farming community needing to respond to desertification, or the engineers responsible for managing a water supply company. Once stakeholders are identified, their specific needs can be determined and corresponding metrics formulated.

#### Systems

Where there are multiple purposes or outcomes envisaged for an adaptation intervention, these need to be understood within and outside the boundary of the scope of the intervention. These purposes might have unintended consequences (good or bad); the more these can be identified and addressed in advance by taking a systematic approach to the intervention, the more readily they can be taken into account.

A systematic review of the project purpose(s) will also include consideration of geographical coverage and reach such as natural environmental systems (e.g., watersheds), or societal systems (e.g., community hierarchies; economic and financial systems).

#### Information for decision making

This is a particularly important lens in the context of intervention purpose as it goes to the heart of why any intervention is proposed, formulated and actioned. Understanding how the purpose relates to decision makers and the decision-making processes is key to its success and might jeopardise the adaptation if not taken into consideration.

#### **Step 2 'Purpose' Checklist:**

- ✓ *Identify and define the key purpose(s) of the metrics and what would ideally inform that this purpose is being met in a systematic manner (i.e. explicitly recording what is included or excluded in the process of assessment).*
- ✓ *Identify the purpose that stakeholders in the mapping exercise metrics have in using them. This includes stakeholders who have initiated the exercise as well as wider groups who are potentially impacted by the scope of the investigation. This will require also require development of an appropriate stakeholder engagement strategy and metrics to ascertain this engagement process.*
- ✓ *Identify how the purposes of the mapping exercise correspond with relevant decision making processes and metrics to determine this. For example, meeting particular decision timelines for funding or adaptation project initiation.*

### 5.2.2.2. Stakeholder engagement, participation, and communication strategies

One of the most important aspects of any project is to establish the people - individuals and groups - for whom metrics are designed to provide support, and how they might use and interpret them. Metrics are needed to demonstrate appropriate stakeholder engagement and participation and also to assess how these are communicated. Metrics which illustrate participation and engagement of stakeholders are important since the success of an adaptation intervention requires ownership and implementation of outcomes.

#### Stakeholders

There may be a wide range of reasons and incentives for stakeholder participation in an adaptation project. For example, those who are particularly vulnerable to climate impacts, any reduction in their vulnerability, or enhanced adaptive capacity is an inherent spur for their engagement. For those involved in the implementation of the project there may be other motivations including: political; ethical; regulatory; or financial. Understanding these different drivers is fundamental to the operation and success of the project and the choice of metrics to account for them. It also has implications for the development of appropriate and effective engagement strategies.

Metrics, their analysis and the messages arising from their evaluation, can quickly become highly charged and emotive where there are stakeholder concerns (for example over perceived harm to particular stakeholders arising from project outcomes). Even if transparency, accountability and objectivity are held up as project standards, these values can be undermined or rendered invalid through misuse, misunderstanding, or inappropriate choice of metrics.

Different stakeholders will have different metrics communication requirements. This requires a tailored approach to identify appropriate channels and message. For example, what academic researchers would expect will not be suitable for non-academic audiences, and demographic and cultural differences will also need to be considered.

#### Systems

Participation and engagement can be viewed as a subsystem of an adaptation intervention and as such is about understanding how those aspects are appropriately targeted and connect with different stakeholder groups. How the feedback process from those different groups is then analysed and integrated into the intervention is crucial; the implication being that there may be multiple channels to be considered and resourced and that there may be subsequent implications for other aspects of the intervention. A systems approach to communication needs to consider the infrastructure support for collating the necessary data and information.

#### Information for decision making

The requirements for metrics to contribute to decision making processes are twofold: on one hand metrics will be needed to identify the range of the stakeholder groups to be involved and the nature of their potential engagement and, on the other, there will also be a need for decision makers to know the extent to which this has taken place. The choice of metrics, how they are evaluated, and the outcome of messages communicated to decision makers is the ultimate test of the success of an adaptation measure.

#### **Step 2 'Engagement, Participation and Communication Strategies' Checklist:**

- ✓ *Identify and define metrics which will systematically establish the range of stakeholder groups and the extent of their engagement.*
- ✓ *Define metrics for calibrating the appropriate size and capacity of relevant channels for participation, engagement and the implications for managing feedback.*
- ✓ *Develop identify and evaluate, if available, a subset of metrics which focus particularly on the engagement and participation of stakeholders involved in decision making processes.*
- ✓ *Identify the key stakeholder audiences and ideal channels for dissemination and communication.*
- ✓ *Map the current communication and dissemination systems and information flows for metrics and identify gaps; develop relevant metrics for communication and dissemination requirements.*



### 5.2.2.3. Stakeholder competencies and capacities

The ability and capacity for people that will use metrics and analytical tools needs to be taken into consideration in terms of their skills, time, financial resources, and access to data, technologies.

#### Stakeholders and stakeholder needs

Different stakeholders will have different competencies and capacities in their knowledge and experience of data, metrics, evaluation, and analytical tools. This requires mapping across the relevant stakeholder categories to identify where strengths and weaknesses exist and how any important gaps might be addressed (for example, by training existing staff, or accessing external consultants). A plan for enabling this needs to be commensurate with the requirement for the use of the outcome information and appropriate tools, and techniques adopted or adapted accordingly.

#### Systems

Taking a systems perspective not only includes identifying capacity in human systems but extends this to infrastructure such as IT, communication and financial systems. This wider system view is integral to metrics mapping evaluation as all these systems require sufficient channels and capacity to enable resources to be deployed where they are most needed.

#### Information for decision making

Decision makers are a particular – and important - subset of stakeholders and may have additional skills competency and capacity requirements as well as system-specific needs. As with all stakeholders this requires mapping but with particular attention to the metrics that support decision making processes. For the water resources project, for example, these may require a range of specialist skills and supporting technologies including hydrological engineering, financial structuring and communications with corresponding specialised metrics.

#### **Step 2 ‘Competencies and Capacities’ Checklist:**

- ✓ *Identify the types of metrics which measure the ideal competencies and capacity requirements for potential stakeholders who might want to use the results of the mapping exercise.*
- ✓ *Identify the types of metrics that relate to stakeholder capability and capacity for participating in, or managing, adaptation related interventions (eg through training programmes or consultancy).*
- ✓ *Identify the decision making roles which stakeholders may have and the metrics required to*

#### 5.2.2.4. Data and information

This aspect is central to the quality, provenance, and design of metrics and other analytical tools. The danger lies in designing metrics to fit the data available, rather than having a clear plan of what metrics are required for the purposes of the mapping evaluation and for this reason taking an ‘ideal metrics’ perspective as a starting point – deliberately disregarding any data or other real world constraints– is crucial for obtaining a systematic and objective perspective on metrics requirements.

Once data and metrics requirements are established data processing aspects need to be considered including: methods for gathering new data (which could range from manual observation and recording, to remote telemetry); sourcing and analysing appropriate existing data sources; consideration of how to support comparative analyses if required; and understanding appropriate analytical and modelling tools which could be employed.

##### Stakeholders

From this perspective an AMME map needs to centre on identifying:

- *characteristics and information requirements of stakeholders*
- *accessibility and availability of relevant data and information sources and any data privacy or consent issues*
- *timeliness, accuracy and coherence of data and information. Data need to be interpreted, evaluated and presented in ways which are meaningful to all stakeholders*

##### Systems

A systems perspective on data and information involves mapping the necessary data and information flows required between the different subsystems of an intervention. This includes mapping flows at the boundary of the intervention scope.

For AMME Framework maps this might also include appraising the extent to which data and information can be used for comparative purposes with metrics mapping evaluation projects (whether or not they are part of the AMME Programme).

##### Information for decision making

The view through this lens will overlap with the stakeholders focus, but more specific requirements geared towards decision making processes are likely and might include identifying:

- *Metrics to underpin policy and project management processes.*
- *Tools and techniques to support the coherent use and evaluation of data and information. This might also include modelling for future scenario analysis.*

##### **Step 2 ‘Data and Information’ Checklist:**

- ✓ *Identify ideal stakeholder requirements for data and information metrics.*
- ✓ *Map the ideally required data and information flows across the system of interest covered by the scope of the mapping exercise, and compare with the actual flows in order to identify gaps. As data and information underpin the capability to deliver all metrics, this is a fundamentally crucial task.*
- ✓ *Identify specific data sources required for metrics for monitoring and evaluation in support of decision making.*
- ✓ *Compare and align existing metrics with known and ideal data and information sources and flows.*
- ✓ *Identify likely real-world constraints on data, information and metrics and map against ‘ideal’ data, information and metrics scenario.*

### 5.2.2.5. Evaluation and good practice

This focuses on the appropriate analysis and interpretation of metrics in alignment with the project purpose, stakeholder objectives and good practice. Evaluation needs to consider both broader ethical perspectives and specific adaptation objectives that, together, define the success of an adaptation initiative. A 'good practice' evaluation will also encourage learning outcomes from projects.

#### Stakeholders

With respect to stakeholders and their needs a single set of metrics may not sufficiently cover all of the different objectives they may have. For example, a water quality engineer may want to evaluate a water quality project differently from a farmer, and project funders may wish to evaluate outcomes from a cost-effectiveness perspective. The important point is to identify required evaluation outcomes from the outset in order that relevant metrics are available and appropriate analytical methods employed.

Good practice with respect to stakeholders needs to accommodate ethical as well as efficacy and efficiency issues affecting, for example, the use of personal data, or transparency of processes.

#### Systems

Evaluation in this context includes considering how efficiency, effectiveness and equity affects the system and any subsystems. In the water resource scenario, for example, the project might be very effective at improving population health and provide new efficiencies in water supply, but the benefits may not be equally distributed across the population. Adopting a systems perspective should incorporate evaluating these impacts.

Good practice regarding a systems perspective concerns the integrity of the project process and especially transparency and accountability in data and information sharing and evaluation. In addition, there may be good practices from other projects which could be incorporated.

#### Information for decision making

The evaluation process needs to account for the levels of stakeholder and influence in an adaptation outcome. An adaptation project manager may have a greater direct interest in an evaluation outcome than a householder who is indirectly affected by the adaptation but who may still have to make decisions based on their personal evaluation of the project outcome effects. How a project evaluation is perceived and acted upon may have significance for its continuation or termination.

Good practice evaluations will consider transparency, accuracy and accountability. While the decision making itself might be subject to political pressures it is important that the basis on which those decisions are reached could be appraised or replicated by other independent observers.

#### **Step 2 'Evaluation and Good Practice' Checklist:**

- ✓ *Identify and define the purposes for the evaluation in decision making processes and the metrics required to support them.*
- ✓ *Identify expected levels of stakeholder interest in the results of an evaluation and define metrics that enable and support transparency and accountability in the evaluation.*

### 5.2.3. Step 3: Aligning metrics with real world constraints

Neither the AMME Framework, nor metric mapping evaluations, can fully encapsulate real world constraints for any given project context, but they can offer 'good practice' guidance to help adaptation project managers to apply mapping evaluation outputs for their specific requirements. Step 3 aims to provide those undertaking metrics mapping evaluations with support to metrics users on interpreting the outputs of a metrics map with their specific project capacities and constraints.

In this way the idealised metrics mapping of Step 2 is used as a benchmark against which to assess the gap between what might be 'ideal' metrics coverage and known 'real world' constraints and, in this way, a feasible set of metrics can be produced. For example, data required for a set of metrics may exist at a national level in some - but not all countries – within the context of a specific international adaptation project. Or the accuracy and reliability of available data underpinning metrics are such that this would call into question their viability and efficacy.

In other words, while in Step 2 purpose and intent reasons for the metrics guided their mapping with no detailed consideration to their feasibility necessary, Step 3 is where the feasibility of metrics for a specific application is made and constraints imposed for a variety of reasons (technical, political, resources, timing) taken into account.

The activities suggested below will help in articulating the preparation of guidance for users. They will also call out actions to improve coverage and focus of metrics and associated data requirements.

#### **Step 3 'Ideal versus Reality Metrics Analysis' Checklist:**

- ✓ *Identify nature of constraints for specific adaptation contexts:*
  - *Decision-making/monitoring requirements and their timelines*
  - *Skill capacity (technical, economic, skill, resource, risk)*
  - *Data availability, access and quality*
  - *Risk acceptability*
  - *Evolution over time: technology, scientific advances and practice competencies*
  - *Political will, power relations and stakeholder equity and capacity*
- ✓ *Compare the ideal with the real world constraints of metrics application within the scope of the mapping.*
- ✓ *Summarise relevant context-specific norms and standards for metrics application.*

#### 5.2.4. Step 4: Feedback, learning and revision

A completed metrics mapping cannot be regarded as definitive in the long-term. The contexts for adaptation - and associated metrics requirements - constantly evolve, as do the data and technology underpinning them. A metrics map, therefore, should be seen as a 'living document' open to modification and development as learning is subsequently gained from new adaptation projects and applications along with new skills and insights from the people who use the map.

During the various implementation steps of a given mapping evaluation there will be continuous feedback, but a more formalised process is required once the initial mapping evaluation is complete.

The first phase of this feedback process is where learning gained from a short phase of external review is collated and fed back to the original mapping evaluation team for consideration and, where necessary, modification to the mapping or its implementation guidance.

The second, long-term phase requires development of a strategy for incorporating feedback and revision if the original mapping is to be kept up to date. Setting out a strategy for the long-term phase is a task to undertake in Step 4 of the implementation process. It will include considerations such as: how long the mapping evaluation should be open to receive feedback and how the feedback will be monitored and acted upon; methods and technologies for engagement (eg through a website). The sustainability of resourcing this activity also needs to be considered including appropriate hosts and financing mechanisms.

Depending on the complexity of the mapping evaluation scope there may be a requirement for specific training for its most effective application.

Finally, if the mapping evaluation is to be sustained in the long term, then an implementation strategy may need to include a proactive strategy for revision. This is where mapping revisions stemming from the emergence of new and relevant mapping evaluations in the same or related areas of interest would be tracked and incorporated in a revised version of the mapping. In addition, tracking the implications of evolution in metrics, data, tools and changing requirements for the original mapping evaluation would need to be taken into account.

New mapping evaluations covering scopes that overlap with the mapping offer another opportunity to maintain and evolve the document and its use. A further process for integrating new mappings with old is another important consideration. The AMME Work Programme may consider developing a process and guidelines for all the above considerations related to learning and keeping the mapping relevant.

##### **Step 4 'Feedback, Learning and Revision' Checklist:**

- ✓ *Develop strategy for revising mapping exercise outputs incorporating feedback (including timescales).*
- ✓ *Seek external review at 'draft final' stage of mapping exercise.*
- ✓ *Incorporate external review feedback into final publication version of mapping exercise.*
- ✓ *Mapping exercise: publication, promotion and training.*
- ✓ *Implementation of the longer-term feedback strategy.*

## 6. Concluding Remarks

The AMME Framework guidance document provides a systematic methodology for metrics mapping evaluation.

In the longer term the AMME Framework could provide a network of metrics maps which would enable potential connections and synergies between them to be explored. It could also support the development of a reference library of metrics. It could also act as a foundation to enable more extensive and complex metrics analysis and application in decision making.

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