

Monitoring and Evaluation for Climate Change Adaptation

Purpose

This document provides a brief introduction to what adaptation monitoring and evaluation (M & E) is, highlights some key components of an M & E process and identifies further resources which provide detailed instruction and guidance on how to undertake adaptation M & E.

Introduction

Adapting to the impacts of climate change is a relatively recent, long term process that will develop significantly in the years ahead as changes in climate increasingly affect Scotland and countries around the world.

Effective monitoring and evaluation is an essential part of the adaptation process and allows us to increase understanding of how best to adapt in different places and circumstances. M & E can inform best use of resources, increase understanding of changing risks and inform decision making and investment. Experience based learning through M & E is essential for understanding the processes needed to build adaptive capacity and enhance adaptation action.

Adaptation M & E involves exploring both

- The **process** of adaptation - to the array of activities and decisions being taken for adaptation. Is implementation and action occurring?
- The **outcomes** of adaptation - the condition of being adapted. Have the intended adaptation objectives been achieved?

As you advance in your adaptation journey, M & E will become even more integrated and influential to your work particularly as part of adaptation decision-making processes such as adaptation pathways and iterative adaptive management.

What is monitoring and evaluation?

- **Monitoring** involves monitoring the **progress of actions** as they are being implemented to ensure they are proceeding as planned. It also includes identifying and monitoring trigger indicators which may stimulate the implementation of further actions.
- **Evaluation** is the systematic and impartial **assessment of the results** of monitored projects or actions. Whilst monitoring of indicators provides the data that underpin evaluations, it is analysis and interpretation of data that develops knowledge to support decision making and improve practice. Evaluation goes beyond monitoring to also include reflecting on how an adaptation intervention is doing in relation to monitored criteria and determines if the objectives of the program are being achieved. Outputs of monitoring should be evaluated to identify key lessons to improve future activities.
- **Reporting** is a related activity which involves collating and sharing the monitored data at regular intervals to overseeing groups or bodies.

Benefits of monitoring and evaluation

M & E is a way to demonstrate effectiveness and accountability of adaptation actions and can ensure success of adaptation initiatives. A number of drivers and benefits of undertaking adaptation M & E have been identified by Pringle (2011) in UKCIP's [AdaptMe](#) guidance. They are adapted in a summarised form here:

- **To evaluate effectiveness:** This involves assessing if an intervention has achieved the desired outputs and outcomes. Costs, benefits, performance of activities, changes in risk and timeliness of actions can all be considered and used to assess the effectiveness of the action(s) and identify if any unintended consequences and/ or maladaptation has occurred.
- **To understand equity:** It is now widely accepted that the consequences of climate change will be felt differently by different groups and influenced by spatial and temporal affects. Equity should be considered when evaluating adaptation actions to assess if the action has focused on the appropriate groups, if it had climate justice benefits either in terms of distributional¹ or procedural² justice and if the action has any negative consequences on already vulnerable groups.
- **To provide accountability:** Evaluations may be required by legislation, project commitments or agreed standard or funding requirements. They serve to demonstrate the successes and limitations of the project in a transparent manner and may support and overlap with efficacy and efficiency assessments.
- **To assess outcomes:** Adaptation actions are often included in projects or initiatives that are addressing wider societal outcomes – for example improved health and wellbeing or urban planning. There is often a desire to assess the specific contribution that adaptation action(s) have made towards achieving outcomes. It can be challenging to link adaptation actions directly with outcomes, often because the benefits of adaptation actions are long term, however it is often possible to evaluate the contribution that adaptation action has made to achieving outcomes
- **To improve learning:** Learning is key to adaptation and is a central component of the Adaptation Capability Framework. Learning should be at the core of evaluating and cover learning to understand what happened and why as well as reflecting on accountability to targets, outcomes or funders in relation to reporting against pre-agreed targets. The findings from M & E activities can help contribute to the evidence base for adaptation action and decision making. Knowledge should also be shared to help partners and future adaptation interventions become more efficient, effective and cost-beneficial.
- **To improve future interventions:** Taking the analysis and learning and using this to influence and inform future projects is central.
- **To compare with other evaluations:** It may be useful to compare experiences and key learnings across various evaluations to understand the influence of context on different adaptation interventions.

It is likely that the reason for evaluation will relate to more than one of the above reasons. It is important that the purposes of the evaluation are identified and clearly communicated to all involved.

Key Considerations for adaptation M & E

There are an array of different approaches which can be used for monitoring and evaluating climate adaptation actions. Monitoring and evaluation of adaptation is diverse in nature because of the complexities and unique

¹ Distributional justice involves ensuring policies and actions addressing climate change are implemented in a way so that vulnerable groups are not disproportionately impacted by climate change and equally benefit from any climate policy

² Procedural justice ensures decisions on climate policy are fair and inclusive to achieve just outcomes for all – this may be achieved through greater levels of public participation in decision-making

attributes of varying adaptation initiatives, which differ across scale, objectives, resources and requirements. As such, defining what ‘successful’ adaptation is will differ and be influenced by project type, location, context and values of those involved. There is no definitive measure of ‘successful’ adaptation and it will likely not be achieved within a project cycle – it is imperative that adaptation is understood as an evolving process rather than static.

M & E can also be voluntary or form part of a legal obligation or regulatory requirement imposed by a third party. Regardless of purpose, it is useful to take an approach that ensures evaluations are done with sufficient rigour and logic, and also considers the data and information that have been collected.

There are a number of different approaches, methods and tools which can be used to undertake adaptation M & E. The appropriate approach will depend upon the purpose, local context and level of application (e.g. project or national level) of adaptation actions. As such there is no one-size-fits-all monitoring and evaluation strategy. This document identifies several common generic traits or activities to support adaptation M & E, before highlighting a number of detailed resources that can be used to create an appropriate M & E approach.

Identify purpose and scope

Understand why you are doing monitoring and evaluation. Consider the following: Is the purpose to evaluate effectiveness, to assess efficiency, to assess outcomes, provide accountability or transparency or to improve learning and understanding? Be clear about why and for whom the evaluation is being undertaken. Having clearly defined objectives of the M & E process will influence which approaches and tools are most appropriate.

You may be evaluating activities which build adaptive capacity, i.e. deepening institutional capacity to respond effectively to climate change and creating supporting institutional frameworks, and/or delivering adaptation actions – practical actions to either reduce vulnerability or take advantage of opportunities.

Identify resources

Consider what resources will be required to monitor and evaluate the intended adaptation actions. Consider not only time but also financial, human and information resources available as well. It is important that M & E is appropriately resourced throughout the project. There is also the potential to link with academic partners and participate in action research to leverage available resources and this should be explored if appropriate.

Understand moving baseline

Often in general M & E approaches, it is recommended to establish a baseline against which to track changes. Climate change adaptation, however, is a unique context in that the natural and socio-ecological systems that activities will be addressing are undergoing continuous change over time. Therefore a ‘shifting baseline’ may be most appropriate to use in adaptation settings. For more information, read Bours, McGinn & Pringle’s (2014) [Guidance note 1: Twelve reasons why climate change adaptation M&E is challenging](#). The metrics and the M & E programme you design will require flexibility to adapt to a changing climate setting.

Identify who should be involved

Adaptation involves diverse stakeholders and as such M & E of adaptation activity may require input from internal staff as well as external staff or organisations, community organisations or consultants. Different groups may include the implementation team (those who are leading on planning & implementation of the project), the boundary organisations and partners as well as the beneficiaries or end users of actions or interventions. Stakeholders and end users should be involved throughout the evaluation process.

Timing considerations

M & E is a continuous process and should occur throughout planning, implementation and post implementations stages. Significant time lags may exist between adaptation actions and seeing any measurable changes. Therefore

it is key to view adaptation as iterative process that involves regular monitoring and evaluation. Be flexible, and be willing to update or revise actions based on evaluation if potential maladaptation is occurring.³

Establish evaluation criteria

You may want to use a Logic Model or Theory of Change (ToC) approach to identify objectives, connection between inputs, activities and outputs of the planned adaptation actions. A ToC identifies achievable steps that should to be undertaken to achieve objectives. It sequentially explores causes and effects, or results or impact chains of actions. Log frames and ToC are often used in general M & E approaches however their appropriateness to the adaptation actions being assessed should be considered. Due to their linear cause-effect nature, they do not fully appreciate that adaptation is a continuous and often not linear process and may not be suitable in some cases. For further information on Logic Model approaches, read the [Adapt Me](#) guidance.

Adaptation action will differ amongst organisation as such there is no prescribed set of indicators, however it is recommended that any indicators selected should follow [Villanueva \(2011\)](#) ADAPT principles of being adaptive (having methodological flexibility to adapt framework and process to changing conditions), dynamic (dynamic baselines informing practice), active (understanding wider social, cultural and personal issues), participatory (through involving stakeholders) and thorough (examining underlying causes of vulnerability and taking account of maladaptation).

Indicators illustrate evidence that condition exists or results have been met and can be quantitative or qualitative. Indicators may also be process based or outcome based and you may not need separate indicators but a combination of pre-existing indicators across different sectors of your organisation. For example national level adaptation indicators, access the [Repository of Adaptation Indicators](#) or [ClimateXChange's Adaptation Indicators](#).

Create recording mechanism + mainstream and incorporate learning

Continual improvement and learning is a vital component of M & E. Ensure that you have an appropriate mechanism to record learnings and mainstream this new knowledge across your organisation. Remember to record and reflect on challenges as well as successes. Unsuccessful adaptation relates not only to instances where adaptation objectives are not achieved but also to actions which increase the vulnerability or exposure of groups of sectors, referred to as maladaptation. It is important that M & E frameworks account for unintended consequences and potential trade-offs as well as allowing for flexibility and corrective action if required.

Further Reading & Resources

The previous sections outlined a number of aspects to consider when designing adaptation M & E. To devise and implement a detailed approach, review the following relevant resources.

- [AdaptME Toolkit – Adaptation Monitoring & Evaluation](#) is a toolkit that explores questions relating to the purpose of evaluations, challenges and limitations that may be expected, how to measure progress and performance and establish evaluation criteria as well as communicating findings. It utilises an Adaptation Logic Model to guide the assessment. It provides useful prompt questions and links to further references and resources.
- [PROVIA Guidance on Assessing Vulnerability, Impacts and Adaptation to Climate Change Summary](#) is a resource developed by the United Nations Environment Programme to enhance knowledge on approaches, methods and tools available to support climate adaptation. Section

³ [UKCIP AdaptME](#)

2.5 covers monitoring and evaluation and summarises key steps to include in an M & E plan (p.50-64).

- [Monitoring & Evaluating Climate Change Adaptation at Local & Regional Levels – ADEME](#) is guidance developed by the French Energy and Environment Agency to support M & E within local authorities. It outlines key steps to consider in a monitoring and evaluation process.
- Adaptation M & E Navigator provides a list of specific purposes for undertaking adaptation M&E in practice and illustrates to decision makers the range of available options and supports them to select the most suitable approach for their purpose and context. You can explore the [online tool](#) or read more about it [here](#).
- The World Bank's [Options for Results Monitoring and Evaluation for Resilience-building Operations Scoping Paper](#) summarises work on climate and disaster resilience to identify emerging lessons from M & E of resilience interventions, specifically at the project level. It provides description of M & E components including principles, results framework, indicators and evaluation.
- [Villanueva \(2011\)](#) describes the ADAPT principles as well as different types of evaluations including input-output based evaluations/outcome, impact or results evaluation, process based evaluation, evaluation of behavioural change and economic evaluation.

Case Studies

- [Edinburgh Adapts](#) is a city-wide partnership initiative that created Edinburgh's first Adaptation Action Plan and Vision. Progress on the plan and continued adaptation engagement is directed by a dedicated Steering Group who produce annual reports monitoring and evaluating actions through a process based evaluation. Download the most recent report [here](#).
- The Scottish Government is currently consulting on the second Scottish Climate Change Adaptation Programme (SCCAP) and have proposed process based evaluation to monitor and evaluate progress against the identified outcomes. Read their M & E plans (p.53) and respond to the consultation [here](#).

If you have any questions or would like to share your experience of adaptation M & E, please contact us at adaptationscotland@sniffer.org.uk