European Commission

EU MISSIONS

ADAPTATION TO CLIMATE CHANGE

Developing a framework for tracking adaptation outcomes

Key topics relevant for developing M&E of adaptation outcomes

29 January 2026

ACKNOWLEDGEMENTS

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Manuscript completed in March 2026.

Suggested citation: MIP4Adapt Monitoring & Evaluation Thematic Working Group. 2026. *Developing a framework for tracking adaptation outcomes: Key topics relevant for developing M&E of adaptation outcomes*. Workshop report.

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Background

The Thematic Working Groups (TWGs) are a cornerstone of collaboration within the EU Mission on Adaptation to Climate Change, bringing together experts from EU-funded projects to exchange knowledge, align efforts, and maximise impact. These groups focus on key adaptation themes and play a vital role in generating practical resources to support regional and local adaptation efforts.

The TWG on Monitoring and Evaluation (TWG-M&E) was constituted in 2023 to "collaborate and develop a common M&E framework by pulling together tools to jointly elaborate the approach" (TWG meeting, Nov. 9, 2023). During the 2023-2025 work program, the TWG-M&E developed two outputs:

- **Output 1:** Insights on monitoring climate adaptation activities: Deriving lessons learned from monitoring adaptation activities in projects under the EU Mission on Adaptation) (available here)

- **Output 2:** Roundtable summary document on monitoring, evaluation, and learning (MEL) of climate adaptation projects (available here)

The **UNDERPIN** project is leading the work of the TWG-M&E in the 2025-2026 work period. **UNDERPIN**, officially named, "oUtcome iNDicators to mEasuRe Progress on climate resilience" (September 2025-September 2028) addresses critical gaps in monitoring, evaluation, and learning (MEL) for climate adaptation across Europe. A flagship project of the EU Mission on Adaptation to Climate Change, this project focuses on outcome indicators to measure effectiveness of adaptation solutions. Project results will serve as a reference to measure adaptation progress in the EU and help assess the advancement of the EU Mission on Adaptation to Climate Change across the engaged regions in a way that is compatible with the efforts of the Global Goal on Adaptation and the EU Adaptation Strategy.

Several activities are planned as part of the TWG-M&E workplan for 2026. In addition to the Workshop described in this document, the proposed workplan also includes: (1) a second **workshop**, to be held in June 2026 to discuss and assess the first draft of the outcome monitoring framework developed by UNDERPIN; and (2) **policy outlook roundtable** in the fall of 2026 to explore pertinent questions and emerging challenges for policy makers and practitioners concerned with the evaluation of adaptation action. The proposed output will be a policy brief with authorship of all TWG participants.

Introduction

The workshop *Developing a Framework for Tracking Adaptation Outcomes,* held on 29 January 2026, convened participants from various Mission-funded climate adaptation projects across Europe, to explore conceptual and practical foundations for developing monitoring and evaluating metrics to assess climate adaptation results.

Building on the output of previous TWG M&E activities, its goal was to advance shared understanding of how adaptation outcomes can be defined, measured, and interpreted across sectors, with particular attention to frameworks, indicators, and learning processes that support evidence-based decision-making. Through structured discussion, the session aimed to identify methodological improvements that enhance the usability, relevance, and policy value of adaptation outcome metrics, while also drawing lessons from other knowledge domains.

The workshop was organized around three thematic pillars:

1. Assessing climate adaptation outcomes: Frameworks, indicators, and learning across sectors.
2. Principles for an adaptation outcome-tracking framework
3. Challenges in developing adaptation outcome indicators

The session used a facilitated breakout format, with participants selecting thematic groups in advance and discussions led by members of the UNDERPIN team. Guiding questions for discussion were shared with participants ahead of the workshop.

The insights generated during these exchanges form the basis of this report, which synthesizes key perspectives, identified challenges, and emerging priorities for improving the tracking of climate adaptation outcomes.

Topic 1: Assessing climate adaptation outcomes: Frameworks, indicators, and learning across sectors

To structure the discussion, participants reflected on a set of guiding questions covering frameworks, methodologies, learning processes, and cross-sector insights relevant to assessing adaptation outcomes.

The following questions were addressed in the breakout group:

- Which frameworks are most useful for defining and assessing adaptation outcomes?
- What methodological improvements are needed to make adaptation outcome indicators more usable and relevant for decision-makers?
- What methods and processes are used to assess adaptation outcomes and learn from them?
- What can adaptation outcome monitoring learn from other areas of knowledge?

The points below synthesize the main messages, areas of convergence and key tensions identified during the discussion:

Diverse frameworks for assessing adaptation outcomes: A wide variety of frameworks exists across different domains and governance levels, which can serve as a basis for assessing adaptation outcomes. These range from international frameworks (e.g. WHO) to EU-level frameworks and ISO standards such as ISO 14090. However, no single framework is universally applicable across contexts, and sectoral coverage remains uneven.

Approaches to measuring outcomes and challenges: Most projects rely on baseline and end-of-project evaluations to assess change. Long-term outcomes, such as behavioural change or capacity development, are challenging to assess due to short project durations, lack of institutionalisation of adaptation MEL, and data constraints. In this context, proxy indicators were discussed as a pragmatic approach where direct outcome assessments are not feasible.

Enabling conditions as a key adaptation outcome: Rather than focusing solely on tangible adaptation results (e.g. number of trees planted), discussions highlighted the importance of assessing the capacity to respond to a range of emerging risks. This includes institutional capacity, governance structures, and financial resources.

Challenges of attribution and linear pathways: Attributing observed outcomes to specific interventions is challenging, as multiple factors can influence adaptation results. Moreover, assuming linear relations between outputs, outcomes and impacts may be insufficient. Alternative approaches such as systems thinking, theories of

change, and multilevel MEL frameworks, were discussed as potential ways to address this issue, although they remain difficult to operationalise in practice.

Improving the decision relevance and usability of indicators: Technically robust indicator frameworks are insufficient if they do not support decision-making. Decision-makers require interpretable results, contextualisation, and guidance on next steps, highlighting the need to link adaptation outcome assessment more directly to decision-relevant questions.

Trade-offs between contextualisation and comparability: Trade-offs arise between designing indicators that are tailored to local contexts and ensuring comparability and scalability across regions, sectors, and projects. Given the growing number of adaptation initiatives addressing similar topics, such as nature-based solutions, improving comparability is increasingly important, as it enables collective learning and evidence-based decision-making beyond individual projects.

Learning from other sectors and knowledge systems: Adaptation outcome assessment can draw lessons from other sectors, including public health, disaster risk reduction, and river basin management. These areas offer tested approaches that adaptation MEL can built upon.

Topic 2: Principles for an adaptation outcome-tracking framework

Participants explored a series of framing questions intended to clarify what principles should underpin an adaptation outcome-tracking framework and how these can be operationalized across context. The following questions were addressed:

- What core principles should guide the design of an outcome-tracking framework (e.g. policy coherence, path-to-impact, dynamics, ownership, learning)?
- How to balance comparability and standardisation with flexibility for different contexts and sectors?
- How to integrate distributional aspects (who benefits, who is left behind) and identify maladaptation practices?

The following points summarize the core areas of agreement, outstanding challenges, and conceptual considerations highlighted in the discussion:

Need to strengthen outcome-oriented MEL approaches: Participants noted that adaptation monitoring practices vary across contexts and stages of maturity, often placing greater emphasis on output indicators. While outputs are more easily measurable and closely linked to planned actions, there was broad recognition that stronger attention to outcomes is needed to assess whether adaptation efforts contribute to long-term resilience.

Guiding principles as normative commitments: An outcome-tracking framework should be grounded in clear, forward-looking principles that define its purpose and direction. These include demonstrating credible progress, enabling rapid feedback and learning, informing timely policy revision, ensuring transparency, and strengthening policy coherence across governance levels and sectors.

Causal logic and pathways-to-impact perspective: The framework should be structured around a clear logic linking inputs, outputs, outcomes, and long-term resilience improvements. While the theory of change provides a useful foundation, adaptation was recognized as a dynamic and iterative process, requiring monitoring to be integrated from the planning stage rather than introduced retrospectively.

Coherent and manageable indicator architecture: Participants stressed the importance of limiting the number of indicators and ensuring coherence and consistency across them. A balanced combination of quantitative and qualitative measures is necessary, particularly to capture long-term and systemic outcomes. However, defining, populating, and aggregating outcome indicators remains challenging, especially across scales and for complex interventions such as nature-based solutions.

Justice, equity, and distributional considerations: The framework should explicitly consider who benefits from adaptation actions, whether vulnerable or marginalized groups are reached, and how potential maladaptation can be identified. Distributional, procedural, recognition, and intergenerational aspects were highlighted as essential dimensions of outcome tracking.

Ownership and feasibility for implementers: Monitoring systems should be useful for decision-makers and governed by those responsible for implementation. Participants noted that MEL is often perceived as an administrative burden, and emphasized the need to ensure feasibility, contextual relevance, and stakeholder engagement, including through participatory approaches such as citizen-generated data.

Context specificity and operationalization challenges: While shared guiding principles can provide a common reference, their prioritization and operationalization must remain context- and scale-specific. Trade-offs persist between comparability and flexibility, and further work is needed to translate principles into practical monitoring structures that bridge local experience and higher-level reporting requirements.

Topic 3: Challenges in developing adaptation outcome indicators

The discussion began with experience-based reflections on practical measurement challenges and evolved toward identifying systemic barriers and possible solutions. Specific guiding questions included:

- Based on your experience, is it difficult to measure adaptation?
- What's the biggest obstacle you face when measuring adaptation outcomes?
- What adaptation outcomes are hardest to measure and why?
- What are potential ways to address these challenges/enhance our ability to measure adaptation outcomes?

The outputs below capture the main difficulties reported by participants, as well as proposed pathways for strengthening adaptation outcome indicators:

Long-term monitoring is the central barrier to measuring adaptation: short project cycles, limited funding beyond project lifetimes, and lack of mandates prevent sustained monitoring before, during, and after interventions. Without long-term data, it is difficult to understand effectiveness or capture delayed impacts.

Attribution and system complexity make outcomes difficult to interpret: Adaptation takes place within dynamic socio-ecological systems where multiple factors influence results. This makes it challenging to establish causal links between interventions and outcomes, especially when confounding developments occur across spatial and governance scales.

Socio-economic, health, behavioral, and unintended outcomes are the hardest to measure: These impacts often lack accessible data, involve privacy constraints, require interdisciplinary expertise, and may only emerge over long timeframes. Many are qualitative or narrative in nature, further complicating quantification and comparison across projects and contexts.

Methodological fragmentation and data gaps limit comparability and learning: Participants highlighted missing standard indicators, inconsistent frameworks, limited awareness of existing MEL approaches, and insufficient baseline data. As a result, projects often develop their own methods, reducing opportunities for meta-analysis and shared learning.

Strengthening institutional frameworks, capacity, and knowledge sharing is essential: Proposed solutions include establishing common monitoring frameworks, aligning monitoring with evaluation (full MEL), developing ex-post evaluation practices, securing legal and financial support for long-term data collection, learning from

completed projects, improving stakeholder engagement, and complementing monitoring with modelling and qualitative assessments.

Shift from implementation monitoring to impact-oriented MEL: Participants stressed the need to move beyond tracking whether measures were delivered toward understanding whether they produced meaningful adaptation outcomes. This requires clearer theories of change, better alignment between KPIs, monitoring, and evaluation, education for stakeholders on impact measurement, and prioritization of outcome indicators that support decision-making rather than simply documenting activities.

Future direction

Several cross-cutting insights emerge from the three discussions in the three breakout sessions.

First, participants agree that adaptation monitoring and evaluation systems must shift from output-focused reporting toward outcome- and impact-oriented approaches capable of capturing long-term resilience effects.

Second, although a single standardized framework is neither feasible nor desirable, there was strong support for shared principles, interoperable indicators, and common reporting logics to enable comparability, aggregation, and collective learning across projects, plans and governance levels.

Third, persistent methodological constraints—including attribution challenges, data gaps, limited monitoring timelines, and institutional capacity limitations—continue to hinder robust assessment of adaptation outcomes, particularly for systemic, behavioural, or distributional effects.

Looking ahead, several priority actions to advance adaptation outcome tracking have been identified. These include strengthening institutional mandates and resources for long-term monitoring, investing in indicator harmonization and methodological guidance, expanding cross-sector learning, and improving integration between monitoring, evaluation, and decision-making processes.

Further work is needed to translate agreed principles into operational tools, test them across contexts, and document lessons from implementation. Continued collaboration among projects, practitioners, and knowledge communities will be essential to build a coherent and decision-relevant evidence base on adaptation effectiveness.