10. Monitoring Performance Over Time

Monitoring performance of key indicators over time helps to assess progress and understand whether a policy or action is on track to achieve the desired transformational impacts. This chapter provides guidance on developing a monitoring plan and regularly following the performance of a policy or action. Users conducting ex-ante assessment can choose to skip this chapter.

Figure 10.1: Overview of steps in the chapter

Checklist of key recommendations

- Define a monitoring period that is long enough to capture the full range of transformational change impacts
- Develop a plan for monitoring key performance indicators
- Identify the key performance indicators that is used to track performance of the policy or action over time
- Monitor each key performance indicator over time in line with the monitoring plan

10.1 Define the monitoring period and frequency

Monitoring over time creates a time series of data useful for assessing trends. It also provides an opportunity for modifications of policies and actions during the implementation period if progress is not as planned. The first step is to define the monitoring period and monitoring frequency.
Monitoring period

The monitoring period is the time period over which the policy or action is monitored. However, it is worth noting that monitoring in advance of the implementation period, that is, before the implementation of the policy or action, can help define the starting situation. It is a key recommendation to define a monitoring period that is long enough to capture the full range of transformational impacts.

The monitoring period also includes the assessment period, the latter being the time period over which GHG impacts resulting from the policy are assessed. There may be a number of assessments (and therefore assessment periods) during the monitoring period.

For ex-post assessments, users can choose to continue monitoring beyond the implementation period to track effects. For example, a policy with an implementation period of 2015-2030 should have at least the same monitoring period or longer (such as 2013-2032). Data collection can hence begin before implementation starts, and continue throughout the implementation period and beyond. Starting data collection at an early stage (even before policy implementation starts) improves the ability to monitor and evaluate at later stages. In general, the longer the monitoring period is, the more robust the impact assessment is.

Monitoring frequency

The monitoring frequency is generally decided at the beginning of the monitoring period. Users can monitor indicators at various frequencies, such as monthly, quarterly, or annually, depending on the objectives. The appropriate frequency of monitoring should be based on the needs of decision makers and stakeholders. Refer to ICAT Stakeholder Participation Guidance for engaging stakeholders in this regard (Chapter 5).

Deciding on the monitoring frequency entails trade-offs between the type of impacts and indicators being monitored, cost, and data availability. Clarity on the purpose of each indicator, as well as an understanding of existing data collection practices is helpful to determine frequency. For example, if a policy goal is to create green jobs over 20 years, the indicator related to job creation can be monitored annually through an existing employment report regularly published by another agency. On the other hand, if the purpose is to measure the success of a six-month awareness raising campaign by an agency, the indicator related to number of agency website visits or media articles can be monitored daily or weekly for the initial 1-2 months, and then monthly for the remainder of the campaign.

When a policy or action includes short-term, medium-term and long-term targets, monitoring should take place at a minimum at the critical milestones (e.g., for a solar PV policy that intends to achieve 60% PV in the electricity mix by 2050, with interim targets of 20% by 2020, 30% by 2030 and 50% by 2040, monitoring of PV share in electricity mix should occur every 10 years or more frequently). In the pre-development or take-off phase of transformational change (Chapter 7), users can decide to monitor indicators more frequently to confirm progress is on track. For example, awareness raising, capacity building, and high-level advocacy can be important for encouraging diffusion and scale-up of solar PV technologies when first introduced to a market. Therefore, indicators related to these efforts along with solar PV sales can be monitored more frequently initially in such a market.

Users may wish to align the monitoring frequency with the five-year reporting cycles of Nationally Determined Contributions and/or national climate or development reporting cycles to embed monitoring within existing processes.
10.2 Develop a monitoring plan

A monitoring plan is important to consistently track progress of indicators over time in relation to goals and to encourage documenting of assumptions and decisions for transparency. It is a key recommendation to develop a plan for monitoring key performance indicators.

To ensure that the monitoring plan is robust, consider including the following elements in the plan:

- **Roles and responsibilities**: Identify the entity or person responsible for monitoring key performance indicators and clarify the roles and responsibilities of the personnel conducting the monitoring. See “Institutional arrangements for coordinated monitoring” in Section 10.3.

- **Competencies**: Include information about any required competencies and any training needed to ensure that personnel have necessary skills.

- **Methods**: Explain the methods for generating, storing, collating and reporting data on monitored indicators. Include a brief description and source of data for each indicator.

- **Monitoring period and monitoring frequency**: Define the monitoring period and frequency for the policy or action. Section 10.1 discusses these in detail.

- **Collecting and managing data**: Identify the databases, tools or software systems that are used for collecting and managing data and information. Understand what data exists, in what format, how it is collected, as well as critical data gaps, and utilise this to organise a process to collect information, such as description of the indicator, whether qualitative or quantitative data needed, source of data and any relevant assumptions. Table 10.1 provides a template for data collection for the hypothetical solar PV policy.

- **Quality assurance and quality control (QA/QC)**: Define the methods for QA/QC to ensure the quality of data enhance the confidence of the assessment results. Quality assurance is a planned review process conducted by personnel who are not directly involved in the data collection and processing. Quality control is a procedure or routine set of steps that are performed by the personnel compiling the data to ensure the quality of the data.

- **Record keeping and internal documentation**: Define procedures for clearly documenting the processes and approaches for data collection as well as the data and information collected. This is beneficial for improving the availability of information for subsequent monitoring events, documenting changes over time, and creating a historical record for archiving. Define the length of time that data will be archived.

- **Continual improvement**: Include process for improving the methods for collecting and analyzing data and monitoring impacts.

- **Financial resources**: Identify the cost of monitoring and sources of funds

Users should review and update the monitoring plan on a regular basis (e.g., annually or biennially). This becomes particularly important for transformational change because of its long-term nature. Some characteristics may become less significant while others may become more significant during this time. Therefore, the monitoring plan should be revisited as new indicators may need to be monitored while some of the existing ones may no longer be of interest.
Table 10.1: Template for data collection – illustrated for the solar PV policy example

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Type of data (quantitative/qualitative)</th>
<th>Monitoring frequency and date of collection</th>
<th>Data source/collection method</th>
<th>Responsible entity</th>
<th>Observed data (unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of new solar PV installation businesses</td>
<td>Quantitative</td>
<td>Annual (January 2015)</td>
<td>Business license application</td>
<td>Department of Commerce or Energy</td>
<td>8 businesses/year</td>
</tr>
<tr>
<td>Number of trainings on solar PV installation</td>
<td>Quantitative</td>
<td>Monthly</td>
<td>Training workshop reports</td>
<td>Department of Energy</td>
<td>1 training/month</td>
</tr>
<tr>
<td>% share of solar PV in electricity mix</td>
<td>Quantitative</td>
<td>Annual (January 2015)</td>
<td>Electricity generation data</td>
<td>Department of Energy</td>
<td>5%</td>
</tr>
</tbody>
</table>

10.3 Monitor indicators over time

Monitoring of indicators helps to track performance of the policy or action over time. It is a key recommendation to identify the key performance indicators that is used to track performance of the policy over time.

For each characteristic included in the assessment, users identify indicators to monitor performance of the policy or action over time. Appendix A provides examples of indicators for process and outcome characteristics of transformational change. Section 7.3 also discusses selection of indicators to assess policy or action’s impact in relation to the starting situation. When selecting indicators, users should consider the intended objectives of monitoring, the nature of the policy or action, the characteristics being assessed, stakeholder priorities, and feasibility. Feasibility may depend on data availability, resources needed and technical capacity to collect data. If data is not available or it is not cost-effective to collect data for an indicator, users can either consider proxy data or select another indicator where possible. Reasons for selecting indicators and data-related assumptions should be explained and justified.

An inclusive stakeholder consultation process can help ensure the relevance and completeness of selected indicators. The ICAT Stakeholder Participation Guidance provides further guidance on designing and conducting consultations (Chapter 8).

It is a key recommendation to monitor each indicator over time in line with the monitoring plan. Users take monitoring results into account when estimating transformational impacts ex-post. If monitoring indicates that the estimates underlying the qualitative scores used in the ex-ante assessment are no longer valid, users should document the differences and use the monitoring results to update the ex-ante estimates.

Institutional arrangements for coordinated monitoring

Information on key performance indicators can be dispersed among different institutions. Given the wide variety of data needed for impact assessment and a range of different stakeholders involved, strong institutional arrangements play a central role in coordinating monitoring activities. A technical coordinator, or a coordinating team can be assigned to lead monitoring, data collection and management even as
responsibilities are delegated to different institutions. Users may wish to entrench these roles in institutions responsible for monitoring of long-term strategies or NDCs or national climate or development plans to bring greater efficiency. This also reduces the risk of funding gaps for monitoring over long periods. Further, depending on the data sources identified, it may be worthwhile to pursue formal partnerships or Memorandums of Understanding (MoUs) for longer-term data collection and assess opportunities such as census to gather key data.

It can be useful to embed a collection of key indicators within the data gathering system of a relevant ministry, agency or department, or identify another existing reporting system within which specific key indicators could be housed. Countries may already have monitoring institutions in place as part of their national MRV system. Users can expand the national MRV system to also monitor the impact of the policy.

Where strong institutional arrangements do not yet exist, countries can identify a coordinating body with adequate capacity and authority to be responsible for monitoring. And if necessary, provide a legal mandate to the coordination body to collect and monitor information. Given the longer-term nature of transformational change, a key consideration is to appropriately budget for monitoring and analysis, and secure the necessary financial resources. Institutional mandates strengthen the procedures and the system, and can help ensure funding.
11. REPORTING

Reporting the results, methodology and assumptions used is important to ensure that the impact assessment is transparent and gives decision makers and stakeholders the information they need to properly interpret the results. This chapter presents a list of information that is recommended to be included in an assessment report.

Checklist of key recommendations

- Report information about the assessment process and the transformational impacts resulting from the policy (including information listed in Section 11.1)

11.1 Recommended information to report

It is a key recommendation to report information about the assessment process and the transformational impacts resulting from the policy (including the information listed below). The list below does not cover all chapters in this document because some chapters provide information or guidance not relevant to reporting. Refer to the ICAT Stakeholder Participation Guidance for guidance about providing information to stakeholders (Chapter 7).

Chapter 2: Objectives

- The objective(s) and intended audience(s) of the assessment

Chapter 4: Key concepts, steps, and assessment principles

- Opportunities for stakeholders to participate in the assessment
- List the principles on which the assessment is based

Chapter 5: Describing the policy or action and the transformational change vision

- Whether the assessment applies to an individual policy/action or a package of related policies/actions, and when a package is assessed, which policies and actions are included in the package
- A description of the policy or action (or package of policies or actions) (including the information in Table 5.1)
- Describe the policy or action’s vision for transformational change (including information in Table 5.2)
- Whether the assessment is ex-ante, ex-post, or a combination of ex-ante and ex-post

Chapter 6: Choosing which transformational change characteristics to assess

- Description of relevant transformational change characteristics of the policy or action (including information in Table 6.4 and Table 6.5)
- The assessment boundary in terms of impacts covered, and geographical and sectoral coverage
- The assessment period
Chapter 7: Assessment of the starting situation
- Identified barriers to transformational change specific to the phase of transformation (including information in Table 7.1)
- The starting situation for characteristics impacted by the policy or action (including information in Table 7.2 and Table 7.3)

Chapter 8: Estimating impacts ex-ante
- The final ex-ante assessment result expressed in terms of the extent of transformation expected and the likelihood that the expected transformation can be realised over the assessment period, including the underlying rationale
- Disaggregated results in terms of the policy or action’s expected impact on individual characteristics (including the information in Table 8.4, Table 8.5, Table 8.6 and Table 8.7)

Chapter 9: Estimating impacts ex-post
- The final ex-post assessment result expressed in terms of the extent of transformation achieved and the likelihood that the transformation is sustained over time, including the underlying rationale for the conclusions
- Disaggregated results in terms of the policy or action’s impact on individual characteristics using indicators (including the information in Table 9.2, Table 9.3, Table 9.4 and Table 9.5)

Chapter 10: Monitoring performance over time
- The monitoring period
- The performance of the policy or action over time, as measured by the indicators, and whether the performance of the policy or action is on track relative to expectations
- Whether the assumptions on key indicators within the ex-ante assessment remain valid, if relevant

Chapter 12: Learning, Decision Making and Using Results
- Insights gained from the assessment, and how results are used to revise ongoing or future policies and actions