

# Monitoring and Evaluation

Monitoring and Evaluation (M&E) is an integral part of Project Cycle Management (PCM) and is crucial for planning, implementing, reviewing and adapting management processes (for more information on PCM please refer to the [Concept Note on Participatory Planning, Monitoring and Reporting](#)). M&E has the following three main objectives (illustrated in Figure 1), providing:

1. Timely information for supporting decision-making (**programme steering and quality assurance**).
2. Evidence of **project effectiveness** to stakeholders (accountability upwards to donors and downwards to primary stakeholders)
3. Information for **knowledge sharing and learning** (cf. capitalization of experiences)

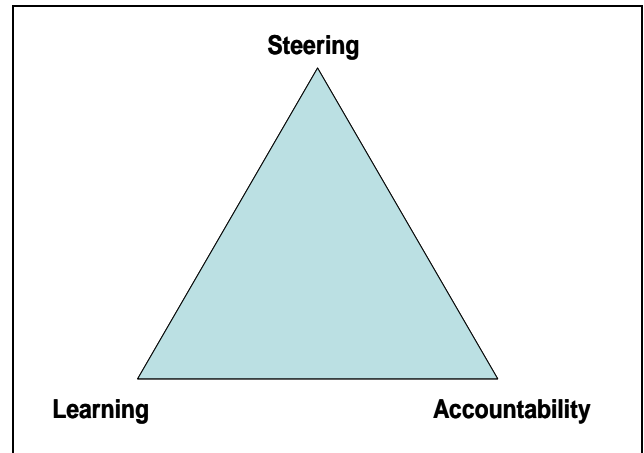


Figure 1: HELVETAS Swiss Intercooperation, 2015

**M&E** helps to empower local decision-makers, foster team-building and ownership, and therefore increase sustainability of interventions. Box 1 clarifies some M&E keywords.

## Box 1: Definitions

**Efficiency:** how economically resources/inputs are converted to results.

**Effectiveness:** the extent to which the objectives were achieved.

**Indicator:** quantitative or qualitative factor or variable that provides a simple and reliable mean to measure achievements, to reflect on changes related to an intervention or to help assess the performance of a development actor (e.g. an NGO).

**Monitoring:** a continuous observation function that uses systematic collection of data (...) with indications of the extent of progress, efficiency and effectiveness of a project.

**Evaluation:** an assessment, as systematic and objective as possible of an on-going or completed project, program or policy, its design, implementation and results. The aim is to determine the relevance and fulfillment of objectives, efficiency, effectiveness, impact and sustainability.

[OECD-DAC Glossary, 2002](#)

**Monitoring** involves regular and systematic observation and data collection on progress and results achieved. **Reporting** summarises and condenses monitoring data on a monthly basis. **Evaluation** is an assessment on a periodical basis (e.g. once a year) of an intervention's efficiency and effectiveness to identify and understand the challenges and opportunities and to exchange lessons learned. **Impact assessment** is an in-depth study conducted after a period of implementation or at the end of a "project". Both evaluation and impact assessment are generally carried out with the support of external actors, whereas monitoring and reporting are done by a project's stakeholders (community members including project staff, etc.). This concept note will focus mainly on monitoring.

## Implementing a monitoring system

Monitoring involves three main areas (see Figure 2):

1. **Process** (activities, input, costs and outputs?)
2. **Results** (output, outcome, impacts, both intended and unintended)
3. **Context** (how was the context altered? What changed?)

To perform continuous and high-quality monitoring, it is necessary to implement a **monitoring system** that encompasses a) indicators, b) measurement methods and c) a plan for data collection and reporting.

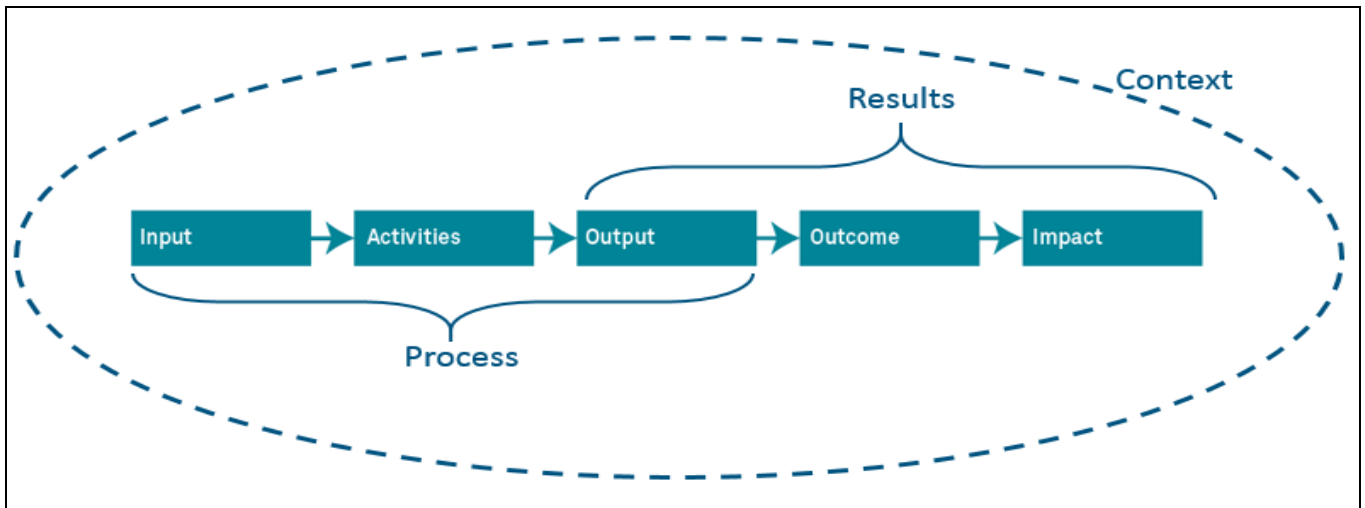


Figure 2: Monitoring of process, results and context (modified from [Zewo Foundation, 2011](#))

### Indicators

Monitoring is based on indicators, which are factors that **reflect the changes** that have taken place (within the system). They can be either qualitative or quantitative, depending on what they are supposed to measure. Indicators should be **SMART** (see Box 2). The monitoring system should comprise a mix of quantitative and qualitative indicators that reflect information about different elements:

#### Box 2: SMART indicators

Select indicators can be complex and time-consuming. SMART is a popular acronym for selecting indicators:

- **Specific.** Is the indicator specific enough to measure progress towards the results?
- **Measurable.** Is the indicator a reliable and clear measure of results?
- **Achievable.** The target value of the indicator is achievable within the defined timeframe.
- **Relevant.** Is the indicator relevant to the intended outputs and outcomes?
- **Time bound.** An expected date of accomplishment needs to be set.

[OECD-DAC Glossary, 2002](#)

- **Type of indicators** (about which stage of the project? See Figure 2):
  - **Process indicators.** Inform on activities and outputs (e.g. number of attendants of a training, cost of the training);
  - **Results indicators.** Inform on outcomes and impacts (e.g. % of reduction of erosion, yield improvement after an agronomic measure for soil and water conservation);
  - **Context indicators.** Inform on the overall context and its evolution throughout a given timeline (e.g. number of flash floods in a year, number of conflicts related to land use).
- **Sensitivity**
  - Short-term indicators
  - Mid-term indicators
  - Long-term indicators
- **Sustainability**
  - Ecological indicators
  - Economic indicators
  - Social indicators

However, the most common mistake when one is designing the set of indicators is over-complication. Not too many indicators should be selected (a maximum of two for each intervention step, e.g. output and outcome) and they have to be simple and cost-effective! Please see a concrete example of indicators for outcomes, outputs and activities in Box 3.

Indicators can be **direct** or **proxy**. Proxy indicators do not directly measure the factor we would like to have information about (e.g. soil erosion), but measure other factors (e.g. sediments in the water downstream inform on soil erosion) that are easier to measure and provide information about the factors of interest in an indirect way.

### Box 3: Examples of indicators, taken from the Green Saigan Project

The **purpose** of the Green Saigan Project is to increase the food security of targeted families through watershed management. One of its **outcomes** is that flash floods have been reduced.

The expected **output**:

- Technical measures for flash flood control have been implemented

The **activities** undertaken to achieve this output:

- Construction of small soil and water conservation measures for gullies stabilisation (check dams)
- Construction of water harvesting points, water ponds, dug wells, kandas

**Output indicators:**

- Number of check dams constructed
- Number of water harvesting points

**Outcome Indicators:**

- % of critical gullies stabilised
- Number of severe events

(HELVETAS Swiss Intercooperation, 2010)

Moreover, **if we wish to involve primary and secondary stakeholders** in M&E activities, the indicators need to be relevant and understandable and should therefore be selected and adapted in collaboration with the community. This can be costly and time-consuming, but it allows for an active learning process that will empower the local community to perform their own monitoring.

#### Methods for data gathering

Information about indicators is collected through **measurement methods** to be defined as part of the monitoring systems. Data gathering has to be continuous and should be carried out by project staff together with other stakeholders.

There are many methods available, the most popular being head counting, cost analysis, focus group discussions, semi-structured interviews, Participatory Rural Appraisal (PRA) tools (see the [Concept Note on Participatory Rural Appraisal](#)) and case studies. Figure 3 gives examples of other major M&E methods. To ensure the quality and the relevance of the monitoring, it is important to use one or two different methods to look at the same question (**triangulation**).

#### Monitoring plan

Once the indicators and measuring methods have been established, there needs to be a **monitoring plan** for implementing the monitoring system and managing data analysis and collection. It should at least include:

- **Indicator** descriptions (what will be measured),
- **Methods** of data collection (for each indicator, specify which methods!),
- **Person (or group)** responsible for gathering data on each indicators,
- **Frequency** (how often) of data collection.

A simplified version of a monitoring plan from a watershed management project in Saigan province can be found in Annex 1. A useful tool for monitoring **activities**, participants, costs and other factors, in line with the monitoring plan, are the *Activity and Reporting Sheet* (illustrated in the [Concept Note on Participatory Planning, Monitoring and Reporting](#)). These also allow one to classify information systematically and make it available for further use, which is a critical part of the robustness and accuracy of the M&E system. Monthly and trimestral **reporting** is done using the data gathered through day-by-day monitoring; this makes it possible to take corrective measures for steering and learning.

## Major Monitoring and Evaluation Methods

**Core methods:** These core methods are very often used in monitoring and evaluation because they are particularly suited to measuring and recording **changes**.

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| <ul style="list-style-type: none"> <li>- Stakeholder analysis</li> <li>- Documentation review</li> <li>- Biophysical measurements</li> <li>- Direct observation</li> </ul> | <ul style="list-style-type: none"> <li>- Cost-benefit analysis</li> <li>- Surveys and questionnaires</li> <li>- Semi-structured interviews</li> <li>- Case studies</li> </ul> |
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**Discussion methods for groups:** These methods are particularly suited to participatory monitoring and evaluation processes. The card technique (pin board, cards) is particularly useful to stimulate and structure discussion.

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| <ul style="list-style-type: none"> <li>- Brainstorming</li> <li>- Focus groups</li> </ul> | <ul style="list-style-type: none"> <li>- SWOT or SEPO</li> <li>- Role plays</li> </ul> |
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**Methods for spatially-distributed information:** These methods make it possible to record geographical aspects. These may involve land distribution and land use questions, but they may also be about spatial aspects linked to health, education or economic issues

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| <ul style="list-style-type: none"> <li>- Sketch (mapping)</li> <li>- Transects</li> </ul> | <ul style="list-style-type: none"> <li>- GIS mapping</li> <li>- Photographs and video</li> </ul> |
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**Methods for time-based patterns of change:** These methods help with recording and understanding time-based change, e.g. changes from one month or year to the next.

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| <ul style="list-style-type: none"> <li>- Diaries</li> </ul> | <ul style="list-style-type: none"> <li>- Historical trends and time-lines</li> </ul> |
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**Methods for analysing linkages and relationships:** It is essential in monitoring and evaluation to grasp changes in the relationships between groups (stakeholders, organisations) as well as between problems, production cycles, resources, cause-effect, and input-output.

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| <ul style="list-style-type: none"> <li>- Mind maps</li> <li>- Impact flow diagram (cause &amp; effect)</li> <li>- Venn diagram</li> </ul> | <ul style="list-style-type: none"> <li>- Problem and objectives trees</li> <li>- M&amp;E wheel</li> <li>- Input-output diagram</li> </ul> |
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**Methods for ranking and prioritising:** Ranking is important, when information has to be compared on the basis of strengths, importance or pre-defined criteria.

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| <ul style="list-style-type: none"> <li>- Wealth ranking</li> <li>- Matrix scoring</li> </ul> | <ul style="list-style-type: none"> <li>- Ranking</li> </ul> |
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Figure 3: M&E methods for gathering information (SDC/Nadel, 2011)

## Evaluation

Evaluation is based on analysis and assessments of the data collected and reported as part of monitoring. It should present an overview of the project results and, ideally, also includes the perceptions of primary stakeholders. An evaluation presents the lessons learned and the changes that have taken place in a given context. It allows experiences to be capitalised upon and an ongoing project to be modified in line with the requirements of the stakeholders and their environment!



Figure 4: M&E allows for a plan to be adapted to changes in the environment (Herweg and Steiner, 2002)

## Further reading and references

Herweg, K. and Steiner, K., 2002: Impact Monitoring & Assessment - Instruments for Use in Rural Development Projects with a Focus on Sustainable Land Management. Volume 2: Toolbox. CDE & GTZ. Available at: <http://portals.wi.wur.nl/files/docs/ppme/impactmonitoringandassessment.pdf>

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Annex 1: Sample Format of a Monitoring plan (UNDP, 2002) with examples from the Green Saigan Project (HELVETAS Swiss Intercooperation, 2010)

Output / Outcome	Indicators	Methods of Data Collection	Data Sources	Frequency of Data collection E.g. Quarterly	Who is responsible for data collection / analysis	Who will use the information
<p><b>Outcome 1</b></p> <p>Communities have controlled flash floods</p>	<ol style="list-style-type: none"> <li>1. Number of severe events</li> <li>2. Number of irrigation systems, agricultural land, houses, human/animal lives being damaged/lost.</li> <li>3. % of critical gullies stabilized</li> </ol>	<p>Focus-group discussions, semi-structured interview, photo monitoring.</p>	<p>CDC, watershed committee, selected families, AFCAT Fact sheets.</p>	<ol style="list-style-type: none"> <li>1. Whenever a severe event happens.</li> <li>2.+ 3.</li> </ol> <p>At the start of intervention ("baseline), after two years (mid-term), after 4 years.</p>	<ol style="list-style-type: none"> <li>1. Community development councils</li> <li>2. Watershed committee</li> <li>3. Project staff together with CDC and watershed committee</li> </ol>	<p>Project staff and external advisor, for mid-term evaluation and end of phase report.</p>
<p><b>Output 1</b></p> <p>Technical Measures for flash flood control have been implemented</p>	<ol style="list-style-type: none"> <li>1. Number of small infrastructure constructed to stabilized gullies.</li> <li>2. Number of established water harvesting points.</li> </ol>	<p>Counting, measuring, direct observation.</p>	<p><b>Extension activity sheet.</b></p> <p><a href="#">☞ Concept Note on Participatory Planning, Monitoring and Reporting</a></p>	<p>Twice a year (May, November)</p>	<p>Watershed committee members together with project staff</p>	<p>Project staff and watershed committee members for the Extension Reporting sheet.</p> <p><a href="#">☞ Concept Note on Participatory Planning, Monitoring and Reporting</a></p>