Strengthening partnership and networks in agricultural research for development

a learning module

(Version 1.0)
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Session 9: Monitoring, evaluation and impact assessment of partnerships

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Trainer’s guide

Session 9: Monitoring, evaluation and impact assessment of partnerships

Purpose
To enhance the capacity of the agricultural researchers to forge effective and efficient partnerships with other relevant stakeholders in the agricultural innovation system for achieving greater impacts

Objectives
At the end of this session participants will be able to:
- clearly differentiate three concepts: monitoring, evaluation, and impact assessment
- explain different types of evaluation in relation to the project cycle and the activities involved
- explain different types of impact of R&D intervention and methods and techniques used to assess them
- discuss a conceptual framework to assess the impact of partnership programs

Resources
- Flipcharts
- White board
- Blank transparencies
- Flipchart and white board markers
- Computer and LCD projector
- Overhead projector
- Copies of handouts 9.1 to 9.4 for every participant

Time needed
2 hours

Method of facilitation

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
</table>
| Presentation   | Distribute handout 9.1 (presentation slides) before you start your presentation
|                | Give a presentation on monitoring, evaluation and impact assessment of partnerships allow some time for questions to make sure that participants understand what is presented.
|                | Distribute handout 9.2 (presentation text) to supplement your presentation |
|                | 60 minutes      |
| Exercise       | Distribute handouts 9.3 and 9.4 for exercise 9 on Studying key features of evaluation activities
|                | Ask a volunteer to read the exercise
|                | Ask participants to actively participate in completing the exercise.
|                | Remind them the time allotted to the exercise
|                | Invite the rapporteur to present their the group response |
|                | 55 min          |
| Transition     | Make closing remarks and transit to the next session |
|                | 5 minutes       |
Session 9: Monitoring, evaluation and impact assessment of partnerships: Summary of overheads

9.1 Monitoring, evaluation and impact assessment of partnership programs

9.2 Objectives

- To clearly differentiate three concepts: monitoring, evaluation, and impact assessment
- To explain different types of evaluation in relation to the project cycle and the activities involved
- To explain different types of impact of R&D intervention and methods and techniques used to assess them
- To discuss a conceptual framework to assess the impact of partnership programs

9.3 Monitoring

- Continuous assessment
  - Project activities
  - Use of project inputs
  - Outputs → Performance assessment
  - Outcome → Against baseline and indicators
  - Process

Conventional implementation/progress monitoring
9.4 Monitoring

- Is an internal management tool
- Purpose:
  - to take timely corrective action
  - Facilitate subsequent evaluation

9.5 Monitoring is closely linked to evaluation

Monitoring involves:
- Recording of data
- Analysis
- Reporting
- Storage

Data collected include:
- Physical and financial information
- Inputs and services provided
- Data obtained from surveys
- Socio economic indicators
- Information on key process

Against baseline

9.6 Relationship of monitoring and evaluation

Information from monitoring
Analysis
Recommendations
Affirmation or modification of objectives, resources and processes
Corrective action at the operational level
Storage
Process monitoring

9.7

What is a process?

- A series of steps and interrelated work activities, characterized by specific inputs, and tasks which add value, and make up a procedure for a set of specific outputs.

9.8

Process monitoring

What is it?

- Careful and systematic observation of activities
- Continuous process of observation, interpretation and organizational learning

Assumption:

- There is an ideal way in which a process should develop
- There is an objective where the process ought to lead

Why do it?

- Identify problems and bottlenecks
- Identify deviations from 'ideal' to tackle corrective action
- Institutional learning
Why process monitoring?

- Emphasis of the research on the process as part of an evolutionary adaptive system
- requires an action research orientation and the need to think about progressive change, where the different progressive stages need to be defined and redefined throughout the project
- Develop best practices

What is process monitoring?

- Focus on critical processes which are directly related to project objectives
- Continuous process of observation, interpretation and institutional learning
- Selection of activities and processes to be monitored is iterative
- Main focus is on qualitative indicators
- Information flows back and forth between field staff and management
- Process monitoring investigates processes within the community, project and wider socio-economic context
- Both internal and external processes

Steps involved in process monitoring

I. Establishing process monitoring:
   - Hiring staff
   - Training in participatory methods
   - Defining scope of process monitoring
   - Deciding on feedback mechanisms

II. Situation review and selection of process:
    - Study data relevant to project area and people
    - Identification of key processes and indicators

III. Observation:
    - Identify methods and techniques
    - Identify individuals to meet and processes to observe

IV. Reflections on findings:
    - What did we observe and learn?
    - Which part of our methodology worked and which did not?
    - To whom do we communicate our findings?
    - What are our recommendations?

V. Actions:
    - Make recommendations, present ideas for change, or adjustment in project strategy/procedures
    - Field test proposed changes before incorporation into project
Key steps in process monitoring

- Break up the innovation process that we are seeking to address into a number of distinct monitoring domains
- Identify key processes and indicators that are closely linked to project objectives and project cycle
- Limited number of processes should be selected, includ those which may prove to be bottlenecks during the course
- In each domain ask essential questions that need to be revisited as the project/intervention evolves

Useful tools for process monitoring

- Participant observation
- Participatory discussion (focus group)
- Semi-structured interview
- Transect walks
- Participatory resource mapping
- Participatory need assessment
- Process monitoring working groups
- Project planning meetings
- Special studies
- Topical sessions

To note...

- Ideal process monitoring methods and indicators should be effectively integrated into the project’s M&E system
- Clear criteria for monitoring processes, with clearly defined roles, responsibilities, methodology, realistic time frame and resources for implementation
- Open mindedness and willingness to listen to the views of others
- Flexible and adaptive
- Should operate at all levels focusing only on one level can be misleading by obscuring the impact of other forces on project effectiveness
Planning, monitoring and evaluation cycle

Evaluation

- Broader concept
- Aspects covered
- Impact during priority setting, eventual effect on development objectives
- Efficiency
- Quality

Performance

Quality

Relevance

Efficiency

Impact: during priority setting, eventual effect on development objectives
9.19

Types of research evaluation

Related to timing

- Occurs before: ex-ante
- Occurs during: ongoing
- Occurs immediately after completion: ex-post
- Occurs several years later: Impact
  - At different levels

9.20

Ongoing evaluation/mid-term evaluation

- Activities are reviewed at critical stages to determine if they should be continued, modified, or aborted
- Operational management tool
- Largely conducted through peer reviews, stakeholder reviews
- Indicates how efficiently resources are used and identifies implementation problems

9.21

Ongoing evaluation/mid-term evaluation

- Activities are reviewed at critical stages to determine if they should be continued, modified, or aborted
- Operational management tool
- Largely conducted through peer reviews, stakeholder reviews
- Indicates how efficiently resources are used and identifies implementation problems
9.22 Ongoing evaluation/mid-term evaluation (cont’d)

- Addresses problems associated with day-to-day management of research and can indicate the need for change in project objectives and targets
- Monitoring is fundamental for ongoing evaluation
- Feedback from target groups
- Often accomplished through a series of meetings

9.23 Ex-post evaluation/end of project review

- Assesses the performance, quality, relevance, and immediate outcome immediately after project completion
- Best conducted where a baseline was originally defined, targets projected, and data collected on important indicators
- Often done by professional evaluators
- Classical criteria need to be broadened to include user satisfaction
- Should be an integral part of project implementation

9.24 Ex-post evaluation/end of project review (cont’d)

- Advance preparation is essential
- Use a blend of interviews, field visits, observations, and available reports
- Lessons learned could be systematically incorporated in future activities, e.g. ex-ante evaluation as well as project planning
- Usually only done for more important, innovative, or controversial projects?
9.25

Impact assessment

9.26

Impact

- Special form of evaluation
- Deals with effects of research output on target beneficiaries
- Attempts to look at both intended and unintended effects
- Basic concepts of impact assessment are:
  - causality
  - attribution
  - incrementality
- Impact begins to occur when there is behavioral change among potential users

9.27

Evolution

1970s
- Germplasm adoption and crop mgt research

1980s
- Formal rates of return studies
- Spillovers and intersectoral impacts

1990s
- Gender
- Environmental impact assessment
- Institutional/organization impact
- Poverty-related work

Current
- Intermediate products
- Direct product
- People-level, developmental
- Economic
- Sociocultural
- Environmental
- spillovers
9.28

**Impact**

- Some cases used in a very restricted manner
- Long term effects of research on people, economy, society and environment
- More recently focus on ultimate development goals—food security, poverty alleviation, protection of the environment etc.

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9.29

**Purpose of impact assessment**

- Purpose depends on when the assessment is done ex-ante
  - To study likely economic impact of proposed intervention
  - To identify optimal portfolio
  - To collect information for ex-post evaluation

- Ex-post after completion of the program
  - To study the impact
  - For accountability purposes
  - Incorporate lessons learned in future planning
  - Establish credibility of public sector research
  - Justify increased allocation of research resources

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9.30

**Definition**

- Means different things to different people
  - Direct product of the activity
  - Effect of the direct product on ultimate users—people-level impact

- People-level impact cannot be assessed without
  - Information on the number of users
  - Degree of adoption
  - Incremental effect on the production costs and outputs
Levels of impact

- Impact studies can include
  - Innovation/technology/research program
  - Program plus complementary services
  - Different level
    - Household
    - Target population
    - Regional and national level
  - Primary sector, secondary sector, or overall economy

Production technology

Broadly refers to all methods that farmers, market agents, and consumers use to cultivate, harvest, store, process, handle, transport, and prepare food crops, cash crops, livestock etc. for consumption and other purposes

Production technology
Production impact

R&D technology

The organizational strategies and methods used by research and extension programs, including scientific procedures, organizational modes, institutional strategies, inter-disciplinary research etc.

Organizational impact refers to the effect of new R&D technology on the capacity of research and extension programs to generate and disseminate new production technology
Types of impact

- Production impact
- Economic impact
- Socio-cultural impact
- Environmental impact
- Institutional/organizational impact

Impact checklist

Institutional impact
- Changes in organizational structure
- Change in number of scientists
- Change in composition of the research team
- Multi-disciplinary approach/improvement
- Changes in funding allocated to the program
- Changes (increase/decrease) in public and private sector participation

- New technique/method
- Enhanced capacity for partnering

Product and income effect

- Risk reducing
- Yield increasing
- Cost reducing
- Reduction in inputs needed
- Employment creation
- Implication for other sectors of the economy
### 9.37 Socio-cultural impact

- Contributes to food security
- Poverty reducing
- Improves status of women
- Changes knowledge and skill level of people
- Creates (number and types of) jobs
- Destroys (number and types of) jobs
- Distributes benefits across gender and geographical locations
- Changes in resource allocation
- Changes in cash requirement
- Changes in labor distribution
- Nutritional implications
- Empowerment

### 9.38 Environmental impact

- Erodes/degrades soil
- Silting
- Compacts soil
- Contaminates soil
- Contaminates water resources
- Changes hydrological regimes
- Effects on biodiversity
- Pollutes air
- Contributes to greenhouse gases

### 9.39 Spillover effects

- Effects on farmers outside the target area within a country
- Regional implications—SADC, ASARECA, CORAF, APAARI
- International implications
- Cross-commodity effects
- Cross-sector implications
Comprehensive impact assessment

Intermediate impact
Direct product of research
People level impact

Institutional/organizational changes
Changes in the enabling environment
Economic impact
Social/cultural impact
Environmental impact

Direct effects
Spillover effects

Source: Anandajayasekeram et al. (1996).

Impacts of partnership programs

- Partnership is a means to an end
- Assessment of the partnership process and associated organizational and institutional impact
- Assessment of the impact of the intervention/project
- Value addition in terms of processes, outputs and outcomes

Impact chain and attribution gap

Planning
Activities
Resources
Input

Achievements
Output
Intermediate outcome
Immediate outcome
Ultimate outcome

Attribution of impact
Cost attribution to the project

Source: ILRI.
9.43 Conceptual framework to assess partnership

- Vision and leadership
- Partnership dynamics
- Strategy and performance measurement
- Impact
- Cost effectiveness/efficiency assessment
- Participation and commitment
- Influencing including change in attitude and culture

9.44 Conceptual framework to address partnership projects

- Joint interventions
- Processes *
- R&D impacts *
- Performance
- Outcome and impact
- Outputs / results
- Economic impact
- Socio-cultural impact
- Environmental impact

9.45 Impact types, techniques and methods

<table>
<thead>
<tr>
<th>Impact type</th>
<th>Method</th>
<th>Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate impact</td>
<td>Survey, monitoring including processes</td>
<td>Simple comparison/trend analysis</td>
</tr>
<tr>
<td>Direct product of research</td>
<td>Effectiveness analysis using logical framework</td>
<td>Simple comparison—target vs. actual</td>
</tr>
<tr>
<td>Economic impact</td>
<td>Economic approach surplus approach</td>
<td>Production function</td>
</tr>
<tr>
<td>Socio-cultural impact</td>
<td>Socioeconomic survey/ adoption survey</td>
<td>Comparison over time</td>
</tr>
<tr>
<td>Environmental impact</td>
<td>Environmental impact assessment</td>
<td>Various</td>
</tr>
</tbody>
</table>

* Changes in enabling environment
Multi-criteria analysis often recommended

- An ‘effect table’ or ‘effect matrix’ can be used for priority setting
- In a matrix table:
  - columns represent alternative projects/activities
  - rows represent criteria used for evaluating alternatives

Special considerations

- Input level monitoring—resources leveraged from multiple partners
- Output level monitoring—need to track activities carried out by each partner
- Assessing intermediate results—different partners may define partnership success differently
- Assessing the outcomes—responsibilities of the partners
  - Need intensive consultation
  - Balance between the value of the information collected and the cost in terms of time and money
  - Agree how M&E activities are funded; who will manage, and how to share data and information

Attribution

- Problem arises when there are alternative plausible explanations for the effects observed or measured
- Under these circumstances:
  - identify the most likely alternative explanations
  - present evidence to discount these alternative explanations
  - present evidence that the program is the more likely explanation for observed outcome
Objectives of M&E revisited

- Checking implementation
  - Record inputs, activities, and outputs
  - Identify deviations from work plans
  - Identify constraints/bottlenecks

- Assessing performance, quality, relevance and impact:
  - Overall efficiency (cost effectiveness)
  - Overall effectiveness (achieving objectives)
  - Suitability of new methods and technologies under testing at the field sites
  - Long-term impact (contribution to development objective)

Objectives of M&E revisited (cont’d)

- Reflecting and learning
  - Learning from achievements and mistakes
  - Increase capacity to perform better in the future and
  - Take corrective action

- Communication
  - Share progress and results with others

Comprehensive assessment

- Considers all aspects
  - Organizational
  - Institutional
  - Individual
  - Target group

- Key issues
  - Attribution
  - Causality
  - Incrementality

- Focus on processes, outputs and outcomes
- Institutional and organizational impacts are critical
### Note

Any assessment must:
- Demonstrate value of partnership
- Achievements of partnership
- Ensure priority objectives are aligned across partner organizations
- Challenge/address poor performance of partnership
- Improve decision making by providing feedback
- Provide basis for learning and development.

No single evaluation framework is applicable to assess all partnerships.

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### 9.53

Thank you!
Session 9: Monitoring, evaluation and impact assessment of partnerships: Summary of presentation

9.1 Introduction

The process of monitoring, evaluation (M&E) and impact assessment (IA) is the primary means of collecting and analysing information, and is thus essential for good project management. It informs the project management whether implementation is going as planned and whether corrective action is needed to adjust implementation plans. In addition, M&E systems should provide evidence of project outcomes and justify project funding allocations. The focus of M&E has shifted from monitoring implementation to tracking results and outcomes. Traditionally, M&E systems were implementation-focused and included tracking of input mobilization, activities undertaken and completed, and outputs delivered. However, the implementation-focused approach does not provide managers, stakeholders, or policymakers with an understanding of failure or success of the project in reaching the desired outcomes (Kusek and Rist 2004).

Impact assessment is a special case of evaluation that could be carried out both ex-ante and ex-post. This chapter attempts to provide a clear understanding of the various concepts and then focus on a conceptual framework that could be used in empirical studies to assess networks and partnership.

Partnerships and networking have implications for resources and are critical for innovation. It is therefore very important to monitor how they are functioning and evaluate if they are achieving the joint goals that were defined. Developing an M&E system is a crucial step in the design stage and should be an integral part of the implementation process.

9.2 Monitoring

Monitoring is a continuous assessment of both the functioning of project activities in the context of implementation schedules and of the use of project inputs by the targeted population in the context of design expectations. The goals of monitoring are:

- To ensure that inputs, work schedules and outputs are proceeding according to plan, i.e. that project implementation is on course
- To provide record of input use, activities and results and
- Early warning of deviations from initial goals and expected outcome.

Thus, monitoring is a process which systematically and critically observes events connected to a project in order to control the activities and adapt them to the conditions. Key steps in the monitoring process are:

1. Recording data on key indicators, largely available from existing sources, such as time sheets, budget reports, supply records.
2. Analysis performed at each functional level management. This is important to assume the flow of both resources and technical information through the system.
3. Reporting, often through quarterly and annual progress reports, oral presentations organized by project staff.
4. Storage, whether manual or computerized, should be accessible to managers at different levels of the system.
Monitoring is an internal project management tool. Integrating monitoring into implementation increases the accuracy of the collected information, reduces the cost of acquisition, increases the focus (alertness) of the participating scientists and reduces the time lag for management corrections. The major objectives of M&E are summarized in Box 1 below.

<table>
<thead>
<tr>
<th>Box 1: Objectives of M&amp;E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Checking implementation</strong></td>
</tr>
<tr>
<td>- Record inputs, activities and outputs</td>
</tr>
<tr>
<td>- Identify deviations from work plans</td>
</tr>
<tr>
<td>- Identify constraints/bottlenecks</td>
</tr>
<tr>
<td><strong>Assessing performance, quality and relevance</strong></td>
</tr>
<tr>
<td>- Overall efficiency (cost effectiveness)</td>
</tr>
<tr>
<td>- Overall effectiveness (achieving objectives)</td>
</tr>
<tr>
<td>- Suitability of new methods and technologies under testing at the field sites (relevancy)</td>
</tr>
<tr>
<td>- Long-term impact (contribution to development objective)</td>
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<tr>
<td><strong>Reflecting and learning</strong></td>
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<tr>
<td>- Learning from achievements and mistakes</td>
</tr>
<tr>
<td>- Increase capacity to perform better in the future and</td>
</tr>
<tr>
<td>- Take corrective action</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
</tr>
<tr>
<td>- Share progress and results with others</td>
</tr>
</tbody>
</table>

In the context of research, monitoring includes the periodic recording, analysis, reporting, and storage of data about key research and extension indicators. Data includes physical and financial information, details of inputs and services provided to beneficiaries, and data obtained from surveys and other recording mechanisms. Monitoring primarily provides information on project performance and gives signals on whether an activity is proceeding according to the plan. Monitoring is essential for evaluation.

It can also provide information on the socio-economic indicators for *ex-post* evaluation assessment. One could simultaneously monitor the resource use, i.e. of funds and personnel, as well as the process. Monitoring of the process may be accomplished through inter alia review meetings and periodic seminars. This permits management to compare the progress of work against planned activities, detect deviations, identify bottlenecks, and take corrective action while research is in progress. Monitoring and evaluation are closely linked and are an integral part of project cycle. The key differences between implementation monitoring and results monitoring are summarized in Box 2.

### 9.3 Process monitoring

In the recent past a distinction has been made between process monitoring and progress monitoring. Conventional progress monitoring focuses on physical, financial and logistical aspects of projects whereas process monitoring deals with critical processes which are directly related to the project objectives. An ideal M&E system should contain elements of both progress and process monitoring. The development of process monitoring was part of social science’s response to the need for field research data relevant for decision-making within a learning process approach.
Box 2: Key features of implementation—focused vs. results—based monitoring

Elements of implementation monitoring (traditionally used for projects)

- Description of the problem or situation before the intervention
- Benchmarks for activities and immediate outputs;
- Data collection on inputs, activities, and immediate outputs
- Systematic reporting on provision of inputs
- Systematic reporting on production of outputs
- Directly linked to a discrete intervention (or series of interventions) and
- Designed to provide information on administrative, implementation, and management issues as opposed to broader development effectiveness issues

Elements of results monitoring (used for a range of interventions and strategies)

- Baseline data to describe the problem or situation before the intervention
- Indicators for outcomes
- Data collection on outputs and how and whether they contribute toward achievements of outcomes
- Timelines expressed such as at mid-term and end-term
- More focus on perceptions of change among stakeholders
- Systematic reporting with more qualitative and quantitative information on the progress towards outcomes
- Done in conjunction with strategic partners and
- Captures information on success or failure of partnership strategy in achieving desired outcomes.


An underlying assumption of process monitoring is that there is an ideal way in which a process should develop; that there is an objective where the process ought to lead. Process monitoring tells the project staff and management that what was being observed is close to ideal. If not, then what needs to be done to steer the process closer to that ‘ideal’? Process monitoring is a continuous process of observation, interpretation and institutional learning. The core of process monitoring is addressing key project processes and identification of problems and bottlenecks resulting from them.

Process monitoring is participation-oriented. Participation in the systematic monitoring of processes is designed to promote the autonomy and self-responsibility of the actors. It is therefore essential that we approach process monitoring together with the actors, that we seek their participation.

9.3.1 Key feature of process monitoring

The difference between the conventional progress monitoring and process monitoring are summarized in Table 1 below.

The four basic activities of process monitoring are: Process selection, observation, reflection, and process steering/action. The sequence: process selection—observation—reflection—action requires coordination. We need to know when we have to get together with whom and why. A core task of process monitoring is therefore to organize and—again on the basis of observations—steer this meta-process. The quality of process monitoring is dependent on this being done regularly and systematically.
Table 1. Process monitoring and progress monitoring

<table>
<thead>
<tr>
<th>Process monitoring</th>
<th>Progress monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerned with key processes for project success</td>
<td>Primarily concerned with physical inputs and outputs</td>
</tr>
<tr>
<td>Measures results against project objectives</td>
<td>Measures results against project targets</td>
</tr>
<tr>
<td>Flexible and adaptive</td>
<td>Relatively inflexible</td>
</tr>
<tr>
<td>Looks at broader socio-economic context in which the project operates, and which affects project outcome</td>
<td>Focuses on project activities/outcomes</td>
</tr>
<tr>
<td>Continuous testing of key processes</td>
<td>Indicators usually identified up front and remain relatively static</td>
</tr>
<tr>
<td>Selection of activities and processes to be monitored is iterative, i.e. evolves during process of investigation</td>
<td>Monitoring of pre-selected indicators/activities</td>
</tr>
<tr>
<td>Measures both quantitative and qualitative indicators, but main focus is on qualitative indicators</td>
<td>Measures both qualitative and quantitative indicators, but main focus is on quantitative indicators</td>
</tr>
<tr>
<td>A two-way process where information flows back and forth between field staff and management</td>
<td>A one-way process where information flows in one direction, from field to management</td>
</tr>
<tr>
<td>People-oriented and interactive</td>
<td>Paper-oriented (use of standard formats)</td>
</tr>
<tr>
<td>Identifies reasons for problems</td>
<td>Tends to focus on effects of problems</td>
</tr>
<tr>
<td>Post-action review and follow-up</td>
<td>No post-action review</td>
</tr>
<tr>
<td>Includes effectiveness of communication between stakeholders at different levels as a key indicator</td>
<td>Takes communication between stakeholders for granted</td>
</tr>
<tr>
<td>Is self-evaluating and correcting</td>
<td>Is not usually self-evaluating and correcting</td>
</tr>
</tbody>
</table>


Process monitoring can be setup at various levels, and can address the interplay between these levels:

- An individual activity within a project, e.g. tree nursery
- Relations of cooperation within an organization, e.g. between extension team and management of the forestry service
- Cooperation between various actors, e.g. local government, forestry service, user groups, project team
- Institutional and socio-economic environment, e.g. effects of import restrictions or trends of national programs

In practice, process monitoring operates on all levels. Usually we observe both processes closely related to projects, and processes related to the wider context. Moreover, the levels move at different speeds, and are interconnected like spiral staircases. The basic features of process monitoring are the same at all levels. In practice, however, different terms are used: project process monitoring; strategic process monitoring (for context monitoring).

As a rule, we observe processes within an operational project cycle, from planning via implementation through to evaluation (including results-oriented M&E). To take into account the perspectives and interests of the various actors, we need to look beyond this cycle. What this means is: various groups of actors observe, reflect on and steer what we can term their projects. The standard construct project then breaks down into a number of projects or sub-projects of individual actors. Seen from this angle, the project then resembles a platform on which we need to negotiate joint projects with the actors.

The salient features of process monitoring are:

- Process monitoring observes features of process in each project phase and provides feedback for management for making necessary changes
- Process monitoring investigates processes within the community, project and wider socio-economic context.
- Process monitoring helps projects to learn from their own experiences and adapt to improve their effectiveness over time
- Process monitoring looks at both internal and external processes
- Process monitoring evaluates the quality and effects of project interventions and outcomes
  - Involves participant observation and critical assessment
  - Helps understand the motives, intentions and actions of different actors in a project
- Process monitoring can be used at different levels (individuals, within project, interaction between projects and other actors, wider institutional and socio-economic context) and to analyse the interaction between these levels.
- Process monitoring is also used to assess the impact of changes in project strategies, rules and procedures

9.3.2 Key steps in process monitoring

In networks and partnerships assessment, one of the key elements to be assessed is the partnership process itself. The key steps in the process monitoring are summarized in Figure 1 and discussed below.

**Figure 1. Steps involved in process monitoring.**

**Step 1: Defining scope of process monitoring**

It is important to define the scope of process monitoring from the very beginning. In defining the scope it is important to note that process monitoring cannot be carried out independently of progress monitoring. Process monitoring should be an integral part of the projects’ own M&E system. Process
monitoring activities should focus on project rules and procedures and communications between key actors and levels. The scope should define the objectives, boundaries, information recording as well as sharing of such information. In defining the scope:

- It is useful for process monitoring to be both ‘internal’ to project, but with ‘external’ linkages and independent reporting channels
- It is necessary to establish channels and procedures for information flow to and from the unit
- Information should be recorded and shared with key stakeholders
- Findings should be presented in an easily readable and usable form

The ultimate test of the success of process monitoring is whether the information it generates leads to concrete decisions and actions to address critical issues to improve project performance.

**Step 2: Situation review and selection process**

This step enables the group to reach a common understanding of which processes are important and why? Primarily the step involves collecting data on projects, project area, beneficiaries, discussing issues with key resource people and stakeholders.

There are basically two approaches for selecting key processes for monitoring:

- Key processes should be closely linked to project objectives and the project cycle. Key indicators are then identified for each stage in the project cycle. The number of processes selected for monitoring should be limited.
- Process not previously identified for monitoring, but in which the project experiences problems and/or bottlenecks may be added to the key processes identified earlier

The selection of processes to be monitored should be made in consultation with project management, staff, as well as beneficiaries and other relevant stakeholders.

**Step 3: Observing key processes**

It is important to observe processes as objectively as possible. At times specialized training may be required to minimize biases in people’s ability to observe objectively. Collection and analysis of qualitative information also requires relevant skills and experience. Therefore, it is important that process monitoring staff receive appropriate training before they begin their work.

In addition, a number of other questions also need to be answered in order to implement an effective process monitoring.

- Who makes the observation?
- What methods will be used for process monitoring?

The best methodology should be identified and agreed upon in advance. If the issue deals with community processes, then methods such as transect walks, participatory need assessment, participatory discussions, and participatory resource mapping are suitable. Some of the common tools used in process monitoring are summarized in Box 3.

**Step 4: Reflections on analysing findings**

When the observation is completed, it is necessary to assess the information collected. The team has to address a number of issues when analysing observations. These include:
Box 3: Useful tools for process monitoring

- Participant observation
- Participatory discussion (Focus group)
- Semi-structured interview
- Transect walks
- Participatory resource mapping
- Participatory need assessment
- Process monitoring working groups
- Project planning meetings
- Special studies
- Topical sessions

- What turned out differently than expected?
  - Which part of the strategy to gain insight into the process produced desired results and which didn't?
- Was a cross section of views sought and accommodated?
- With whom do the findings need to be shared?
- In what form should these be presented?

It is crucial to document answers to these questions and communicate to the relevant stakeholders.

**Step 5: Follow up action**

Based on the observations and analysis the unit/group should make recommendations for project management/institution. It is also imperative to identify and discuss the implications of the proposed changes.

### 9.3.3 Developing process monitoring indicators

One of the crucial steps in the M&E process is the identification of relevant and critical indicators. Indicators are variables that describe or measure changes in an activity or situation over time. They are useful tools for monitoring the effects of a process intervention.

Developing a set of indicators follow a three - step approach:

- Defining project objectives
- Asking relevant questions (What? Whom? When?)
- Identifying indicators.

  a. Defining project objectives and activities

  It is practically impossible to identify indicators and use them in the monitoring and evaluation process if the objectives, activities and output of the project are not clearly defined and understood by all stakeholders. Developing an ‘objective tree’ (based on the problem analysis/problem tree) and distinguishing priority immediate, intermediate and long-term objectives is a good way to start the process. A useful tool for defining objectives is the logical framework analysis.

  b. Asking questions

  Once the objectives are sorted out and agreed upon, a number of questions need to be answered before identifying indicators.
What do we want to know? (and how does it relate to the project objectives)
What information do we need and for what purpose?
What is the minimum number of indicators that will tell us that we have accomplished the objectives
How, when and by whom is the information to be collected?
What are the cost (resource) implications?

Answers to these questions will help us to identify the indicators and establish an M&E system for the project/institution.

c. Identifying indicators

Identification of the final set of indicators should be done in a participatory manner. While identifying indicators it is worth noting that

a. Each objective or activity can be measured by different indicators
b. Indicators may change over time as projects internal and external environment change and as the project activities change
c. Developing useful indicators is a process sometimes involving negotiation between conflicting interests

A final test for the indicators selected is to make sure that they are SMART (specific, measurable, attainable, relevant and timely)

Note:

• Ideally process monitoring methods and indicators should be effectively integrated into the projects M&E system;
• There should be clear criteria for monitoring processes, with clearly defined roles, responsibilities, methodology, realistic time frame and resources for implementation;
• An essential prerequisite for effective process monitoring is open mindedness and willingness to listen to the views of others. Process monitoring must be flexible and adaptive in response to changes; and
• Process monitoring should operate at all levels. Focusing only on one level can be misleading by obscuring the impact of other forces on project effectiveness.

Process monitoring might not be easy, but it does have many advantages:

• We gain access to the perceptual world and experiences of the actors.
• We identify the various interests and action strategies of groups and organizations.
• We become familiar with the passive and active resistance to processes of change.
• We promote the willingness of the various actors to respect different viewpoints.
• We elaborate practical solutions based on the experiences and action strategies of the actors.
• We promote the assumption of responsibility.
• We simplify complex and dynamic processes, which facilitates communication with the actors.

9.4 Evaluation

Evaluation is a much broader concept and is used to assess the following:

• The potential impact of research in priority setting and planning exercises;
• The performance and quality of activities in progress;
• The successful completion and relevance of activities; and
• The ultimate impact of results on the achievements of development objectives.

Any assessment, appraisal, analysis or reviews are in a broad sense evaluative. Evaluations result in a set of recommendations, which may address issues of planning, such as a shift in program objectives or contents or program implementation. Information from an evaluation is used in the management of technical programs, personnel, and financial resources.

Table 2 and Figure 2 below highlight the complementary roles and relationships between monitoring and evaluation.

Table 2. Complementary roles for monitoring and evaluation

<table>
<thead>
<tr>
<th>Monitoring</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Routine collection of information</td>
<td>• Analysing information</td>
</tr>
<tr>
<td>• Tracking project implementation progress</td>
<td>• Confirming project expectations</td>
</tr>
<tr>
<td>• Measuring efficiency</td>
<td>• Ex-post assessment of effectiveness and measuring impact</td>
</tr>
<tr>
<td>• Question: ‘Is the project doing things right?’</td>
<td>• Question: ‘Is the project doing the right things?’</td>
</tr>
</tbody>
</table>

Source: Alex and Byerlee (2000).

Figure 2. Relationship of monitoring and evaluation.

Evaluation in general addresses four important aspects of the program, namely: performance, quality, relevance and eventual impact.

• Performance compares achievements with expected output. It is primarily concerned with the use of resources and the timelines of the activity and is determined mostly through monitoring and ongoing evaluation. However, assessing the success or failure of research goes far beyond determining whether resources were used according to plan or activities were carried out on time.
• Quality deals with the adherence to accepted standards of scientific work and precision. The quality of research is determined almost exclusively through some form of peer/expert review.

• Relevance of research at each level of the research investigates on research relevance to objectives, which ultimately reflect on the developmental objectives. Relevance is closely related to the problem being addressed and the target group under consideration. Relevance is primarily assessed through peer or expert review and beneficiary assessment.

• Impact deals with the effect of the research output on the ultimate users often referred to as ‘People level impact.’

9.4.1 Types of evaluation

Evaluations are most often categorized according to when they occur in the project cycle and their purpose.

• Occurs before (ex-ante) the event—to assess the potential impact of research.

• Occurs during (ongoing) the event—to evaluate the performance and quality of the research project in progress.

• Immediately after the event (ex-post)—to determine the successful completion and relevance of research project.

• Several years after research results have been achieved (impact)—to assess its ultimate impact on development.

**Ex-ante evaluation**

*Ex-ante* evaluation is a research planning process which includes a comprehensive analysis of the potential impact of alternative activities before implementation. As the name implies the evaluation is done prior to the initiation of the project; at this stage not too much is known about the proposed project and estimates of costs and benefits are sketchy and the values assigned to them are only ‘ball-park’ figures based on informal judgment.

Methods used are peer or expert reviews using checklists, scoring models, and even cost–benefit analysis. To make *ex-ante* evaluation more effective, there should be participation from different disciplines and more comprehensive criteria must be applied. Through *ex-ante* evaluation, one could define the baseline against which progress will be measured, set targets, and state the assumptions used in making the projections. The indicators to be monitored should also be specified in order to assist *ex-post* evaluation.

**Ongoing evaluation**

Ongoing evaluations that are conducted throughout the technology development and transfer process are more useful for research management than *ex-ante* and *ex-post* assessments. Here ongoing activities are reviewed at critical stages to determine if they should be continued, modified or aborted. They are used to analyse the use of resources, the quality of research, and the continuing relevance of research programs and projects. Ongoing evaluation is often conducted through peer reviews. Ongoing evaluation addresses problems associated with the day-to-day management of interventions and also can indicate the need for changes in project objectives and targets.

Monitoring is fundamental for ongoing evaluation. It primarily tracks down the provision and delivery of inputs and services, the generation of information on the ability and deployment of staff, infrastructure, equipment, supplies, services, and funds for projects within a program. In on-farm research, the ongoing evaluation is used to obtain feedback from the target group; and is largely accomplished through a series of meetings at the site with peers, farmers, extension staff and NGOs.
Ex-post evaluation (immediately after the completion)

An ex-post evaluation, or final evaluation, assesses the project’s performance, quality, and relevance immediately after the project completion. It attempts to measure the effectiveness and efficiency of a completed activity and includes an analysis of the original assumptions used in planning. A good ex-post evaluation is linked to ex-ante evaluation, and can best be conducted where a baseline has been originally defined, targets have been projected, and data has been collected on important indicators. Ex-post evaluation is analysed from the project from beginning to end, determining whether project objectives were attained, causes for discrepancies, costs, and the quality and relevance of the research. Ex-post evaluation often considers such aspects as the cost effectiveness of research, its potential relevance to national development goals, the response of the research to an urgent and important problem, the acceptance of the results by farmers (end-users) and development agencies, and the contribution of the research to scientific progress.

Common criteria for evaluating scientific research are most notably number and quality of journal publications and instances of citation (citation index). These are not comprehensive enough to consider the appropriateness of the technology or its value to development. Therefore, the classical criteria need to be broadened to include user (i.e. farmers’) satisfaction.

The methods typically used for ex-post evaluation are statistical evaluation, economic evaluation, agronomic assessment, and farmers/community assessment. Advanced preparation for ex-post evaluation should include precise plans on documentation needed, people to interview and sites to visit. Some supplementary information may need to be gathered through surveys or interviews. Most evaluations use a blend of interviews, field visits, observations, and report writing. Ex-post evaluation also tries to clarify the internal and external factors affecting the outcome of the project. Ex-post evaluation can provide important insights into the research process and provide a basis for comparing alternative organizational methodological approaches. The lessons learned could be systematically incorporated into subsequent evaluations making the processes much more relevant and efficient.

9.5 Impact evaluation

This is a form of ex-post evaluation. Impact evaluation attempts to determine the extent to which Technology Development and Transfer (TDT) programs have contributed to larger development goals, such as increased farm production, or improved food security, poverty alleviation etc. Typically, it is conducted several years after the results have been released making it less useful as a management tool than the other types of evaluation. Ex-post impact assessments are often used to convince policymakers to allocate more resources to research. If the project and program evaluations are to be used to support impact evaluations, this should be considered during ex-ante evaluations and the necessary baseline data and an M&E system should be set up in advance to serve this purpose.

Impact evaluation must distinguish between the contribution research make to national development from the contributions made by other factors such as existence of good extension services, agricultural inputs, adequate infrastructure, and favourable marketing and pricing policies. It has been shown that benefits are relatively easy to attribute in the case of single commodity technologies, such as high yielding varieties of rice under irrigation in Asia. It has proved more difficult to do this in more diverse and complex systems as seen in most of sub-Saharan Africa. The key concepts in ex-post impact assessments are causality, attribution and incrementality. These aspects are discussed in subsequent chapters.
**Ex-post** impact assessments usually require extensive and often expensive data collection and a thorough analysis of socio-economic factors. The results of impact evaluations have broad implications for future priority setting, not only for research, but also for development support services. The types of impacts and methods used are discussed in the following sections.

### 9.5.1 Meaning of impact

The term ‘impact’ means different things to different people. In discussing the impact of any research program, one can identify two broad categories of interpretations (Anderson and Herdt 1990). In the first category, some people look at the direct output of the activity and call this an impact, e.g. a variety, a breed, or a set of recommendations resulting from a research activity. Most of the biological scientists belong to this category. The second category goes beyond the direct product and tries to study the effects of this product on the ultimate users, i.e. the so-called people level impact. The people level impact looks at how fit the program is within the overall R&D to discover facts (research) that have practical beneficial application (development) to the society. Impact begins to occur only when there is a behavioural change among the potential users. This second type of impact deals with the actual adoption of the research output and subsequent effects on production, income, environment and/or whatever the development objectives may be. The people level impact of any research activity cannot be assessed without information about the (extent) number of users and the degree (intensity) of adoption of improved techniques, and the incremental effects of these techniques on the production costs and output. The adoption of any technology is determined by several factors, which are not part of the original research activity.

In any comprehensive IA, there is therefore a need to differentiate between the research results and the contributions of research to development, i.e. the people level impact, and both aspects should be addressed. IA is directed at establishing, with certainty, whether or not an intervention is producing its intended effect. A program that has positive impact is one that achieves some positive movement or change in relation to objectives. This implies a set of operationally defined goals and a criterion of success. There is also a need to establish that the outcome is the cause of some specified effort. As such, it is important to demonstrate that the changes observed are a function of the specific interventions and cannot be accounted for in any other way. As pointed out earlier, the three basic principles to be observed in any impact study are causality, attribution, and incrementality.

### 9.5.2 Purpose of impact assessment

The purpose of IA of agricultural TDT activities depends on when the assessment is done. IA can be undertaken before initiating the research (ex-ante) or after the completion of the research activity (ex-post) including the technology transfer.

The purpose of undertaking an impact assessment prior to starting a research project/program is to assist the research manager/research team in planning and priority setting activities. This will enable one to:

- Study the likely economic impact of the proposed research activity/project;
- Formulate research priorities by examining the relative benefits of different research programs;
- Identify the optimal combination of research program; and
- In addition, an ex-ante assessment can also provide a framework for gathering information to carry out an effective ex-post evaluation.
Given the resource constraints confronting the research managers and researchers, *ex-ante* impact assessment is becoming a powerful planning tool in research management.

The various purposes for conducting an impact assessment after the completion of the program (*ex-post*) include:

- To study the impact and to provide feedback for researchers, research managers, planners and policymakers;
- Lessons learned can be used to improve the management and decision-making process with respect to priority setting, implementation, and management of research activities as well as technology transfer;
- For accountability purposes;
- To establish the credibility of the public sector research; and
- To justify increased allocations of research resources.

To sum up, there are four products of concern of collaborative R&D activities: outputs, outcomes, changes in institutional performance, and the final welfare impacts. They are sequentially produced and more difficult to document, articulate, measure, and attribute as one moves from outputs to impacts. Attribution remains one of the methodological challenges in IA studies. Looking into attribution, as far as possible joint impact of various players should be measured rather than trying to separate out the contribution of individual institutions, which may not be feasible in most cases. However, it is important to make sure that the inputs and contribution of all partners are appropriately acknowledged.

Three basic types of impact evaluation are possible: qualitative, quantitative, and a mixture of both. Qualitative evaluations describe the process by which the outputs of research and development activities have influenced institutional innovations and the eventual social impacts. It seems that the most appropriate approaches to IA should involve a mixture of both qualitative and quantitative methods. Retrospective narratives are essential components of the former and indeed provide the basis for quantitative estimates and the related issue of attribution.

### 9.5.3 Types of impact

Impact studies can be carried out to study the impact of a particular innovation/technology, on a research program, or on a research program plus complementary services (such as extension, marketing etc.). Impacts can also be measured at the individual household level, target population level, as well as national and regional levels (primary sector, or secondary sector, or overall economy). The direct product of an agricultural research project/program may be an improved technology (embodied or disembodied), specialized information, or research results (reports, papers and publications). There is general consensus that an agricultural TDT effort in addition to producing the direct product of research could potentially lead to five different types of impacts, namely production impact, economic impact, socio-economic impact, environmental impacts, and institutional impact. Institutional impact refers to the effects of TDT efforts on the capacity of the research and extension program to generate and disseminate new production technologies. These different impacts and the appropriate methods to measure them are discussed in the following section.

Based on the previous discussions, there are three broad categories of impact that form part of a comprehensive IA exercise. The first is the direct outcome of the research activities. The second, the intermediate impact is concerned with the organizational strategies and methods used by researchers,
and other actors in conducting more effective technology development dissemination and utilization. The third is the effect of the direct product(s) on the ultimate beneficiaries. This is the so called people level impact. The people level impact can be economic, socio-economic, socio-cultural, and/or environmental. This could be measured at both micro and macro level. The various types of impact are summarized in Figure 3.

![Diagram of comprehensive impact assessment](Figure_3.png)

Source: Anandajayasekeram et al. (1996). **Figure 3. Framework for comprehensive impact assessment.**

### 9.6 Overview of impact assessment methods

A comprehensive IA should simultaneously assess the various impact of the TDT. The various techniques and methods used to assess the different types of impact are summarized in Table 3 and discussed in the subsequent sections.

#### 9.6.1 Direct product of research—effectiveness analysis

The most commonly used approach for assessing the direct product of research is known as effectiveness analysis. A useful starting point for effectiveness analysis is the logical framework of the project. The logical framework permits the assessment of the degree to which the research activities have made changes in the desired direction. The logical framework itself is a simple matrix that provides a structure for one to specify the components of a program/activity and the logical linkages between the set of means (inputs and activities) and the set of ends (outputs). This logical framework makes the IA process transparent by explicitly stating the underlying assumptions of the analysis.
Table 3. Impact types, techniques, and methods used in a comprehensive assessment

<table>
<thead>
<tr>
<th>Impact type</th>
<th>Method</th>
<th>Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate impact</td>
<td>Survey, monitoring</td>
<td>Simple comparison/trend analysis</td>
</tr>
<tr>
<td>Changes in the enabling environment</td>
<td></td>
<td>Outcome mapping</td>
</tr>
<tr>
<td>Direct product of research</td>
<td>Effectiveness analysis using logical framework</td>
<td>Simple comparison—Target vs. actual</td>
</tr>
<tr>
<td>Economic impact</td>
<td>Econometric approach</td>
<td>Production function</td>
</tr>
<tr>
<td>Micro, macro, spill-overs</td>
<td>surplus approach</td>
<td>Total factor productivity</td>
</tr>
<tr>
<td>Socio-cultural impact</td>
<td>Socioeconomic survey/adoption survey</td>
<td>Comparison over time</td>
</tr>
<tr>
<td>Environmental impact</td>
<td>Environmental impact Assessment</td>
<td>Outcome mapping</td>
</tr>
</tbody>
</table>

Source: Anandajayasekeram et al. (1996).

The effectiveness analysis is a simple comparison of these targets to actual or observed performance of the project. Three sets of comparisons are identified in the literature: ‘before’ and ‘after’ comparison (also called historical comparison); ‘with’ and ‘without’ comparison; and ‘target’ vs. ‘achievement’ comparison. The most useful comparison is target vs. achievement. The targets need not be completely achieved for the project to be deemed effective. The movement in the direction of the desired target is evidence of project effectiveness.

9.6.2 Evaluating the impact of intermediate product(s)

The link between the intermediate product and the ultimate economic benefit is not clear and, therefore, tends to be ignored in most IA studies. The evaluation of the intermediate product is made difficult by the fact that the benefits of these products are not easy to quantify. Thus, most studies acknowledge the fact that having the institutional capacity to conduct agricultural TDT is of paramount importance. These studies, however, do not include the benefits in the assessment of the impact. The costs that are easy to quantify are usually included. Thus, the assessment of the intermediate product has been a tricky issue. The practice has been to trace the changes in institutional capacity over time using either simple trend analysis or comparisons over time. This requires baseline information on these indicators and careful monitoring. The results from these analyses can be incorporated into the quantitative analysis through a multicriteria analysis.

9.6.3 People level impact

As pointed out earlier, the people level impact can be economic, socio-cultural, and environmental.

The economic impact

The economic impact of TDT initiatives can be traced through its effect on production and income. The approach used is called the efficiency analysis. Efficiency analysis at the macro level assesses the people level impact by comparing the benefits that society gets from TDT and the costs incurred in conducting TDT programs. The benefits and costs are normally collapsed into a single number, the Rate of Return (RoR). There are two broad ways of calculating the rate of return to TDT: ex-ante and ex-post.
The *ex-ante* methods are useful as research planning tools as they aid in the selection of the research portfolio, priority setting, and resource allocation. The *ex-post* studies are useful for justifying past TDT investments, and demonstrating the payoff of such investments.

The *ex-ante* methods for estimating RoR include benefit–cost analysis, simulation models, and mathematical programming models. The last two methods are data and skill intensive and, therefore, rarely used.

*Ex-post* methods for RoR estimation can be divided into two broad groups. The econometric method uses the production function in which research and transfer activities are considered inputs and give the Marginal Rate of Return (MRR) to agricultural TDT. The MRR quantifies the returns to the last dollar expended in the research project. To determine the optimal allocation of funds, it is necessary to know the marginal benefit of the last research dollar invested. This is the only method that allows for the separation of the effects of research from those of extension and other support services. However, the data requirements have reduced the extensive use of this method.

At the micro level, i.e. individual farm level partial budgets can be used to assess the benefit of new technology to the farmer.

The second groups of methods are the *surplus approaches*. These methods calculate the benefits of TDT as the net change in producer and consumer surplus, employing a partial equilibrium analysis. The different techniques are based on the difference in the assumed nature and elasticities of the supply and demand functions. The benefit–cost approach has various combinations of the nature of the supply shift and the functional form of the supply and demand curves. The cost-saving approach is in between these two approaches, but based on the same theoretical foundation.

These methods calculate the Average Rate of Return (ARR). The average or internal rate of return takes the research expenditure as given and calculate the RoR for the project or program in its entirety. This provides information to assess the success of the project in terms of generating adequate returns. However, the ARR measure is not always helpful in determining if the allocation of research funding to the project was appropriate. Because of the historic nature of *ex-post* evaluation, the results of these studies have mainly been used as political instruments to secure future funding. They demonstrate how efficient past investments were, but not necessarily where research resources should be allocated in the present, or the future. For our purposes a simple technique such as a partial budget and cost benefit framework can be effectively used to estimate RoR of TDT efforts. The different techniques used to estimate the RoR are discussed individually in the subsequent chapters.

*Socio-cultural impact*

Socio-cultural impacts include the effects of research on the attitude, beliefs, resource distribution, status of women, income distribution, nutritional implications etc. of the community. These can be assessed through socio-economic surveys and careful monitoring. To be cost effective, appropriate socio-cultural questions can be included in adoption survey questionnaires.

*Environmental impact*

The adoption of modern agricultural technologies has often resulted in external benefits and costs largely through its effects on the environment. For example, the use of fertilizers or pesticides may lead to surface and ground water contamination by toxic chemical and algae, resulting in significant environmental costs. On the other hand, adoption of minimum tillage technology and herbicides by
farmers has probably had environmental benefits in the form of reduced soil erosion and nutrient loss. The full assessment of environmental quality issues requires complex analysis of physical, biological, social, and economic processes. This also leads into some measurement problems. Such a breadth of analysis is likely to be beyond the scope of most agricultural research assessment activities. Nevertheless, some assessment of environmental impact is necessary when evaluating agricultural research, especially where the environmental impact of the application of the research is likely to be significant. In the absence of data required for a thorough analysis, it may still be possible to identify qualitatively the nature of the social benefits and costs, together with the likely gainers and losers.

9.7 Multicriteria analysis

As discussed in the previous sections, due to the wide-ranging implications of agricultural research to the society, no single method is sufficient to adequately capture these impacts. Therefore, multicriteria analysis is often recommended for assessing the impact, which may also use a variety of methods. In this way, one could use more than one measure to assess the impact. Using the available information, one can construct an ‘effect’s table’ or ‘effect’s matrix’ which can be used for comparing projects. The columns of the effect’s table represent the alternative projects/activities, and the rows represent the criteria by which the alternatives are evaluated.

9.8 Assessing the impact of partnerships and networks

In any intervention, partnership can be viewed as a means to an end or an end in itself. If partnership is the end, then the criteria used for assessing the partnership may be different. In the real world, partnerships and networks are a means to an end. The ultimate end in any project is defined in terms of the goals and purpose of the intervention. If one has to assess the impact of partnership, we need to consider a situation where the individual organizations pursuing the same goal vs. the organizations coming together to pursue the same goals. Keeping everything else same, the difference between the two situations (the ‘with’ and ‘without’ situation) will give some assessment of the effect of the partnership. Thus the partnership assessment raises some critical questions about the extent to which collaboration actually adds value in terms of both processes and outcome and how this judgment might be made. It is often difficult to have the counter factual situation, making the assessment of the impact of partnership more difficult and more challenging. Therefore, in many situations the impact of the intervention is assessed in terms of the stated goals and purpose and during the course the partnership process is also assessed.

Under normal circumstances the impacts of R&D partnerships can be studied at different levels: generation of new knowledge, technology and innovation; changes in attitude of the various actors; strengthening of capacities; and finally the impact on the target groups (people level impact) such as policymakers and local populations. It is also important to focus on wider context to determine and learn from intended and unintended, and positive and negative impacts of research partnership projects on various stakeholders and at various levels.

In any interventions, combination of a set of resources leads to the implementation of a set of activities producing certain outputs (the direct products of interventions). As a consequence of using the outputs, the initial effects (the immediate outcomes) can be observed (e.g. crop yield/livestock productivity increases, soil erosion decreases, contributes to green house gases) in the form of both benefits (e.g. higher crop yield is marketed and household income increases) and social costs that stimulates a
learning process. Attitude and perception of people change and further impacts (intermediate impacts) may be triggered (e.g. local people gain more confidence, performance of the institutes/organizations enhanced. Finally, all these changes relate to the overall goals in terms of poverty alleviation, food and nutrition security, environmental impact as well as empowerment of the local people, i.e. the developmental impacts (people level impact).

Thus the impact studies of partnership projects focus on four specific domains.

- The new knowledge and technology (finding solutions and key problems): the direct outputs.
- Individual and institutes capacity building; changes in the attitudes of change agents, changed processes: the intermediate impacts
- Benefits to end users at policy levels: decision-makers, politicians, administrators; development agencies, donors etc.
- Benefits to end users at societal level: farmers, women groups, Community-based Organizations (CBOs), local populations, private sector etc.

Like any other R&D impact studies, the issues of causality, attribution and incrementality are also relevant to partnership assessments. The impact chain and the associated attribution gap are presented in Figure 4.

![Impact chain and attribution gap](image)

**Figure 4. Impact chain and attribution gap.**

### 9.8.1 Approaches to evaluate partnerships

Sullivan and Sketcher (2002) summarized the existing approaches to evaluate partnerships into a number of categories:

- Value for money evaluation: This approach emphasizes on questions of economic efficiency and to a lesser extent on effectiveness.
- Outcome focused evaluation: Here the emphasis is placed on the assessment of the outcome of the collaborative activity; and how these outcomes are achieved.
- Process outcome evaluation: Which examines the process of implanting an intervention through partnership in order to understand whether and how the objectives of the initiatives were met. This approach attempts to elaborate the circumstances in which particular intervention takes effect.
- Stakeholder or ‘Interactive’ evaluation: Which requires the consideration of the views of a whole range of stakeholders. The underlying assumption here is that the different stakeholders will have differential access and influence on the partnership as well as over the evaluation process.
- Evaluation of the collaborative mechanism: This approach focuses on the assessment of the means of collaboration, therefore on the partnership itself.

In any empirical impact study, one needs to consider all these aspects simultaneously. Atkinson (2005) developed a three-step process to guide partnership evaluation.

Step 1. Identifying key dimensions of evaluation. These are the key areas of partnerships that have been identified as having sufficient weight to warrant evaluation.

Step 2. Identification and description of sub-dimensions. Here each dimension identified in step 1 is broken down into sub-components.

Step 3. Assessment of sub-dimensions based on the available evidence.

Based on this, he proposed a conceptual framework to assess the partnership as shown in Figure 5. There are a number of similarities between this framework and the framework developed by Anandajayasekeram et al. (1996) which addresses the impact of any R&D investment.

![Evaluation framework for partnerships](image)


**Figure 5.** Evaluation framework for partnerships.

In Atkins’s framework, more emphasis is given to the partnership process. Some of the key questions related to the process that need to be addressed in the evaluation are:
• Are there shared goals, values and principles among the parties?
• Is there clear evidence of commitment in host organizations to working in partnership?
• Does the group member have the delegated authority to fully represent their parent organizations?
• Do the group members adequately present the partnership’s agenda back in their parent organizations?
• Have the involvement of the partners fundamentally impacted on how organizations and agencies plan, deploy resources and define roles, responsibilities and relationships?
• Is there a genuine commitment to joint working within the individual organizations concerned?
• Are there effective methods in place for involving the ultimate beneficiaries in the entire process?

Any conceptual framework for partnership assessment should therefore address the progress of the intervention (conventional) the processes involved; the performance (in terms of output) as well as the outcome (immediate and intermediate) and the impact (the ultimate outcome or the developmental goals) at the societal level. A conceptual framework for assessing partnership projects and program is developed by combining the frameworks of Anandajayasekeram and Atkinson and is presented in Figure 6.

9.10 Considerations in designing M&E systems

M&E in the context of partnerships introduces some special considerations that should be taken into account in M&E system design.

First input-level monitoring has a particular importance in any partnership. Partnerships rely on resources leveraged from multiple partners, and in many cases, these will not be documented in a legally binding obligating agreement; it will be important to build in a system to track the level of resources committed and disbursed to the partnership by each resource partner. This information is needed to provide assurance to all partners that each individual partner is meeting its responsibilities and there is an adequate flow of resources for meeting partnership objectives.

Second, output-level monitoring is more challenging in a partnership due to the need to separately track activities being carried out by each implementing partner and to develop common measures for similar activities being carried out by different partners to allow for a ‘summing up’ of the accomplishments of the partnership as a whole.

Third, assessing the intermediate results and development impact of a partnership is uniquely challenging. For one thing, rarely will partnership objectives completely overlap with the objectives of any one organization’s strategic plan. For another, different partners may define partnership success in different ways and hence be interested in tracing different partnerships ‘results’. All of these are legitimate measures of partnership ‘success’ that need to be incorporated in order to determine whether a partnership is meeting the distinctive objectives of each partner. The challenge is to knit these differing measures of success into an analytical framework that integrates each one into the strategic logic of the partnership as a whole.
As always in designing any M&E system, there is the need to strike a balance between the value of the information collected and the costs in time and money to collect it. The key consideration is what information is needed to:

- Effectively manage partnership resources, ensuring that partnership managers can get information they need to make mid-course corrections as appropriate;
- Properly account for use of taxpayer and shareholder funds; and
- Meet priority information needs of other stakeholder groups, such as host government or other donor officials engaged in related development programs, additional partners who may be sought in the future to sustain or expand the partnership, or others.

Determine what information is needed by whom and with what frequency and rigor will drive the design of any M&E system. Doing this in the context of a partnership requires intensive consultation with all partners. Once the scope of the desired system is defined, partnership managers then must agree on how M&E activities will be funded, who will manage them, and how widely the data and analyses will be shared.
The following framework could be used to systematically collect and analyse issues of partnerships and networks, to see if they are satisfactory in terms of their results and the way they manage their collaboration process.

- Understand the collaboration process in partnerships and networks and see how well it works;
- Assess if the partnership and networks generate the expected and relevant results and it does this in an effective way;
- Identify the strengths and weaknesses of partnerships and networks in areas related to trust, administration, management, leadership and the synergy it creates,
- Learn how it can make its collaborative process work better, when it still has time to take corrective action;
- Document the value of its collaborative process to partners, donors and the community;
- Make partnerships and networks more responsive to partners and the broader community; and
- Get agents more involved in the leadership and management of the partnership.

The evaluation framework presented in Table 4 could assist in this assessment.

**Table 4. Evaluation framework for partnerships assessment**

<table>
<thead>
<tr>
<th>Key dimension</th>
<th>Sub-dimensions</th>
<th>Evidence based question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Impact: The purpose is to assess the extent to which the partnerships has added value and achieved a greater impact than would have been achieved without its existence. This deals with the overall effectiveness and performance of partnership. The responsibility of the team here is to look for both qualitative and quantitative evidence</td>
<td>1.1 Quality</td>
<td>• To what extent has partnership working brought about an improvement in the quality of the service which would not otherwise have been achieved?</td>
</tr>
<tr>
<td></td>
<td>1.2 Innovation</td>
<td>• Has the partnership been innovative in the development of new services or approaches which would not otherwise have been introduced?</td>
</tr>
<tr>
<td></td>
<td>1.3 Integrated services delivery</td>
<td>• From the perspective of service users, has partnership working resulted in improved and integrated service delivery on the ground?</td>
</tr>
<tr>
<td></td>
<td>1.4 Changes to existing services</td>
<td>• Has the delivery of existing core services changed significantly to meet the needs of the users more effectively?</td>
</tr>
<tr>
<td></td>
<td>1.5 Resources</td>
<td>• Has partnership working enabled pooling of resources or an increase in the scale of services to reach more beneficiaries and/or more consistently?</td>
</tr>
<tr>
<td></td>
<td>1.6 Efficiency</td>
<td>• Is there greater efficiency in the way resources are being used?</td>
</tr>
<tr>
<td></td>
<td>1.7 Contribution to developmental goals</td>
<td>• What has been the impact on the livelihood, environment and other developmental goals, that could be attributed to the partnership?</td>
</tr>
<tr>
<td></td>
<td>1.8 Evaluation of R&amp;D Outputs</td>
<td>• What costs are involved in creating and running the collaboration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What products, results, and benefits (company and social) are obtained from the innovations to be generated in the partnership?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• How does the collaboration affect production, productivity and income of the agents in the agricultural sector?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What is the perception of participating agents on the worthiness of the activities conducted in the collaboration?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What minimal expectations on benefits do participating agents have with regard to the collaboration?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• How do participating agents behave strategically to insure that they attain benefits from the collaboration?</td>
</tr>
</tbody>
</table>
2. **Vision and strategy:**
The purpose is to see to what extent the partnership has been able to develop a shared and cohesive vision as an outcome of effective partnership. The team has to identify critical assessment criteria and generate qualitative and/or quantitative evidence.

2.1 **Future orientation**
- Is the partnership future orientated with key individual/s in place who can exercise leadership and create a vision though personal skills (rather than position or power) to catalyse, champion and nurture collaboration between individuals and organizations and secure the necessary resources?

2.2 **Making it happen**
- Are there key individual/s in place to make it happen possessing the skills to establish, facilitate and co-ordinate collaboration?

2.3 **Creating opportunities to lead and partner**
- How have leadership opportunities been created at all levels to empower and facilitate different individuals from a range of organizations to take up leadership positions?

3. **Partnership dynamics:** This deals with how effectively the partnership operates as a partnership. The purpose is to determine to what extent the partnership has developed appropriate structures processes, resources and culture conducive for collaboration.

3.1 **Evolution of partnerships**
- What reasons led or will lead to the collaboration? What did partners have in mind when entering the arrangements?
- How did the negotiations take place leading to the partnership contract?
- Which catalysing agents (internal and external) have been supporting the creation of the collaboration?
- Where did the initiative and the motivation for the collaboration originate from?
- What do agents expect from the other participating agents in the collaboration?
- What is the level of trust among the participating agents? Which mechanisms exist to create trust among the partners?
- Are there positive unexpected outcomes from the partnership?
- What are the companies and research organizations efforts to think on strategic market opportunities?
- Have the objectives of the partnerships changed or been redefined over time?
- Is there space for research teams in the partnership to involve in creative thinking on new product ideas?

3.2 **Functioning of partnerships**
- How are decisions made in the collaboration? Who takes them?
- Which governance models are used in the collaboration?
- Which financing arrangements assure the collaboration?
- Which unknown and conflicting actors; constellations did occur in the collaboration?
- Which legal rules apply in repartition of resources and redistribution of benefits?
- What obstacles loom in the partnership with regard to differences between the partners (language, culture, status, world view, bottom line)?
- What measures are in place to control use of funds and achieving of objectives?
- Which mechanisms of interaction and exchange of information exist in the collaboration? What information has been exchanged? How many agents have been contacted for how many times on what issues?
| 3.3 Structure and processes | • Does the partnership have in place appropriate organizational structures and processes to deliver partnership activities? |
| 3.4 Trust | • Has trust been built amongst individual organizations and stakeholders to facilitate collaboration? |
| 3.5 Commitment to an ethos of collaborative working | • Is there a commitment to an ethos of collaborative working evidenced by shared values and common goals, the decentralization of decision-making and the development of new roles and relationships? |
| 3.6 Communication | • Are the purpose, achievements and need of the partnerships being effectively communicated and promoted internally and to key external target audience/stakeholders? |
| 3.7 Learning | • Is that evidence of the learning being built into collaborative processes to improve the ability to work together and the effectiveness of partnership activities? |
| 3.8 Capability | • Does the partnership have the capability to deliver on its agenda through having access to adequate resources and the development of appropriate skills/competencies to support collaboration working? |

### Strategy and performance measurement: The purpose here is to assess to what extent the processes for strategic and performance measurement have been embedded within the partnership and the degree to which they are effective

| 4.1 Developing a strategic vision | • Has the partnership developed a strategic vision setting out its long-term vision based on identified need and a clearly charted strategic path as to how this will be achieved? |
| 4.2 Setting objectives and performance targets | • Has the strategic vision been translated into challenging and specific strategic objectives and performance targets, i.e. results and outcome? |
| 4.3 Formulating a plan to achieve those objectives and performance targets | • Does the partnership have a clearly defined plan setting out how those strategic objectives will be achieved, matched to its resources, competencies and capabilities? |
| 4.4 Implementing and executing this plan | • Are processes in place to ensure that the strategy is flexible and adaptable? |
| 4.5 Evaluating performance and reformulating the strategic plan and/or its implementation | • Are mechanisms and resources in place to implement that plan effectively to ensure that strategic objectives are achieved on schedule? |
| • Have processes been established to evaluate performance against the achievement of strategic targets to take necessary corrective action? |
| • Is the strategy kept under review in light of the changing internal/external environments? |

### Influencing: The purpose here is to determine to what extent the creation of partnership has enhanced the joint understanding of the political, organizational and funding context in which the partnership operates and how effectively it influence at different levels to bring about change

| 5.1 Influencing funders and policymakers. | • Is there evidence of the partnership being able to influence policymakers and donors in terms of the way they work, policy and strategy development and funding and resource deployment? |
| 5.2 Influencing partner organizations | • Is there evidence of the partnership being able to influence partner organization mainstreaming the approach into their overall planning and resource allocation? |
| 5.3 Influencing other relevant partnerships/initiatives | • Is there evidence of the partnership influencing and creating appropriate linkages with other relevant partnerships/initiatives? |
Participation: the purpose here is to assess to what extent the partnership actively promotes the involvement of end users and communities as stakeholders in collaborative action.

<table>
<thead>
<tr>
<th>6.</th>
<th>Participation</th>
<th>6.1 Membership</th>
<th>• To what degree are the end users and communities involved in the planning and implementation processes?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6.2 Community development</td>
<td>• Is community development utilized or promoted as a method of working to achieve objectives?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.3 Consultation with end users</td>
<td>• What is the extent of consultation and user involvement in decision-making about the planning and policies and other service delivery aspect?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.4 Communication</td>
<td>• How effective is the communication strategy to raise awareness and community support?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.5 Generating evidence and knowledge</td>
<td>• How does the partnership tap into community and user involvement to generate evidence and knowledge? i.e. participatory assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.6 Reduction in social exclusion</td>
<td>• Is there evidence of the partnership empowering communities to reduce social exclusion, and enhance continuity and sustainability</td>
</tr>
</tbody>
</table>

Cost effectiveness: The purpose here is to enable the partnership to weigh the cost against achievements and thus be able to substantiate how it is generating value for money for the range of stakeholders.

| 7. | Cost effectiveness | 7.1 Costs and benefits | • Proactive monitoring of the costs (direct and opportunity costs) of working in partnerships to establish whether or not these costs are outweighed by the achievements of the partnership. This should be an integral part of the overall assessment and complementary to other dimensions discussed earlier |


The critical questions raised with respect to the various dimensions should be addressed in the assessment. It is crucial to use the appropriate tools and methods to generate both qualitative and quantitative evidence to make an informed judgment about the performance and outcome.

Any assessment should:

- Demonstrate to partners the value of their participation as well the achievement of the partnership to the others.
- Ensure that partnership focuses on priority objective and that these are aligned across partner organizations.
- Challenge poor performance of the partnership
- Improving decision-making by providing feedback on progress, identifying areas where action is required to improve performance and reviewing resource allocation.
- Provide the basis for learning and development.

The methodology and approach should facilitate the evaluation of a complex and multifaceted partnership. The framework used should allow judgments to be made about the overall effectiveness of collaboration, facilitate debate about its sustainability and future direction and identify clearly defined areas for improvement, development and learning. It is important to keep in mind that no single evaluation framework is applicable to all partnership. The evaluator should look at the partnership under consideration and modify the framework to suit the specific nature and context.

9.11 Conclusion

Monitoring, evaluation, and impact assessment are critical activities in planning and implementation of R&D projects and programs. These set of activities will enable the various actors to be accountable and be able to demonstrate the impacts of R&D investments. Multiple tools are used to achieve this purpose.
The important thing to keep in mind is that, to be effective, M&E and IA should be an integral part of project planning and implementation. Hence, the culture of M&E and IA should be institutionalized at all levels. Please note that partnership is a means to an end. Hence in assessing the partnership projects, adequate attention should be focused on processes as well as the outputs and outcomes of the intervention. The intermediate impacts associated with the partnership processes are equally important as the outputs and outcomes of the intervention.

Key references


Session 9: Exercise: Studying key features of evaluation activities
(group work)

1. Form four groups of participants, each group elects a rapporteur.

Phase 1. Group work (30)

2. Discuss the project you were handling and respond to the questions below. Use the worksheet (handout 9.4) to record your responses.

3. Assume that you are in charge of setting up a monitoring evaluation system to assess the performance and impact of the project.
   a. Please develop the objective hierarchy (the logic path from input to impact—including partnership)
   b. Identify the relevant indicators/processes/products and methods you would employ to collect the data.
      • Note: anticipate and consider the indicators that each stakeholder would like to be included.
   c. Identify appropriate stakeholder(s) who will be responsible for these tasks.
   d. How do you want to use the lesson learned.

The groups organize their presentations, and the rapporteurs write the results on flipcharts and prepare to present their groups’ results. (30 minutes)

Phase 2. Reporting and discussion (30 min)

4. Rapporteurs present the groups’ results to the audience. Each rapporteur has 5 minutes to present the results. (20 minutes)

5. After the presentations, the trainer invites participants to participate in a plenary discussion. (5 minutes)

6. Trainer provides feedback on the content and closes the session. (5 minutes)
Session 9: Reading materials

Participatory impact monitoring (PIM)

Introduction

Participation has become a widely accepted strategy for planning, implementation and evaluation of R&D projects. The participatory approach values the input of the beneficiary and becomes associated with increasing the respect for and incorporation of indigenous knowledge, or beneficiary knowledge, in all aspects of a program or project. Participation occurs during the entire project cycle, namely: need assessment/problem identification, project/program design including feasibility analysis, project/program implementation; as well as monitoring and evaluation including impact assessment. The logical framework approach often used to identify objectively verifiable indicators for this purpose. It has been argued by development practitioners that this so-called traditional monitoring and evaluation cater for evaluating economic and technical impact and what is needed when dealing with communities is system of monitoring that may address the ‘softer,’ ‘hidden’ and ‘informal’ impact that the project may have on the target beneficiaries. These impacts are called ‘socio-cultural impacts.’ Traditional M&E systems are used to measure ‘objectively verifiable indicators’ whereas socio-cultural analysis wants to understand and develop qualitative indicators. Participatory impact monitoring (PIM) is an emerging method to assess the socio-economic impact of a project/program on the target beneficiaries—largely based on subjective judgment and perceptions of the stakeholders. The various aspects of PIM are discussed in this chapter.

Definition and objectives of PIM

The whole process of evaluation process since its inception has gone through several evolutionary stages. The current stage of development is called the fourth generation evaluation. The fourth generation evaluation deals with both subjective and objective means of assessment. Participatory impact monitoring (PIM) is one of the fourth generation techniques and it uses subjective interpretations as foundation for evaluation.

PIM is defined as a ‘method that is used to evaluate the socio-cultural impact that a project has on the project environment.’ Several autonomous actors are involved in PIM. These may be, according to context: farmer groups, self-help groups, development organization, NGOs, and the funding agency. These are what we usually call ‘stakeholders’ in a development project. PIM recognizes the subjective perceptions of all stakeholders! In other words, PIM is based on the joint perception of impacts by stakeholders.

Monitoring of budget, activities, and project objectives are catered for by conventional M&E systems. Therefore, PIM focuses on subjectively important changes. And since many actors are involved in a project, and because a project has got many impacts of different kinds, it is important to recognize both quantitative as well as qualitative aspects.

PIM invites members and stakeholders to observation, reflection and decision-making with respect to a project. The practical purposes of monitoring are: checking, reflection and learning. On the one hand, reflection takes time, but PIM argues that reflection, at the other end, saves time, because if you reflect you may avoid time-wasting activities. In this sense, ‘reflection is investment.’
It is believed that the involvement of all stakeholders in the monitoring exercise will improve the realization of projects. The objectives of PIM are then to:

- Gear activities to members’ needs;
- Involve members in observation, reflection and decision-making; and
- Strengthen the involved organization’s structures

In order for PIM to be applicable, stakeholders must be willing to be flexible and to face a change in the project, or operate according to the ‘trial and error’ technique:

- To move from more rigid schemes of evaluations to continuous monitoring;
- Move a little bit from the factual to the social level;
- To be more attentive to subjectively important changes rather than objectively verifiable indicators; and
- Begin to perceive trends rather than to determine exact information, and emphasize informal—rather than formal structures.

Against this background, we PIM argue that:

- Objectively verifiable indicators function mechanically; and
- In dealing with community-based development programs one needs simple monitoring systems and indicators.

Key elements in PIM

PIM is usually conducted at all levels of stakeholders in the form of groups. This adds an additional requirement for PIM to be effective, such as regular group meetings, the interest of members that the group leaders are willing to communicate, and that group members are willing to invest a little time in joint management.

To sum up, we may say that the key elements in PIM are the following:

- Interaction between the project actors. Each group of actors covers its area of interest. A systematic mode of observation is not achieved by accumulating data, but only through cooperation between actors. The project data and autonomous monitoring systems of the individual actors are discussed regularly at Joint Reflection Workshops. If the aims and perceptions of the individual actors differ, PIM may serve as an early warning system.
- Informal structures play a significant role in PIM. The significance of the informal structures is underlined by the existence of the different actors participating in monitoring. The observation criteria, indicators, and reporting only have to be suitable for the respective actors, so that they can make decisions.
- The more intangible the goals, the less exact the information that can be obtained. PIM is especially suitable when we are dealing with development goals, thus catering for the subjective interpretations of all actors involved.
- PIM wants to encourage actors to form hypotheses about their expectations. This means that since the goals of PIM are intangible, we cannot expect to obtain exact information. Even if the information is not accurate, it is first assessed within a group, verified and disputed and, if necessary, supported by additional perceptions from other group members. Therefore, the group serves as a filter and corrective mechanism. So, rather than perceiving objectively verifiable facts, PIM aims at discerning trends. This means that:
  - Inaccurate observations are permissible
  - No formal indicators are expected
PIM does not make a strict differentiation between changes, effects, and impacts. Firstly, PIM rather tries to identify the subjectively important changes at the beginning. Only in a second step does PIM determine how these changes are related to the activities of the project actors and, hence, they become effects. Thirdly, the performance and range of changes are determined by regular monitoring. Due to this ‘self-cleaning-mechanism,’ effects and performance are filtered out mechanically.

The key elements of PIM are regular observation and reflection at different intervals and to a different depth at the individual level. PIM can be used at any stage in the project cycle, since it is not based on formal specifications or plans.

PIM contains elements of both formal logic and network logic. Expectations, as we shall see below, turn into indicators, which may be used for purposes of formal logic. The different actors involved also provide PIM with a natural network logic. Additional spill-over effect in the form of learning processes.

Special features of PIM

The special features of PIM are:

- Complementary to conventional, or formal, M&E methods;
- Goal oriented;
- Emphasizes socio-cultural impact;
- Based on informal processes and structures;
- Indicators may not always be exact, but will however illustrate essential trends quickly and plausibly;
- Subjective evaluation is an important selection instrument. PIM wants a solution that is subjectively the best for all actors;
- Uses limited perceptions to recognize patterns and interpret them;
- Guided more by experience and intuition;
- Promotes autonomous activities of the stakeholders;
- Encourages co-operation and participation; and
- Self-help promotion by stakeholders

Steps in PIM

PIM is performed in several steps, and is ideally conducted simultaneously by all actors involved in their respective locations and at their respective levels. The different groups regularly exchange their information, perceptions, and interpretations at Joint Reflection Workshops, discussing their expectations and fears regarding the project, thereby enhancing understanding between the groups. A systematic mode of observation is not achieved by accumulating data but only through co-operation between actors. The more congruent the aims and expectations of the individual actors are, and the more they are in agreement with the overall project goals, the more smoothly and efficiently PIM will function. The aim of the Joint Reflection Workshop is to discuss and communicate the observations of those involved regularly. At this occasion observations are compared, the socio-cultural impact is analysed, decisions are taken, and, if necessary, measures and decisions may be taken to improve on the monitoring. The first year it may be useful for the Joint Reflection Workshop to meet every three months. After the first year, an annual meeting may be enough. In order to set up an effective PIM, several basic questions need to be answered.
What should be monitored?

The first step of PIM consists in determining what it is to be monitored. It is useful to monitor informal and comprehensible objectives, such as expectations and fears, and the effects that were not planned. The group should systematically monitor the changes that are important to them. We can say that PIM aim at collecting fears and expectations, by answering the following questions:

- ‘What changes do we expect from the project?’
- ‘What changes do we fear from the project?’

By means of prioritizing, the group may then reach consensus and select 3–5 important aspects. This process should be dynamic. Therefore, the expectations and the fears should be corrected and refined continuously. The project team on their behalf may reflect over the issue: ‘Based on previous experiences, what socio-cultural changes do you expect or fear from the project?’

How can it be monitored?

After having chosen some expectations and fears, the group should attempt at establishing some concrete examples of how it is possible to see if things are changing the way they want or not. Now you are looking for indicators! Here PIM does not ask for scientific solutions, but for practical ones, and relies on the collective knowledge of the group. In establishing the indicators continuous reflection, is more important than gathering of hard data! This may seem a little bit difficult, and therefore PIM suggests four ways to establish indicators, out of which the appropriate one is to be selected:

- Measuring or counting
- Scaling or rating
- Classifying
- Describing qualitatively.

Other stakeholders may wish to link with, if available, conventional M&E system at this step.

Who should monitor?

The responsible people for monitoring should be chosen at the meetings held by the group. By assuming the role of observers, members of the group learn to watch for relevant changes and to assume responsibility. It is important to stress, once again, that it is crucial that members are interested in follow-up and monitor of the indicators and that they do that responsibly. Often members holding senior positions are chosen to avoid the creation of a parallel structure of power.

How can results be documented?

There is a need to keep a record of the indicators in the monitoring process. This note can be summed up as follows: ‘Always carry a notebook and a pen behind!’ For example, if three people would visit a cattle market with the aim at establishing the market prices of different livestock, and do not bother about taking notes, it is quite possible that they will quarrel about the information received at the end of the day. Had they taken notes, there would have been peace in the team. Any way of recording is appropriate, such as tables, graphics, charts, and descriptions. However, the group may wish to keep some information inside the group, and not to be exposed at the Joint Reflection Workshops. It is important for the group to decide on this.

Another crucial step in the process is monitoring of reports. At the beginning of every group meeting, indicators are reviewed, and relevant changes are observed, following the presentations of the observers.
The revision of indicators can be done by asking a simple question, ‘What have we observed?’ Following the presentation, there may emerge a discussion in a group as to whether other relevant changes have taken place! Some useful questions at this step are:

- ‘Have the indicators changed?’ If yes, this may lead to corrections and refinements of the indicators used.
- ‘What other important factors have changed?’ This will indicate whether additional indicators ought to be observed.

The reports of the involved stakeholders are then presented at the joint reflection workshop. As a loose guide for discussion, it may be useful to discuss the following topics together:

- ‘What has changed?’
- ‘What/who has changed?’
- ‘What has caused the change?’
- ‘How has it changed?’
- ‘How has this change affected you?’
- ‘What other change(s) has/have occurred as a result?’

It may appear at the workshop that the monitoring system needs to be revised or changed. This may happen if the following applies:

- If time shows that indicators are not useful!
- If new fears and expectations arise!
- If funding agencies need improved information flow! If this applies, the group must decide what they think about it, and negotiate with the external organizations!

**Analysis—Why these results?**

It is important that the findings from the preceding step are reflected upon and discussed. Generally, the results of observation require analysis and discussion in the following situations.

- If things are always as expected, this is probably a success and it is worthwhile analysing occasionally why and how these results have been achieved!
- If the monitoring results show that there are problems that require decisions, the meeting should put the topic on its agenda immediately.

At this step, cause–effect relationships are not documented but can be prepared at any time.

**What action should be taken?**

After the analysis, the group defines its agenda and takes decisions. The decisions are based on factual reasons and the members are enabled to participate responsibly. The leadership of the organization becomes more transparent and democratic.

The last step, taking action, is not a final one, however. The action that we take will create new impacts on the project environment and each stakeholder will then be back at step one again and re-initiate the process of monitoring, establishing indicators, reflect upon those, and so on. The process of reflection will provide a useful point of learning from all actors involved: learning about ourselves, as well as learning from others.
Limitations of PIM

PIM is actually a very simple and easy monitoring system, once you become used to carry your notebook behind, and start looking for, and reflecting about, the indicators that you have selected. However, PIM has its limits. Some of them are that:

- PIM is only a concept and cannot be solution to all problems.
- Limited to a manageable number of dynamic elements.

Until we learn how to apply PIM and acquire the necessary experience in doing so, its value as a tool will be limited. PIM should always be used in conjunction with an objectively oriented M&E system.

It is worth noting that the comprehensive impact assessment framework proposed in this source book includes the socio-cultural impacts also.

Key reference

Eberhard G and Germann D. 1996. The concept of participatory impact monitoring. GTZ; GmbH; Eschborn.
Participatory evaluation

Introduction

The past two decades have seen an increased recognition of the importance of participation by beneficiaries and a wide range of other stakeholders in decision-making. Experience has shown that participation improves the quality, effectiveness and sustainability of development actions. By placing people at the centre of such actions, development efforts have a much greater potential to empower and lead to ownership of the result. For those involved specifically with evaluation, there has been a growing dissatisfaction with conventional modes of assessment that claim to be scientifically neutral and unbiased yet have had very little impact on how development activities are carried out. This has led to the various participatory approaches, tools and methods. The concepts of ‘participation’ and ‘participatory’ are discussed elsewhere in this source book.

Participatory evaluation involves the stakeholders and beneficiaries of a program or a project in the collective examination and assessment of the program or project. The evolution of participatory evaluation is summarized in Box 4. Participatory evaluation is people centred: project stakeholders and beneficiaries are the key actors of the evaluation process and not the mere objects of evaluation.

Box 4: Evolution of the evaluation process

The evaluation process since its inception has gone through different stages. Guba and Lincoln call participatory evaluation the Fourth Generation Evaluation.

First generation evaluation emerged in the 1900s and characterized as measurement, oriented, associated with the scientific management movement in the business and industry. The role of the evaluator was technical, providing tools and instruments for measurement—student performance assessment and time studies. Sound generation evaluation concentrated more on descriptions and led to program evaluations. Focused beyond measurement, dealt more on the achievement of objectives and analysis of strengths and weaknesses. The role of the evaluator went beyond the technical to include that of describer.

The third generation evolution was characterized by efforts to include judgment as an integral part of evaluation. Thus the evaluators also became judges.

The fourth generation evaluation refers to the most recent evolution in evaluation practice and involves negotiations. It incorporates stakeholders more centrally into the evaluation process by taking into account their claims, concerns and issues. They embrace a more qualitative approach to evaluation. The evaluator becomes facilitator of the negotiation process with stakeholders who participate in designing implementing and interpreting the evaluation. Stakeholders are not viewed as subject of experiment or object of study, but rather as participants in the evaluation process.

Participatory evaluation is reflective, action oriented and seeks to build capacity by

- Providing stakeholders and beneficiaries with the opportunity to reflect on a project progress and obstacles.
- Generating knowledge that result in the application of lessons learned and leads to corrective action and/or improvement.
- Providing beneficiaries and stakeholders with the tools to transform their environment.
Participatory evaluation is context-specific, rooted in the concerns, interests and problems of program end-users. The end-users immediate reality is what charts the route and determines the evaluator’s purpose and direction. Flexibility is the key work in participatory evaluation. Choices must be made about the degree to which end-users can realistically participate in the process.

Functions of participatory evaluation

Participatory evaluation serves four key functions, some of which concern the stakeholders and beneficiaries while others relate to the funding agencies.

1. It helps to build the capacity of stakeholders to reflect, analyse and take action—such analysis should occur throughout the life of the project.
2. It can contribute to the development of lessons learned that can lead to corrective action or improvement by project recipients—when project stakeholders are involved in analysing problems, constraints and obstacles, they can often propose solutions.
3. It can provide feedback for lessons learned that can help program staff to improve program implementation. A participatory evaluation not only looks into the past but also guides into the future.
4. It helps to ensure accountability to stakeholders, managers and donors by furnishing information on the degree to which project objectives have been met and how resources have been used.

The focus on lessons learned is an essential dimension of participatory evaluation. Such evaluations should help to guide projects into the future by giving stakeholders the tools with which to take corrective action. In addition lessons learned should provide donors with the insight and tools to improve program delivery and management.

Participatory evaluation may take place during the course of a project (usually at its mid point) towards or at the end or a significant amount of time (e.g. 2 years) after a project has been completed. Undertaking an evaluation at mid-point offers several advantages. It presents an opportunity to take stock of a project’s progress to date, its achievements and any obstacles encountered. Lessons learned can be applied and corrective action can be taken if necessary. Since mid-term evaluations are forward looking, they can provide stakeholders with the tools to take different source of action.

Key characteristics of a participatory evaluation

The following are the key features of a participatory evaluation

- It draws on local resources and capabilities;
- Recognize the innate wisdom and knowledge of end users;
- Demonstrates that end-users are creative and knowledgeable about their environment;
- Ensures that stakeholders are part of the decision-making process; and
- Uses facilitators who act as catalysts and who assist stakeholders in asking key questions.

At the heart of participatory monitoring and evaluation (PM&E), however, are four broad principles:

- Participation—which means opening up the design of the process to include those most directly affected; and agreeing to analyse data together.
- Inclusiveness—the inclusiveness of participatory M&E requires negotiation to reach agreement about what will be monitored or evaluated; how and when data will be collected and analysed, what the data actually means, and how findings will be shared, and action taken.
• Learning—the process leads to ‘learning’ which becomes the basis for subsequent improvement and corrective action.
• Flexibility—since the number, role and skills of shareholders and external environment and other factors change over time, flexibility is essential.

Characteristics of participatory evaluation are:

• Collaboration
• Problem-solving orientation
• Generating knowledge
• Releasing creativity
• Using multiple methods
• Involving experts as facilitators and
• Using participatory evaluation.

Collaboration deals with the participation of all those affected by project decisions in the evaluation process. This includes beneficiaries as well as program and project staff. Special efforts are made to ensure meaningful participation of women, junior project staff as well as extension workers. It is important to ensure that all stakeholders are involved in the process.

Problem-solving orientation
The driving force behind participatory evaluation is not accountability to outsiders, but development at the local level. Participatory evaluation becomes a process whereby participants in a development project are empowered to learn and take effective action in solving problems.

Generating knowledge
Participatory evaluation aims to generate knowledge among local people at the community and project level. When users are actively involved in data collection processes, information becomes transformed into knowledge and leads to self-sustained action.

Releasing creativity
Participatory methods are creative and learning in this environment builds self-esteem and confidence essential for initial action.

Using multiple methods
Validity and reliability are achieved through the use of multiple methods, and by including different users and stakeholders in community building. If available tools are considered inappropriate, new tools are created.

Involving experts as facilitators
If evaluation expertise is not available within the community, then an external expert is included to facilitate shared decision-making throughout the entire process of participatory evaluation. The task of the facilitator is to share ideas, help people consider options, and let the process be taken over as far as possible by users, community people and project staff.

Basic assumptions of participatory approach

• To be effective, participatory approaches require significant time and flexibility in order to account for unexpected events;
• Participatory approaches still call outside expert advice. Outsiders have recognized their limitation in performing participatory evaluation;
• Programs or projects that provide indirect benefits to the community may be more difficult to do in a participatory sense than direct benefit projects;
• Participation and participatory approaches are particularly desirable strategy in the case of projects with a broad client base and/or direct delivery to individual beneficiaries and researchers;
• Participation and participatory strategies work best when evaluators have inside knowledge of program and geographic locales in which program/evaluation is being carried out; and
• Participatory evaluation approach still benefits from expert input from those knowledgeable about the program sector, and evaluation theory and practice. The evaluation professional must continue to give advice on evaluation approaches and past experience in participatory evaluation.

Participatory evaluation and conventional evaluation

The key differences between participatory evaluation and conventional evaluation are summarized in Table 5. The conventional evaluation is in most cases donor focused and donor driven. Donors are the key clients, provide the financial support and contribute significantly in defining the terms of references (ToR). Very often evaluation is carried out more to fulfill a management or accountability requirement than to respond to project needs. An outside expert/evaluator or team is hired to conduct the evaluation. The evaluators collect the data, review the project or program and prepare a report. In most cases, stakeholders or beneficiaries play a passive role, providing information but not participating in the evaluation itself. The process can be considered more linear, with little or no feedback to project.

<table>
<thead>
<tr>
<th>Table 5. Participatory M&amp;E and conventional M&amp;E</th>
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<tbody>
<tr>
<td><strong>Conventional M&amp;E</strong></td>
</tr>
<tr>
<td>Who plans and manages the process</td>
</tr>
<tr>
<td>Role of primary stakeholders and intended beneficiaries</td>
</tr>
<tr>
<td>How success is measured</td>
</tr>
<tr>
<td>Approach</td>
</tr>
<tr>
<td>Defining terms of reference</td>
</tr>
<tr>
<td>Question makers</td>
</tr>
<tr>
<td>Evaluator/evaluation team</td>
</tr>
<tr>
<td>Process</td>
</tr>
<tr>
<td>Purpose</td>
</tr>
<tr>
<td>Role of the evaluator</td>
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<tr>
<td>Method</td>
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</tbody>
</table>

In a participatory evaluation, the role and purpose of evaluation change dramatically. Such an evaluation places a much (if not more) emphasis on the process, as on the final product of the report. The purpose of the evaluation is not only to fulfill a bureaucratic requirement but also to develop the capacity of stakeholders to assess and take action. Stakeholders and beneficiaries do more than providing information. They also decide on ToR, conduct research, analyse findings and make recommendations. The evaluator in conventional evaluations becomes more of a facilitator in participatory evaluation—guiding the process at critical stages and consolidating the final report based on the findings of the stakeholders.
Participatory evaluation recognizes the wide range of knowledge, values and concerns of stakeholder and acknowledge that these should be the litmus test to assess and then guide the project performance. Participatory approaches to evaluation have the capacity to empower recipients. The active participation of stakeholders can result in new knowledge or a better understanding of their environment. It is this new knowledge and understanding that can enable them to make changes they themselves have discovered or advocated. As a result of active involvement of stakeholders in reflection, assessment and action, a sense of ownership is created, capacities are built, beneficiaries are empowered and lessons learned are applied both in the field and at the program level, thus increasing the effectiveness.

The emphasis in participatory M&E is placed on beneficiaries and stakeholders not as providers of information, but as active participants in the evaluation process. Supplementing more formal methods of inquiry, such as standard questionnaire or one-to-one interviews, with non-formal techniques can yield rich information than the use of only formal methods.

Collaborative evaluation approach

A collaborative approach is one form of participatory approach in which the evaluator works directly in partnership with a group of stakeholders (people who have a stake, i.e. vested interest, in how the evaluation comes out) to focus key evaluation questions, design the evaluation study, interpret the results, and apply findings. This is a process of shared decision-making. The evaluator is ‘active-reactive-adaptive’ in facilitating an evaluation process that addresses the concerns, interests, questions, and information needs of a group of stakeholders organized into some kind of evaluation task force. The evaluator helps the task force members to deal with the issues of utility, feasibility, propriety, and accuracy, but does not decide unilaterally how these standards of excellence will be met. In a normal situation, however, the evaluator is completely responsible for the process and responds to the audience’s requirements for information.

The process of collaborative evaluation involves:

- Discussion with clients, program staff, and audiences, i.e. everyone in and around the program, to gain their expectations and purpose for the evaluation;
- Based on these discussions, the evaluator places limits on the scope of the evaluation program;
- Evaluator begins to discover the purpose of the project, both stated and real, and the concerns that various audiences may have with the project and/or the evaluation;
- Evaluator then begins to conceptualize the issues and problems that the evaluation should address;
- Design the evaluation process. Given the data needs, the evaluator selects whatever approaches are most useful for generating the data;
- Evaluator now proceeds to carry out the data collection procedures that have been identified;
- Once the data have been collected and processed, the evaluator shifts to an information-reporting mode. The evaluator also identifies the key issues for reporting; and
- At times, evaluators’ are not very skilled at working with groups. They need patience, sensitivity, and good humor.

Participatory impact assessment

What is PIA?

Participatory Impact Assessment is an extension of the application of Participatory Rural Appraisal (PRA) approaches and tools to monitor and evaluate projects. Here, the participatory tools are adapted
and combined with the conventional, objectively oriented methods to measure the impacts. PIA was designed to measure the impacts of humanitarian assistance and development projects on people's lives. The proponents argue that PIA can be used to overcome some of the inherent weaknesses in the conventional approach to M&E such as: emphasis on measuring progress as opposed to impact, emphasis on external as opposed to community-based indicators of impact; and how to overcome the issue of weak or non-existent baselines. To an extent the approach also can handle the attribution issue.

The approach acknowledges that the local people, or project clients as experts by emphasizing the involvement of project participants and community members in assessing the project impact—and by recognizing that ‘local people are capable of identifying and measuring their own indicators of change (Catley 1999). A well designed impact assessment can capture the real impacts of the project, be they positive or negative, intended or unintended on the lives of the project participants. In this regard, participatory impact assessment tries to find a balance between systematic methods and the richness of qualitative inquiry in assessing the impacts of any project. As Watson (2008) pointed out participatory impact assessment tries to answer three questions:

- What changes have there been since the start of the project?
- Which of these changes are attributable to the project?
- What differences have these changes made to people’s lives/participants lives?

A systematic and well designed participatory impact assessment can assist in:

- Measuring the impacts using participants’ own indicators and their own methods
- Can overcome some of the inherent weaknesses of the conventional approach to M&E
- Create an opportunity to develop a learning partnership involving the donor, the implementing partners and the participating communities and
- When the results are rigorously applied can be used as a powerful advocacy tool to influence the formulation of policy and best practices.

**Key steps in the PIA process**

The methodology is based on the notion of combining participatory approaches and some basic epidemiological or good science principles. There are eight steps in the process: Define the questions to be answered; define the geographical and time limits of the project; identify and prioritize locally-defined impact indicators; decide which methods to use and test them; decide which sampling method and sample size to use; assess project attribution; triangulate, and feedback and verify the results with the community. The key steps and the tools used are summarized in Table 6.

**Step 1 — Identifying key questions**

This is the most important and difficult part of the exercise. If you are not focused, you may attempt to answer too many questions, often producing poor quality results. Very often, one is tempted to capture as much information as possible about a project, but this has its implications on cost, data collection, analysis as well as presentation. It is better to limit the number of key questions to be answered and address them well.

If the community has participated in the planning stage and identified the impact indicators, then the assessment will focus on these indicators giving due consideration to the casual effect relationship and attribution issues. If the project is reacting and thought about impact assessment at the end (the
case in many instances), then it is important to jointly determine the impact indicators with the project participants. This should be done with all key stakeholders.

Table 6. PIA: Steps and tools

<table>
<thead>
<tr>
<th>Steps</th>
<th>Potential tools</th>
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<tbody>
<tr>
<td>1. Identifying key questions</td>
<td>Group interviews technique, Outcome mapping, Impact chain</td>
</tr>
<tr>
<td>2. Defining spatial and temporal project boundaries</td>
<td>Maps, Timelines</td>
</tr>
<tr>
<td>3. Identifying indicators of project impact</td>
<td>Group interview technique, Key informant survey</td>
</tr>
<tr>
<td>4. Deciding methods and field testing</td>
<td>Ranking and scoring: ‘Before’ and ‘After’ scoring, pair-wise ranking and matrix scoring, impact calendars, radar diagram and proportional filing, Semi structured interviews</td>
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<tr>
<td>5. Deciding a sampling methods and sample size</td>
<td>Various sampling techniques</td>
</tr>
<tr>
<td>6. Assessing project attribution</td>
<td>Simple ranking and scoring, Causal diagram with scoring of causes</td>
</tr>
<tr>
<td>7. Triangulation</td>
<td>Direct observation, Project based M&amp;E system</td>
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<tr>
<td>8. Feedback and validation</td>
<td>Effective communication methods</td>
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Step 2—Defining the boundaries of the project in space and time

This step is important to ensure that everyone understands the limits of the area in which impact is supposed to take place, and the time period being assessed. For long-term projects it is also good to identify the milestone/time dependent indicators. The timelines helps to clarify when the project started. When the project ended, when the project will be assessed, and what could be realistically expected during this frame work.

Step 3—Identifying indicators of project impact

Indicators are the variables that we are planning to measure, document and share with our stakeholders to assess the performance, efficiency, relevance and impacts of any intervention or projects. Indicators can be classified as:

- Input indicators
- Activity indicators
- Output indicators
- Progress indicators
- Performance monitoring
- Impact/outcome indicators—at different levels
- External indicators

The progress indicators usually measure the physical aspects of project implementation. They are useful in showing that project activities are taking place according to the project work plan. The performance indicators measure the effectiveness of the project in terms of the output(s) generated. These indicators may not tell us much about the impact of the project activities on the participants or community.

Impact or outcome indicators measure changes that have been realized as a result of project activities on the livelihood of the people’s lives. As stated by Catley et al. (2008) they measure the fundamental
assets, resources and feelings of the people affected by the project. Therefore impact indicators can include household measures of income and expenditure, food consumption, health, security, confidence and hope. It is important to keep in mind that measuring progress and performance is no less important than measuring impact. These data is more valuable in relating the impact to project activities.

Sometimes, proxy indicators are used to measure certain impacts such as livelihoods asset transfers. Although proxy indicators can be useful and easy to quantify, they may not go far enough to assess the actual changes in people’s lives brought about by project activities and asset transfers. A useful way to identify impact indicator is to:

- Identify the livelihoods transfers (knowledge transfers) anticipated from the project
- Think about the utilization of these assets or knowledge, then
- Identify the benefits derived by the participants’ use of the knowledge and the outputs derived from them such as food, security, income empowerment etc.
- Ask what difference the project will make to the livelihoods of the project participants.

In participatory impact monitoring, one of the key steps/features is the community-defined indicators. Communities have their own priorities, and their own way of identifying impact indicators for measuring changes. The traditional M&E system (very often derived from project log-frame) over emphasizes the indicators identified by the scientific community with very little input from the project participants. One way to collect community indicators is simply ask the project participants, what changes in their lives they expect to occur as a direct result of the project. If you are doing an ex-post impact study, where indicators are not identified earlier, then you can ask what changes have already occurred. If the project is focusing on delivering inputs and services, then ask the participants, how they benefit from the ownership or use of the resources in question. If the project is focusing on training or skill transfer, ask how the training or improved skills will benefit them. These identified benefits are the impact indicators. Expenditures on food, education, cloths, medicine, ceremonies, and investments in livestock, agricultural inputs, or income generating activities are all good livelihoods indicators of impact that can be easily measured. It is important to keep in mind:

- When identifying impact indicators, try to be specific (not general). When collecting community indicators, it is important to capture the views of different groups of people within the community.

- Simply measuring changes in livelihood impact indicators will not tell you much about impact unless you understand the reasons behind those changes. It is important to establish a casual effect relationship between the activities/outputs and the outcomes being measured. Careful attention also should be paid to attribution issues. An understanding of the livelihoods and context is therefore an important part of any impact assessment.

Step 4: Methods to measure changes/impacts

Once you have identified the key indicators, one has to decide on the methods that could be used to measure changes in these indicators. Some useful methods that can be used to measure impact or change numerically include: simple ranking and scoring; ‘before’ and ‘after’ scoring; pair wise ranking and matrix scoring, impact calendars, radar diagram and proportional filing. The practical application of all these tools involve the use of semi-structured interviews. Each of these techniques has its own advantages and disadvantages, and some methods are more appropriate for certain cultures and contexts. For example a method such as pair wise ranking can be used in situations where the literacy rate is low. A method such as scoring against nominal baseline can be useful in estimating
changes in certain indicators such as income, livestock numbers and crop yields. On the other hand, a single ranking can be a useful way of prioritizing impact indicators to get understanding of which project benefits are perceived to be of greater importance to the community members.

**Step 5: Sampling**

To ensure the reliability of the assessment and to avoid biases, often in impact assessment exercises, sampling procedures are used to identify individuals who will participate in the assessment. The sample size and the method used depends on the time and resources available for this assessment. There are three types of sampling methods which can be used for participatory impact assessment: convenient sampling (go to easily accessible villages/participants); purposive sampling (go to villages ‘typical’ of the (project area); and random sampling (every village has equal chance of being selected). Although random sampling is considered most scientific; and convenience sampling the least, each method has its strengths and weaknesses (see Table 7 for details). One practical approach often used is to deliberately select equal numbers of good, bad, and medium impact villages.

<table>
<thead>
<tr>
<th>Table 7. Sampling methods and appropriateness</th>
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<tbody>
<tr>
<td>Methods</td>
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<tr>
<td>Convenient sampling</td>
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<tr>
<td>Purposive sampling</td>
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<tr>
<td></td>
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<tr>
<td>Random sampling</td>
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There is also no magic number for the sample size. In most impact assessments the important thing is to capture the overall trend. If properly constructed, this can be done with a smaller sample as long as the sampling is done systematically and it can be representative. There may be a need to stratify the sample in order to capture the views of different groups within a project area. This stratification depends on the questions to be answered and the hypothesis that one is trying to test.

In doing the assessment using PIA approaches, it is important to make sure that the same tool is applied consistently, using the same indicators, the same number of counters and framing the question exactly the same way.

**Step 6: Assessing project attribution**

Attribution is a major issue in assessing impacts of project interventions. In a dynamic environment, changes occur naturally. In any community where a project is implemented, there may be changes that are occurring naturally—endogenous changes. Therefore, the observed changes in the selected variables may be a combination of the endogenous changes as well as the effects on the project activities and outputs. Some of the observed changes may not have anything to do with the project, and would have happened regardless of whether or not the project ever existed. The objective of assessing attribution is to ‘isolate and contextualize’ the impact of the project from the non-project factors that could have contributed to the change. There are two main approaches for assessing project attribution.
- Within a project area, assess the relative importance of project and non-project factors
- Comparison between project and non-project populations with the project area.

In the first approach, we try to identify and understand all the project and non-project factors which contributed to changes in the impact indicators. Methods such as simple ranking and scoring, or causal diagrams with scoring of causes can be used to measure the relative impacts of both project and non-project factors.

The second approach is the most ideal one if that could be employed where a control group is used for comparison. Here, the ‘intervention populations’ are compared with control populations to determine statistical differences between the two groups. There are a number of practical and ethical issues involved in using this approach. Identifying two identical populations that share the same attributes can be a challenge, and there is a high probability that the control population receive similar intervention from other sources during the same time period. This approach may increase the time and other resources required for the assessment. The control group approach also implies that decisions are made to exclude a population from an intervention.

Because of the difficulties involved in establishing the control group, in many instances, the first approach is widely used. This can be done by prioritizing, ranking or scoring the different factors that contributed to any positive or negative changes that took place in the project area. The type of attribution method used will be a judgment call in trying to balance scientific rigor with the practical realities of carrying out assessments. Irrespective of the methods used, addressing the issue of attribution is definitely a big step forward in assessing the developmental impacts of intervention.

**Step 7: Triangulation**

This involves the use of other sources of information to cross-check the results from the participatory exercise. A key source of triangulation is secondary data, which may include previous studies and reports, and external surveys done by the government, other organizations or research institutes may also provide useful data for triangulation.

Projects’ own data collected through monitoring may be another key source of secondary information. One could also use the different participatory methods to measure the same indicator and compare the results. If the results are similar, then they are more likely to be accurate. One could also observe trends and patterns from the results of different exercises, e.g. increase in production, increase in income as a result of increased production, reduction in the amount of household income spent on the purchase of cereals etc. Direct observations (before and after) can also illustrate changes as a result of intervention.

**Step 8: Feedback and validation**

This is the final step where the findings are presented to the community. This offers an opportunity for the community to verify that the findings are correct. Even at this stage, they may offer additional information to improve the findings and enhance the accuracy of the results. This may also be a good opportunity to seek input for future activities or next phase of the project.

Note: In any empirical study every effort should be made to include both objectively oriented approaches and participatory approaches. Striking a judicious balance is a challenge for practitioners.