

Annex

D

Manager

M&E staff (project or partners)

Consultants

IFAD and Cooperating Institution staff

# Methods for Monitoring and Evaluation



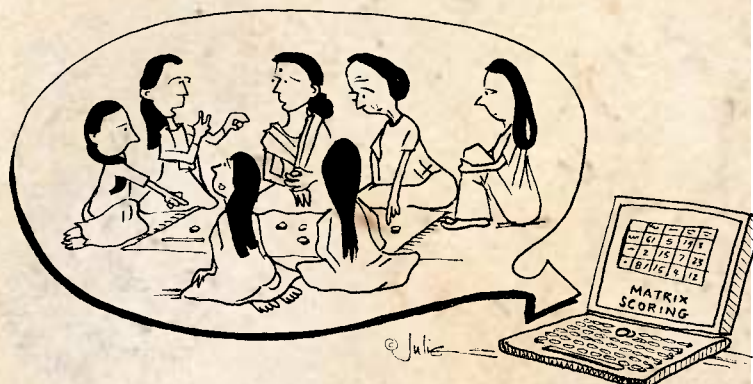
Managing for Impact in Rural Development  
**A Guide for Project M&E**

## Table of Contents of Annex D

<b>D.1 Sampling-Related Methods</b>	<b>3</b>
Method 1 Random Sampling	4
Method 2 Non-Random Sampling	5
<b>D.2 Core M&amp;E Methods</b>	<b>6</b>
Method 3 Stakeholder Analysis	6
Method 4 Documentation Review	8
Method 5 Biophysical Measurements	8
Method 6 Direct Observation	9
Method 7 Cost-Benefit Analysis (CBA)	10
Method 8 Questionnaires and Surveys	12
Method 9 Semi-Structured Interviews	14
Method 10 Case Studies	15
<b>D.3 Discussion Methods for Groups</b>	<b>17</b>
Method 11 Brainstorming	17
Method 12 Focus Groups	18
Method 13 Nominal Group Technique (Simple Ranking)	19
Method 14 Strengths, Weaknesses, Opportunities and Threats (SWOT)	20
Method 15 Dreams Realised or Visioning	21
Method 16 Drama and Role Plays	22
<b>D.4 Methods for Spatially-Distributed Information</b>	<b>23</b>
Method 17 (Sketch) Mapping	23
Method 18 Transects	26
Method 19 GIS Mapping	27
Method 20 Photographs and Video	28
<b>D.5 Methods for Time-Based Patterns of Change</b>	<b>29</b>
Method 21 Diaries	29
Method 22 Historical Trends and Timelines	30
Method 23 Seasonal Calendars	31
Method 24 Most Significant Change	32
<b>D.6 Methods for Analysing Linkages and Relationships</b>	<b>34</b>
Method 25 Rich Pictures (or Mind Maps)	34
Method 26 Impact Flow Diagram (or Cause-Effect Diagram)	34
Method 27 Institutional Linkage Diagram (or Venn/Chapati Diagram)	36
Method 28 Problem and Objectives Trees	37
Method 29 M&E Wheel (or "Spider Web")	40
Method 30 Systems (or Inputs-Outputs) Diagram	41
<b>D.7 Methods for Ranking and Prioritising</b>	<b>42</b>
Method 31 Social Mapping or Well-Being Ranking	42
Method 32 Matrix Scoring	44
Method 33 Relative Scales or Ladders	47
Method 34 Ranking and Pocket Charts	49
<b>Further Reading</b>	<b>52</b>

This Annex is useful for:

- *M&E staff* – to guide project implementers in deciding how to collect and communicate information.



This Annex summarises 34 methods you might find useful for specific M&E tasks. For ease of use, the methods have been grouped in seven categories:

1. Sampling-related methods
2. Core M&E methods
3. Discussion methods (for groups)
4. Methods for spatially-distributed information
5. Methods for time-based patterns of change
6. Methods for analysing linkages and relationships
7. Methods for ranking and prioritising.

Each method is briefly explained in terms of purpose, steps and application tips. As these methods are only brief descriptions from longer texts, please refer to the original texts for additional information (see Further Reading). Note that each method can be adapted and mixed with other methods to suit your needs. See Section 6 for more thoughts on information gathering and management.

You can also create your own methods. For instance, in Zambia, staff of a drinking water project launched an essay contest in different high schools in order to understand youth's perceptions and assessment of the project. This method ended up providing information that was not being obtained by other means. The essays revealed that, in many cases, children were being asked to help dig wells to satisfy the project's volunteer labour quota demand. This prevented them from attending school, an effect that was not intended by the project. With this information, staff were able to rethink how to organise project implementation to avoid this negative effect.

Any method can be used in two ways to understand change.

*Option 1.* It can be applied regularly, as a monitoring sequence, to gain insight into trends. This requires creating a starting point, or "baseline" of data (see Section 5.5). Subsequent applications of the method can be compared to the baseline to identify change and try to understand its causes.

*Option 2.* It can be used retrospectively to inquire about change in the project area. This option takes the current situation as the starting point and asks people to describe how the situation used to be, for example, three years ago. While it does not make use of an independently assessed baseline it does aim to compare changes over time. Because it relies on people's memory, this use is only appropriate if you do not need high levels of proven precision for the data.

## D.1 Sampling-Related Methods

A census, which is a full count, is often not feasible for gathering data from the entire population that you are interested in studying. The group may be too big or time, resources and funds too limited to carry out a census. In these cases, you need to select a sample that is as representative as possible of the full population in order to make conclusions about characteristics of the whole population. Therefore, some statistical tools are needed to determine how representative your data are, and thus how reliable the information coming out of your study is. How you choose a sample influences the quality of the final results of the M&E study. If your sampling method is biased or your sample too small, then your M&E results will be less reliable and perhaps even invalid.

If you choose sample-based M&E, three factors in particular need to be considered that affect both the methods you choose for the M&E work and the validity of your findings. (More details about such factors can be found in Casley and Kumar (1988) in Further Reading.)

- *Clarify your sampling frame.* A sampling frame is a description of the set of all possible individuals whom you could choose for your sample. To do this, you must identify a specific unit you wish to study within the population (e.g., all households in a village, certain households in a district or certain plots in a forest) or specify the unit descriptively (e.g., the boundaries of the forest to be studied).
- *Decide on an appropriate sample size.* The sample size that you choose greatly influences the validity of your findings. Contrary to popular opinion, the optimal size of your sample has little to do with the size of the population you are studying. Rather, it should be determined based on available budget and resources, the number of subgroups to be analysed, the time available and the time needed to carry it out properly, the variation within a population of the variable being tested, the desired level of confidence you would like to have that the estimate is within a given margin of the value for the population, and the maximum allowable error with which you are comfortable. This last point, sampling error, refers to the certainty that your sample represents your population and the likelihood of it not being biased. Although your data do not have to be 100% certain, you do need to make explicit how certain they are in your results. Sample size or error can be calculated through statistical formulas. To calculate an appropriate sample size, check the website of the sample size calculator (<http://ebook.stat.ucla.edu/calculators/sampsize.phtml>) or see Casley and Kumar (1988) in Further Reading.
- *Select your sampling method.* With your sample size, you can choose between two main methods for selecting a sample: random sampling and non-random sampling. The choice will depend on the type of information required. Random sampling is usually associated with quantitative data collection and analysis. It gives every individual in a population an equal chance of being selected through random sampling methods. It has more clearly defined selection procedures, uses lists (or equivalent) as its sampling frame and allows for an estimate of sampling error. Non-random sampling is less formal, is most often associated with qualitative data collection and analysis and involves a more focused and deliberate sampling within a population. Both methods carry some risks of bias, although answers may be reliable enough for your purposes. The risk of bias is a main differentiating feature between the two sampling methods. In random sampling, the risk is known and can be minimised as much as you wish – as long as the resources are available. But with non-random sampling, the risk of bias is greater and is more difficult to assess.

## Method 1 Random Sampling

### Purpose:

To produce a sample, without any prior knowledge or consideration of particular characteristics, that can be considered to be representative of the primary stakeholders being affected by a project intervention. From an M&E perspective, the sample is needed to guide the use of information-collection methods.

### How to:

1. Start by identifying, naming or numbering all the units in a population from which you want a sample (e.g., villages, houses, people, families), so that every unit has an equal chance of being chosen for the sample. This is the act of making a sampling frame.
2. From the sampling frame, choose who will actually be selected for the final sample by using one of two basic random sampling methods.
  - **Simple random sampling** involves selecting at random a group of individuals from a population, like pulling names out of a hat or using a table of random numbers to correspond to specific items on a list. A variation on this method is **systematic sampling**, in which you select a sample at predetermined intervals (for example, every third house) but this is not considered to be a pure random sample as it includes the predetermined element.

### Box D-1. Example of systematic sampling <sup>1</sup>

A common criticism of rural development projects is that they often concentrate activities in villages with easy access. The design team of an IFAD-supported project in the Ivory Coast aimed to select at least 75% of villages in the project area that should be situated more than 5 km from a paved road. Therefore the team created a sampling frame with units that included villages over the minimum distance of 5 km from a paved road.

- **Stratified random sampling** differs in that the population is first divided into different subgroups (or “strata”), based on particular predetermined characteristics. This could be, for example, age, sex, tribal group in a household survey or a specific geographical feature in an agricultural survey. Then a random sample is selected per stratum, for example, by using a table of random numbers or picking every fifth item or person.

#### Tips on use:

Random sampling is more often used in larger-scale M&E analyses than non-random sampling (see Method 2). However, random sampling is not always possible or practical if, for instance, there is not enough time to make up a complete list of the information needed. Existing census records, electoral lists, telephone books or other records should be sought out and used whenever possible – but be aware that these may not always be accurate. However, Casley and Kumar (1988) warn against a hasty decision to opt for non-random sampling simply based on resource constraints, as a non-random method may not be useful enough due to the high margin of error. They offer this rule of thumb: “If no list is available and if the creation of a list is limited only by cost constraints (i.e., not by time), it would be worthwhile to sacrifice a quarter to a third of the planned sample size in order to release funds to carry out the listing.”

Nevertheless, random sampling is not useful when dealing with a very small sample size, since it is unlikely to be representative enough and therefore not able to provide accurate conclusions about the whole population. Purposive sampling (see Method 2) can reduce this risk.

## Method 2 Non-Random Sampling

#### Purpose:

To make an explicit choice based on your own judgement about exactly whom to include in your sample. When random sampling is not possible, then you can choose this sampling method for studying how primary stakeholders are affected by a project intervention. You might, alternatively, want a very specific perspective so you purposefully seek certain people or groups. As with Method 1, from an M&E perspective, the sample is needed to guide the use of information-collection methods.

#### How to:

There are two main non-random sampling methods: purposive sampling (also known as purposeful, convenience or judgmental sampling) and quota sampling.

**i. Purposive sampling** means selecting a sample based on one or more predetermined characteristics. The aim is to obtain information about those members of the population exhibiting such characteristics. This method is useful for **describing** a phenomenon rather than in making statistically based inferences about its incidence in the population.

For example, you might want to speak only with older people to obtain a historical perspective on agricultural practices in an area, so your purposive sample would aim to create a list of older people on whom to focus your questions. See Box D-2 for an idea on making a listing of such “key informants”.

A variation on purposive sampling is **cluster sampling**. A small and manageable number of individuals or units are selected from groups or clusters, rather than on an individual basis. For example, first select a certain number of households at random. Then add other households to the sample by going to the nearest houses to those chosen, continuing until the desired sample size is reached.

<sup>1</sup> IFAD, ANGOC and IIRR 2001, see Further Reading.

### Box D-2. Using key informants within purposive sampling

Working with key informants helps when you are seeking in-depth information about a specialised topic (having specific skills, knowledge or roles of interest) in the project area. For instance, this can be used to carry out case studies (Method 10) or focus groups (Method 12).

1. Make a list of potential key informants who can answer the specific M&E question you have in mind. These include:
  - trained experts active in the project area (e.g., doctors, economists, credit experts and agricultural scientists);
  - government officials, such as extension staff or health workers;
  - local leaders, such as tribal chiefs;
  - knowledgeable persons, such as shopkeepers and market traders.
2. Then select the informants most relevant to the question at hand. Add more informants should they come up during the interviews.

**ii. Quota sampling** is useful for making comparisons and for isolating one particular aspect to be monitored or evaluated. It involves the selection of a fixed and predetermined number of units that possess a particular characteristic, which are then compared to an equal number of units that are similar but lacking in that particular characteristic of interest. For example, for a study on well-being you might want to compare a target group of villages that has strong self-promotional skills with other villages perceived to be weak in such skills. See Box D-3 below.

### Box D-3. Quota sampling example<sup>2</sup>

A sample was needed to evaluate the impact on well-being of a project in Burkina-Faso. The programme covered 14 villages that were divided into two groups according to the villages' perceptions of their own self-promotional abilities:

- A. Villages strong in self-promotion: self-sufficiency in household food requirements, a spirit of collective initiative, social cohesion, access to innovations, functional local organisation, etc.
- B. Villages weak in self-promotion: absence of human and financial resource mobilisation, tendency to focus on individual interests and work, lack of energy and community consensus (dependency attitude), little openness to innovations and progress, lack of community activities, etc.

Based on this information, all the villages were ranked and the final sample came to a quota of four villages – the two strongest and two weakest villages.

#### Tips on use:

Non-random sampling is more often used in small-scale monitoring or evaluation exercises and is therefore usually quicker. However, non-random sampling may not adequately represent the range of answers being sought as it involves a predetermined, and therefore potentially biased, source of information. This is because you cannot provide an estimate on sampling error. Of these options, cluster sampling can be cheaper and is easier to implement with minimal training.

## D2 Core M&E Methods

This set of eight methods belong to the standard core of methods most often used for measuring changes. These methods are considered so basic to good M&E that you might well find all of them in your project's information-gathering plan.

### Method 3 Stakeholder Analysis

#### Purpose:

Stakeholder analysis in the context of M&E helps you define whom to try to involve when designing the M&E system and in which way, and it allows you to find out whose information needs must be considered. It can also be used to develop an appropriate sample for data collection (see Methods 1 and 2). This method is useful at different moments during the project:

<sup>2</sup> Gosling, L. with Edwards, M. 1995. *Toolkits: A Practical Guide to Assessment, Monitoring, Review and Evaluation*. Save the Children Development Manual 5. London: Save the Children-UK.

- It can help you to identify which stakeholders to involve in (re-)designing a project and its M&E system, and to assess their interests and how these relate to the project and to M&E.
- You may want to use it during a specific phase or for a specific project component to analyse stakeholder relations, including cooperation and conflicts and considering external factors affecting stakeholders and their activities. It can assist you in making an appropriate selection of the stakeholders most central to the task/issue at hand.
- It can help provide a foundation and strategy for participation throughout the project, thereby making it easier for stakeholders to learn from each other.

**How to:**

1. Clarify the main purpose of the stakeholder analysis and agree on the criteria for assessing the stakeholders. As the method described in this annex focuses on using stakeholder analysis for M&E, your main purpose could be “to make sure we are including all key players in developing the project’s M&E system”. You might also want to do a stakeholder analysis for a specific M&E task, for example, participating in the annual project review process. Then your purpose would be “to make sure we are including the key opinions in our annual project review”.
2. Then list which criteria you will use to prioritise whom to involve (see Box D-4). The types of criteria for selecting stakeholders could be: “supposed to be benefiting from the project”, “critical role in ensuring success”, “legally required to participate”, “have specific knowledge on M&E processes”, etc.

*Box D-4. Possible criteria for inviting stakeholders to participate in developing the M&E system*

- due to their formal role in the project
- because they represent a particular community or an important sub-group of the target population
- because they provide essential skills and/or information to the process
- because they fund the process
- to ensure consistency of policy
- to ensure policy implementation
- because they have legal rights in the project area
- because they have power and/or money
- because they hold a monopoly that is fundamental to ensuring success
- because they invest in local development
- because they are primary residents in the project area

3. List all the people and organisations you can think of that might fit your criteria. The obvious groups of stakeholders likely to be involved in an IFAD-supported project include: key individuals and sub-groups from the target populations, local leaders and key people from implementing partners such as non-governmental organisations (NGOs) and community-based organisations (CBOs), government staff from various agencies and the local administration, local consultants, local businesses and educational/research institutes. This list needs to be revisited several times as you design the M&E system to ensure that all key groups and people are included and updated. Various methods can be used to identify stakeholders, such as brainstorming (Method 11), interviews with key informants (see Box D-2 and Method 9) or focus groups (Method 12). Cross check the list by asking key people to look critically at the initial list of stakeholders you have produced.

4. Then classify the stakeholders on the basis of the criteria. For this, you will need to make a stakeholder matrix with the stakeholders along one axis and the criteria along the other. Prioritise which stakeholders to involve in developing the M&E system.

5. Finally reach agreement on how best to involve people. This is done by asking the different people/groups themselves how they think they can be optimally involved. Remember that

participation does not mean involving everybody in all decisions at all times. It means thinking carefully about how to ensure that different interests can best be represented in different phases and forums of the M&E process.

**Tips on use:**

Stakeholder analysis is an essential method to use in order to properly design whom to involve in which steps of the M&E process. Such a selection must be done together with different people in order to lessen the risks of having a biased selection. This is a process that continually evolves and must be repeated throughout the life of the project in order to be sure that (new) potentially important stakeholders are not missed.

## Method 4 Documentation Review

**Purpose:**

To understand the historical evolution and performance of a project/organisation through its documentation, whether in written, electronic, photographic or video form. From an M&E perspective, this method can provide baseline information on a project area or a particular indicator. It also can provide a good background to activities today to help explain whether changes are occurring and why or why not.

**How to:**

1. Make sure you are clear about the questions you wish to answer and what (type of) information you need for this. For example, “What types of income generation have been created?”
2. List all possible sources of existing information (project documentation, government records, organisation reports or geographic document records, university studies, etc.).
3. Prioritise those that are most likely to provide useful information in a cost- and time-efficient manner. This is important, especially in situations where much documentation exists. In such cases, do not try to read everything – focus on the main points.
4. Collect this documentation and check its reliability. Note contradictory evidence. Analyse it in terms of the question you were trying to answer.
5. Identify which information gaps you still have or where contradictory evidence needs to be clarified. Select another collection method, such as questionnaires (Method 8) or interviews (Method 9), to fill that gap.

**Tips on use:**

This may be a good starting point for M&E and can even serve as a substitute for the baseline (see 5.5). Such an initial review of the literature can also help you identify key issues needing to be addressed in a further M&E analysis.

However, you are limited by what documentation is available and accessible, how it has been presented and by whom (possibility of biases, etc.), how it has been stored and all of the issues of quality coming from these restrictions. In this way, this method can provide an opportunity to assess an organisation’s or ministry’s internal project information collection and storage system.

## Method 5 Biophysical Measurements

**Purpose:**

To measure physical changes over time related to any indicator (e.g., health, nutrition, agriculture, credit) using any accepted measurement unit and procedure. From an M&E perspective, this can provide reliable, statistically verifiable data that form an important basis for measuring change and impact.



**How to:**

1. Start by ensuring you are completely clear about what indicator or piece of data is to be monitored.
2. Agree on what the required degree of accuracy is. If a high level of scientific accuracy is needed, then expertise and an appropriate method must be sought. Counting, weighing or other measurements will depend on skills as well as type of equipment available (e.g., wooden frame, quadrats, tape measures, rulers, scales).
3. The suggested method and how it is used will then need to be adjusted to local conditions, skills and resources. Alternatively, a method can be developed together with primary stakeholders, that is mutually acceptable and is a compromise between a higher level of local appropriateness and decreased scientific accuracy.
4. The data need to be recorded in tables or diagrams, with words or numbers. These can then be used as a framework to follow in order to make comparisons over time.
5. Direct measurements can be an important part of a series of methods as described in this Annex. For example, establishing the range of impacts expected from a project with an impact flow diagram (Method 26) and then selecting a more precise measurement method to monitor a chosen impact.

**Box D-5. Examples of specific direct measurement methods**

*Health/Nutrition:* measuring the upper-arm circumference of children under five, degree of stunting in boys and girls under five, attendance at local clinics, etc.

*Agriculture:* annual yield/production, amount of fencing/terracing constructed, seed or fertiliser expenditures, livestock numbers, number of bore wells constructed, etc.

*Natural resource management:* kilometres of contour bunds, presence of rare species per unit area, survival rate of seedlings planted, etc.

*Credit:* numbers of loans repaid, increasing numbers of savings and credit/self-help groups, etc

**Tips on use:**

A simple measurement method that provides good estimates may well be better than a precise, more complex method that is incorrectly applied and leads to wrong data. As indicated above, the degree of accuracy very much depends on the method used. Some methods are more expensive and time-consuming than others. As direct measurement is time consuming, it is critical to be absolutely clear about how you are going to use the information before embarking on a measurement plan.

**Method 6 Direct Observation****Purpose:**

To obtain useful and timely information by observing what people do, to help make decisions on improving a project's performance or for generating insights and findings that can serve as hypotheses for more focused studies. From an M&E perspective, this method is critical to complement collected data, can be used to understand the context in which information is collected and can help explain results.

**How to:**

1. Agree on a clear conceptual framework, as well as guidelines for what needs to be observed and the information required.
2. Choose an appropriate observer or group of observers.
  - Community members and project staff who live and work full-time in the project area (e.g., "key informants", see Box D-2). These observers would need to be trained in observational skills.

- People outside the community who have an opportunity to engage in structured observation during field visits. Note that outsiders may need much more time to know what is significant. On the other hand, they sometimes notice significant issues that local people no longer see or take for granted.
3. Collect and record data as agreed. Organise moments in which to discuss the recorded observations, not only with staff from the project and from implementing partners but perhaps also with primary stakeholders.

#### Box D-6. Example of using direct observation

Direct observation was used to evaluate a drinking water project in Zambia. Training sessions on hygiene undertaken by project staff and attended by women and children in the villages were observed. This study revealed that project staff were using too academic terms and language in the hygiene training, making the sessions useless as they were not understood by villagers. With this information, the training sessions were modified to become more locally appropriate.

#### Tips on use:

People often forget this simplest of all methods – observation. Everyone observes automatically. But you can make observation more effective by viewing it as a valid method and structuring its use. Much can be learned by watching what people actually do. Useful information and new insights can often be gained from such observation that would otherwise not be obtained. If done well, it can permit a deeper understanding of relationships within communities but also between a community and other organisations. If it is done well, direct observation can help build trust and rapport with local people and project staff. This method is also known as “participant observation” and is a common research method for social issues and processes.

Direct observation is useful for validation in monitoring as it can be used to cross check responses received by other methods.

There is always the danger of introducing information biases due to: biases in the observer, the way the observer influences the observed or the observed situation hampering the objectivity of the observer. These biases can never be eliminated entirely. Therefore, direct observation as a systematic M&E method should only complement other methods. Asking several people to undertake observations in the same manner can help confirm observations or identify differences and so increase the quality of the data.

## Method 7 Cost-Benefit Analysis (CBA)<sup>3</sup>

#### Purpose:

To provide a format (also known as an accounting framework) to enumerate the range of benefits and costs surrounding a decision in order to help weed out costly activities that yield few benefits. From an M&E perspective, a standard use of this method is to evaluate a project by comparing actual final measurements of the costs and benefits against those proposed in the design of the project. Sometimes comparisons can be made with other projects that are delivering similar services and products. Another use is to assess costs and benefits of elements of a project, such as specific activities or indicators.

<sup>3</sup> This Guide does not enter into the mathematical details of CBA. Please refer to these texts for more detail: Gittinger, J.P. 1982. *Economic Analysis of Agricultural Projects*. Baltimore and London: Johns Hopkins University Press; Kuyvenhoven, A. and Mennes, L.B.M. 1985. *Guidelines for Project Appraisal: An introduction to the principles of financial, economic and social cost-benefit analysis for developing countries*. The Hague: Government Printing Office. A more participatory and project-based approach can be found in: James, A.J. 2001. “Building Participation into Benefit- Cost Analysis”. Pages 255-262. In: IFAD, ANGOC and IIRR. 2001 (see Further Reading).

**How to:**

1. Enlist the help of a trained economist or expert in CBA, as this method entails the use of various formulas for calculating costs and benefits as well as for discounting, marginal-return analysis and aggregation of the figures.
2. List all the project activities (potential and actual).
3. Calculate all possible project costs over the project period (e.g., labour, use of raw materials, transport). The CBA only includes costs and benefits that you define. So be clear about whether you want to include social and environmental costs and benefits. These will require more effort but will also make the CBA more comprehensive.
4. For each project activity, estimate the benefits, which may continue to occur (well) beyond the project period (e.g., 10 to 30 years). This step is more difficult than Step 3 and will require some research into and help from specific statistical formulas.

***Option 1. You are including aggregation in your CBA***

- a. Aggregate project costs and benefits through the discounting formula, according to the point of interest. This is easiest through a computerised spreadsheet.
- b. Calculate annual net benefits by subtracting costs from benefits for each year.
- c. Calculate the IRR – interest received on an investment consisting of costs (negative values) and benefits (positive values) – occurring at regular periods (in this case, annually) of the series of annual net benefits. If you are using a spreadsheet programme, it will include IRR as an automatic function.
- d. Do a sensitivity analysis by increasing costs and/or benefits by a certain percentage (e.g., 10% or 20%) and check the impact on the IRR. If the IRR is more than the market rate of return even when costs are increased and benefits are decreased, the project is usually considered to be economically robust.

***Option 2. You are not including aggregation in your CBA***

- a. Decide whether to estimate costs and benefits for individual project activities, in order to compare and choose between alternative options.
- b. Calculate the (potential) marginal rate of return from each activity option, by estimating the potential costs and benefits associated with alternative options for the same activity.
- c. Add the calculations from the previous step to the social, institutional and technical features of the activity option, to permit a more informed choice.
- d. Present these findings to key stakeholders for analysis and discussion, to assist in decision making.

**Tips on use:**

A CBA can be carried out at the design stage of a project to help make decisions on how the project should look and on what activities to include. The various benefits and costs can be monitored over time in order to measure changes.

CBA has several advantages – but only if undertaken properly. It provides a comprehensive framework to link project costs and benefits systematically. It helps project stakeholders think about project details and gives a clear overview of how a project's cash flows work.

However, CBA is also much criticised particularly for making it difficult to account for all potential costs and benefits in a fair and equitable manner. Certain costs and benefits are very difficult to measure, such as intangible, non-financial social and environmental costs (i.e., opportunity costs). For example, how can you adequately measure the potential long-term health and environmental effects of using genetically modified seed varieties within a farming system, or the future price of tomatoes on the world market? Also, the items included in a CBA are biased according to who carries the analysis out, and therefore a CBA's quality and coverage will vary greatly. Furthermore, there is a bias both against unknown future effects and against projects in which benefits occur later in time.

Due to its complexity, CBA is usually carried out only by project designers and economists, without engaging other (primary) stakeholders. It can be made more participatory by including stakeholders in findings analysis. Different options can be presented to allow for a wider discussion on their potential costs and benefits. Participation is more obviously included in Option 1 above.<sup>4</sup>

The mathematical complexity of the method requires CBA to be undertaken with trained economists and with appropriate computer spreadsheet programmes.

## Method 8 Questionnaires and Surveys

### **Purpose:**

To gain data from a large number of people in a structured way according to specific questions, often in ways that allow for statistical analysis. From an M&E perspective, questionnaires and surveys form the basis of many monitoring and evaluation studies as they allow for focused data collection about specific performance questions or indicators from a sample.

### **How to:**

1. Agree on the purpose and information needs of the questions.
2. Decide whether the information needs require a questionnaire or survey format. The terms questionnaire and survey are often used interchangeably but can be distinguished as follows:
  - A questionnaire is a form with questions used to gather information from respondents.
  - A survey is a more general term that might involve a long questionnaire or even one or two simple questions to be answered. It includes surveys where researchers make their own observations, face to face or through telephone interviews or large-scale direct mail efforts.

Questionnaires and surveys can range from being very simple to quite complex. These can follow a very specific and structured set of closed questions (yes/no or multiple choice questions) or they can also include open-ended questions, such as in semi-structured interviews (see Method 9). Fixed-choice or fixed-response questionnaires are good for gathering data that needs to be analysed statistically. Open-ended or free-response questions can be particularly good for determining people's feelings and attitudes.

3. Ensure that questioning is focused and well formulated or it will not be useful (see Table D-1 below). If necessary, call in appropriate expertise to make sure that the questions have been worded correctly and can be analysed properly. The questions can be formulated to answer a hypothesis that you wish to prove or disprove (e.g., "Does a woman's level of education affect the health of her children?") or to find out the extent of a specific problem.

Table D-1. Examples of closed versus open questions <sup>5</sup>

Closed Questions (people can only answer "Yes" or "No", which gives little useful information)	Open and Focused Questions (using a series of questions provides more useful and precise information)
Do you grow enough food to satisfy your family's needs?	What staple food crops do you grow? Do you have enough food to feed your family today/ this week? How many months of the year do you have a shortage of food in the house? How do you cover any shortfall in home production?
How often do you attend the maternal child health clinic with your children?	Do you have children under five years old? How often is the clinic conducted for your village? When was the last clinic visit? What was the purpose of the visit? Did you take your under-five child(ren) to this clinic? Why or why not? What did you think of your visit to the clinic?
Have you understood and adopted the recommendations made by the agricultural extension worker in your area?	Have you met the agricultural extension worker? What did he/she explain about ways to grow rice? What did you think of his/her explanations? Were they clear, useful and relevant? Have you tried them? If so, what did you think of them? If not, why not? How do you intend to grow rice in the next seasons?

4. Agree on who should be questioned and how many people should be included in the sample (see Methods 1 and 2). Also decide on the most appropriate manner of questioning (a form that is mailed or dropped off to be filled in independently, face-to-face individual interviews, etc.). If interviewing directly, train the interviewers so you can be sure that they understand the purpose and have the skills to ask questions in ways that limit biases.

5. Pre-test the interview questions to ensure that they are appropriate, accurate enough and give you the type of information you need.

6. Collect and analyse the information.

#### Tips on use:

Questionnaires and surveys can provide precise answers to carefully defined questions. The ease of analysing questionnaires and surveys will vary with the number of questions and the size of the sample. Often projects make the sample too big and ask too many questions. Then analysis becomes tedious, takes much time and loses its usefulness if not analysed in time for decision making. Good interviewing skills are important and come through training. If the style is very structured and inflexible, then this may inhibit openness. Long questionnaires and surveys are also tedious for the respondent.

Questionnaires and surveys in which answers must fit a certain set of options or format will also fail to pick up on deviating answers and opinions. So be aware that you might be missing out on important details and variations to the questions.

Questionnaires and surveys can be used with individuals or even used in group situations. However, questions in group situations may need to focus less on private issues (e.g., not on contraceptive practices or financial loans) and more on group opinions (e.g., "What are the advantages and disadvantages of different types of water wells?"). Group-based questionnaires and surveys work best in groups where members are used to working together and can trust each other, as well as the interviewer.

<sup>5</sup> Adapted from Broughton, B. and Hampshire, J. 1997. *Bridging the Gap: A guide to monitoring and evaluating development projects*. Canberra: Australian Council for Overseas Aid.

Table D-2. Example of a mini-survey<sup>6</sup>

	Adopted Low-Grazing System	Used Clinic in Last Year	All Children Attend School
Household A1	X		X
Household A2	X	X	
Household A3	X	X	
Household B1		X	
Household B2		X	
Household B3	X		X
Household B4		X	X
Household C1	X		
Household C2			X
Household D1	X		
Household D2		X	
Household D3		X	

## Method 9 Semi-Structured Interviews

### Purpose:

To gain information face to face from an individual or small group, using a series of broad questions to guide the conversations, but allowing for new questions to arise as a result of the discussion. From an M&E perspective, semi-structured interviews are critical for developing an in-depth understanding of qualitative issues in particular. As the interviews are open-ended (though guided by checklists), they are helpful for assessing, for example, unintended impacts (positive and negative), opinions about the relevance and quality of services and products, etc.

### How to:

1. Define the purpose and information needs of the inquiry and formulate an interview checklist of open-ended questions. The questions should be such that interviewees can express opinions through discussion. A logical sequence to the questions will help the discussion flow. See Table D-1 in Method 8 for ideas on how to word questions in a useful manner.
2. Agree on who should be interviewed, how many are required within the sample and whether interviews should be with individuals or in a group.
3. Gather and train a team of people to ensure that they understand the purpose and develop the proper skills (how to encourage discussion, taking accurate and useful notes, etc.). Semi-structured interviews are best conducted by two people, with one performing the interview and the other taking detailed notes. But this may not be feasible. You can try tape-recording the interviews, but this can be very inhibiting and transcribing afterwards is extremely time consuming.
4. Pre-test the interview questions to ensure that they are appropriate and accurate enough, and that the answers permit useful analysis.
5. If you conduct group interviews with more than one interviewer, it may be useful to follow the interview with a short internal discussion on the dynamics of the interview, assess the validity of the answers and decide if the interview needs to be adapted.

6. Analyse the information coming from the interviews. See Box D-7 for tips on how to structure open-ended information for easy analysis.

*Box D-7. How to synthesise and analyse open-response information from semi-structured interviews (or other methods)*<sup>7</sup>

- a) Produce a short summary of what each person says, including the main points.
- b) Look over the responses. Once you have looked at about 25%, note the points most frequently mentioned. Then read all the responses and record how many interviewees have responded to each of these main points. Alternatively, divide the responses into those "for" or "against" a certain issue or divide them to show various degrees of enthusiasm about an issue.
- c) Take out any important quotes to emphasise certain points.
- d) Ask other people also to look through the responses to prevent your own biases taking over the way you interpret responses.
- e) Number each respondent.
- f) Following the list of points you developed in step b above, number the main points. Through this numbered coding system, prioritise, summarise and then analyse the information.

**Tips on use:**

Semi-structured interviews can easily be used in combination with another method. For example, you might be walking a transect (Method 18) with farmers with whom you are having a semi-structured interview. Many of the visual group methods work best if conducted as a semi-structured interview. Semi-structured interviews can be a relaxed way to obtain insights not possible from structured questionnaires. Interesting, unforeseen topics may also emerge in this manner. However, such information may not be sufficiently precise to allow for statistically analysis. For this, use a questionnaire (see Method 8).

Open-ended information is also more difficult and time-consuming to synthesise well enough to obtain clear results. It can be difficult to keep interviews focused, making different interviews difficult to compare properly. Accurate note-taking is particularly important to make interpretation possible.

Take the time and money to train people to conduct a semi-structured interview. Training needs to address team preparation, interview context, sensitive listening, sensitive questioning, judging responses, recording the interview and self-critical review.

Group interviews require more attention to details, such as using simple language and avoiding technical jargon or expressions to be certain that the least informed person in the group understands the questions. Consider beforehand what might be politically or culturally sensitive as controversial issues can raise strong emotions leading to conflicts within the group.

## Method 10 Case Studies

**Purpose:**

To document the life story or sequence of events over time related to a person, location, household or organisation in order to obtain insight into a project's impact – for example, how people deal with change and why change occurs in specific ways – and to learn about people's experiences, dreams and obstacles for future planning. From an M&E perspective, case studies add life to what might otherwise be data without a human face and they allow for an in-depth understanding of the context and human factors behind general or summarised data that may be collected through other means.

**How to:**

1. Define the purpose and precise information needs of the case study.
2. Decide how you are going to select the individuals, households or organisations about which you will do the case studies. Other methods can help with this, for example, social mapping (see Method 31 below) to find an appropriate selection of case study households.

<sup>7</sup> Modified from Feuerstein 1986, see Further Reading.

3. Decide how you will obtain the information. If you are doing a household case study, you might wish to interview several household members and then form one study of their answers, in which you highlight similarities and differences. If you want to write a case study of an organisation, think which people you will need to interview to obtain a good overview. If you are developing a case study of a location, then you might need not only to interview people but also gather additional biophysical information.
4. Develop the question checklist that will guide the information collection. Case studies involve a written (or filmed, see Method 20 below) account of observations and answers. Attention must be paid to choosing a good interviewer/recorder, whether a person external to or within the community. In more participatory processes, the study is carried out by (a group of) individuals on themselves or each other, and perhaps with a control group for comparison.
5. Repeat the discussions with enough frequency to allow an up-to-date picture of changing conditions. The frequency will depend on the rate of change of the issues in which you are interested. Aspects that change quickly might need more frequent follow-up than issues with slow rates of change.

**Tips on use:**

The strength of this method is that you obtain much detail on a specific topic. The need for a focused case study can arise from a general survey in which a particular issue emerges as needing more in-depth elaboration. Case studies can provide interesting perspectives that you can only gain through a closer look at the overall situation (or life story) of a person, household, etc.

Case studies can provide much important background and human context for data that are generated by other methods. A cross-case study analysis can be highly valuable, particularly if it relates to broader policy questions of major interest. A case study is particularly useful in complex situations where many variables interrelate and where outcomes and impact are liable to vary across different populations.

However, case studies are generally not considered representative. For this reason, it is good to use case studies in combination with methods involving larger samples, such as surveys or questionnaires.

A variation on this method is to use the traditional form of story-telling as an entertaining way to gain some understanding of how people deal with issues or crises. It is often an important part of village life in communicating ideas and community values. However, since a story is often a metaphor and open-ended, it needs careful thought to be useful. As with other methods, the information must be carefully recorded.

Box D-8 provides one example from a booklet of case studies of various primary stakeholders participating in a project in Ghana. Offset by colourful photographs, these case studies were able to provide an attractive way of bringing human detail to an interim evaluation report.



*Box D-8. Example of a short case study used to profile primary stakeholders in the Ghanaian Rural Enterprises Project's Interim Evaluation (2000)*

Profile on Hilda Ayensu – A client who has added another enterprise to an existing one

Hilda was born in 1966 in the Volta Region of Ghana. She was the seventh out of eight children. Her father was in the Ghana police service, which meant they were transferred several times, allowing Hilda to pick up several Ghanaian languages.

When she married, her husband encouraged her to take a vocational course, and she decided to study dress-making. After a three-year course, she set up a workshop, her elder sister giving her the initial capital for the enterprise. She has already trained five apprentices.

Between April and August, however, dress-making is not a profitable business and Hilda found it difficult to manage the house financially. She decided to participate in the Rural Enterprises Project's one-week course in making soap and pomade. With the financial assistance of her husband, together with her own savings, she started a soap-making business.

Hilda makes a profit margin of GHC 200,000 (USD 1 = 7100GHC in Sept. 2001) per week and, from the profit, has been able to construct a big shed where she makes the soap. Her husband, a trader in food and household goods, has decided to stop his trading activity and concentrate on soap production. Hilda believes that the project should organise an advanced course for them to improve upon their skills instead of solely training new members who will saturate the market.

## D3 Discussion Methods for Groups

Much M&E, particularly in participatory projects, can be undertaken with group-based discussions. Six basic methods to encourage discussion are presented below but there are many more. For example, many of the methods in sections D4 to D7 are also excellent for group contexts.

Don't forget the obvious discussion techniques. One of the most common ways to encourage discussion and organise ideas is with cards. You can use cards when you are brainstorming (see Method 11), working in focus groups (Method 12) or as part of other methods, such as SWOT (Method 14). After being clear about the question or topic, ask participants, either individually or in small groups of three or four, to write each idea or piece of information on one card ("one idea, one card"). The cards are pinned to the board or spread on the ground. First remove all duplicates. The group then clusters the remaining cards together into core themes. Discussion can now focus on each cluster.

### Method 11 Brainstorming

**Purpose:**

To gain many ideas quickly from a group without becoming caught up in detailed discussion. It encourages people to think critically and creatively, rather than simply generating a list of options, answers or interests. From an M&E perspective, this method is often a first step in a discussion that is then followed by other methods. For example, brainstorming is useful when starting a matrix scoring exercise (see Method 32), an impact flow diagram (Method 26) or when starting to develop a stakeholder analysis (Method 3).

**How to:**

1. Begin by asking the group to think of as many ideas as they can about the topic in question. You can give them several minutes for this.
2. Go around the group asking each person to briefly state his/her idea. The ideas can be captured using rich pictures (Method 25) or nominal group technique (Method 13), using symbols or words. Everybody's ideas should be treated equally at this stage. Do not let people start debating each other's ideas.

3. Once all of the ideas have been noted somewhere visible to everyone (e.g., on a flip chart or chalkboard), then there can be some analysis.

4. The emerging issues, topics and questions can later be grouped, sorted and prioritised.

**Tips on use:**

Note that this method does not, on its own, suffice as a data gathering or analysis method.

The method can work with small or larger groups and can take as little as five minutes, depending on the subject, detail needed and number of people. A brainstorming session should not take very long, as it really is only meant to get out ideas that can be discussed in detail later.

People find it very difficult not to comment or evaluate when ideas are generated in a brainstorm. Set a rule at the beginning that all judgements made during the brainstorm will be ruled out until a later discussion. As with most group discussion methods, some participants may dominate. To avoid this problem, you can distribute cards to all individuals on which they brainstorm their thoughts or ask them to brainstorm in sub-groups (also see nominal group technique, Method 13).

This method is commonly used in combination with other methods, for example, to start a focus group session (Method 12).

## Method 12 Focus Groups

**Purpose:**

To use group discussion to collect general information, clarify details or gather opinions about an issue from a small group of selected people who represent different viewpoints. It can also be used to build consensus. For M&E, focus groups are good for assessing opinions of change, assessing the quality of project services or service providers, and identifying areas of improvement.

**How to:**

1. Determine the participants (four to eight people is ideal). Depending on your purpose, you can work with a homogenous or heterogeneous group. Alternatively, use a number of focus groups, each one fairly homogeneous, but the groups being different from each other. This enables interesting comparisons.
2. Present the group with a broad question (e.g., "What impact do you think a particular intervention has had in achieving sustainable land use?").
3. Discuss this question for the time period agreed upon beforehand, one or two hours maximum. There should be minimal intervention by the facilitator other than to make sure that everybody has a say. Perhaps you might need to repeat the question using different words from time to time or to probe if something is not clear.
4. Take detailed notes of the discussion. Focus groups are best if facilitated in pairs - one person to facilitate the discussion and the other for note-taking. You can also record the discussion but this will have the usual problems of time-consuming transcription and inhibiting the group.
5. One way to be sure that the information collected is reliable is to keep conducting different focus group sessions until the data becomes repetitious.

**Tips on use:**

If facilitated well, this method can bring out detailed information. It generally stimulates rich responses and also provides a valuable opportunity to observe discussions and to gain insights into behaviours, attitudes, language and feelings.

However, facilitation of a focus group requires considerable skill – both in moderating the group and in adequately recording the responses. Group dynamics, due to individuals being too shy, dominating, disruptive, etc. can hamper the discussion.

This method can be used to obtain a consensus view. However, a small group of people cannot represent all views held by, for example, an organisation or community. On the other hand, if the group is not homogeneous enough, there can be great disagreement. So think carefully about the composition of the group.

This method can generate focused insights more quickly and generally more cheaply than through a series of key informants or formal social surveys.

## Method 13 Nominal Group Technique (Simple Ranking)

### **Purpose:**

To generate ideas and to enable a group to come to consensus in developing a ranked list of problems, issues or actions. A variant on this method is to encourage people to generate possible solutions to a given problem. From an M&E perspective, like brainstorming (Method 11), it supports other methods. It can help, for example, to generate a list of priority performance questions or indicators, to prioritise stakeholders during a stakeholder analysis (Method 3) and to follow up on impact flow diagrams to prioritise impacts (Method 26).

### **How to:**

1. Develop a list of the problems, issues or actions that need to be ranked. Express each as clearly as possible to avoid confusion.
2. Each person independently ranks the statements onto a set of cards according to his/her view of the priorities. The highest number (if there are six statements the highest number will be six) can be given to their highest ranked statement and the next highest number to their next highest priority and so on through the list.
3. The cards of rankings are then gathered and tallied on the master sheet.
4. The total scores for each statement will enable them to be put in order of importance.

### **Variation**

- V1. Every member of the group writes his/her ideas down as a word or phrase and then shares them one by one with the group.
- V2. Each idea is labelled with a symbol or letter to make ranking of solutions easier. Try to discourage discussion up until this point so that shyer members can also contribute.
- V3. Once all of the ideas are up on the board or flipchart, clarify, discuss and rank them as per the steps 1-4 above.

### **Tips on use:**

This method can be used with small or large groups and can take from 15 minutes to an hour, depending on the size of the group and how much debate there is over the initial statements.

The final outcome is a set of independent judgements made in a non-threatening, private way that will allow people to generate a group judgement without social pressure to conform.

Nominal groups (groups “in name only”) brings people together in a way that generates ideas more effectively and creatively than when people interact to discuss, brainstorm, and exchange information.

## Method 14 Strengths, Weaknesses, Opportunities and Threats (SWOT)

### Purpose:

To identify the strengths, weaknesses, opportunities and threats in relation to a project or group, and how such an assessment will change over time. From an M&E perspective, this method is useful when qualitatively assessing, for example, the services provided by the project, relationships between project stakeholders and the organisations of the implementing partners, local groups and the project team itself.

### How to:

1. Referring to Box D-9, the group defines, discusses and records as many factors as possible for each heading. Emphasise that strengths and weaknesses refer to internal aspects of the group, project site or activity. Opportunities and threats can be looked at in terms of internal or external factors affecting them.

### Box D-9. What are strengths, weaknesses, opportunities and threats?

<b>Strengths</b>	Those things that are working well in a project or situation. The aspects people are proud to talk about.
<b>Weaknesses</b>	Those things that have not worked so well.
<b>Opportunities</b>	Ideas on how to overcome weaknesses and build on strengths.
<b>Threats</b>	The things that constrain or threaten the range of opportunities for change.

2. Alternatively, different sub-groups, for example during a workshop or in a community, can undertake a SWOT on their own. Comparing the different SWOTs can lead to a good discussion about the differences and similarities of experiences and possibilities.

3. Based on this overview, discuss what actions are needed (see Box D-10).

### Box D-10. SWOT window showing analysis of a mangrove reforestation project, with a resultant list of actions below<sup>9</sup>

<b>Strengths</b> <ul style="list-style-type: none"> <li>We have a youth group that is willing to work on the replanting.</li> <li>Rico has plenty of bamboo off-cuts that could be used as stakes.</li> </ul>	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>We do not know how to do the transplantation.</li> <li>We have no money for the project.</li> <li>Most community members are more interested in their own activities.</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>We do not need to buy propagules because we can collect them for free.</li> <li>We have the abandoned fish pond, which we could use for the project.</li> <li>The new mayor supports environmental projects.</li> <li>The university has people who know about mangrove reforestation.</li> <li>An NGO is providing livelihood assistance in the area.</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>Fish-pond operators want to clear more of the mangroves.</li> <li>Some community members cut mangroves for firewood.</li> </ul>
<b>List of Actions</b> <ul style="list-style-type: none"> <li>Contact the university to ask assistance in training and environmental education.</li> <li>Discuss the problem about the fish pond owner with the mayor.</li> <li>Hold a meeting with the youth group and other members of the community.</li> <li>Design an incentive scheme for those who would be planting and maintaining the plantation.</li> <li>Link with NGOs for possible assistance in livelihood programme.</li> </ul>	

<sup>9</sup> IIRR. 1998. *Participatory methods in community-based coastal resource management*. Volume 2, page 31. Cavite: International Institute of Rural Reconstruction.

**Tips on use**

SWOT is an adaptable and flexible method, allowing for different perceptions to be recorded, and it directs the attention of those involved towards joint action.

This method is useful to encourage input from many people, helping them think about potential solutions and constraints, for example, as part of a strategic planning process. SWOT can take past mistakes or weaknesses and transform them into constructive learning processes. It can help make complex problems easier to deal with within the shortest time possible. It is a useful starting point for group self-evaluation.

A SWOT analysis can be done as a brainstorm in a small group or workshop setting or it can be done as an analysis and synthesis of other information.

**Method 15 Dreams Realised or Visioning****Purpose:**

To have a focused discussion around people's dreams or shared visions for the future of a project or other activity. From an M&E perspective, this is a good method for identifying indicators, understanding if primary stakeholders feel that their well-being is increasing or not, and helping project stakeholders reflect on the relevance of activities based on people's visions for development.

**How to:**

1. Start by asking people to describe how they would like things to be in the future. The meetings can be held at an individual, household, interest group, community, or organisation level. The future time for which dreams are to be discussed will need to be clarified beforehand but a period of two to five years is long enough for dreams to be more than simply dealing with the immediacy of survival and yet short enough to remain realistic.

In practical terms, it consists of two basic steps: (1) personal reflection (15 minutes) and (2) sharing in sub-groups and/or directly in plenary until a single common future is created from the individual reflections (up to 90 minutes, depending on if there is a sub-group session first). There is usually one guiding question that works effectively at both individual and group levels, for example:

*"What are the characteristics of the ideal situation we wish to achieve here in 20 years time?"*

Or ask them to complete the sentence:

*"I know that my vision for this situation has been achieved when I see...."*

It is also possible to generate a discussion by asking people to imagine they are giving a presentation at a conference or to their community at some point in the future (e.g., in two years time), describing why their project has been successful. What would they present as the successfully achieved future? First ask them to list the stakeholders who should give their views at this meeting. Divide them into small groups, each one representing a different stakeholder from the area where the project has been active, for instance, the government agency, the local resource user, the village children and the funding agency. This will stimulate a more comprehensive idea of the vision than if they only think in terms of being a project staff member or partner.

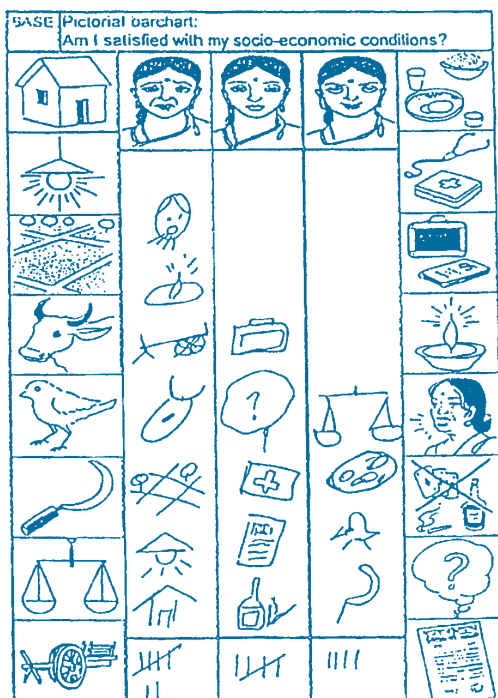
2. The dreams can be written down or represented with a symbol. In the discussion, the dreams can be specified, with clear time frames for achievement.

3. Once articulated and discussed, the dreams can become the indicators that are being monitored as they are being realised, are changing or are becoming ever more elusive.

4. The discussion is repeated every six to 12 months, or however often those involved think changes are likely to have occurred. The progression or regression of the development of the dreams/indica-

tors needs to be properly recorded in symbols or words in these discussions (for example, see Figure D-1 below). Discussions can also include a comparison of current dreams with those articulated during a prior monitoring event. It is essential also to discuss why these changes occurred and to what extent they were caused by project activities or by other, external factors.

Figure D-1. A woman's progress towards realising her ideal future, India <sup>10</sup>



#### Tips on use:

This method helps people think in terms of a longer-term vision, beyond the immediacy of daily problems. It provides a good basis for planning as it builds on people's own dreams. Working from a vision helps to open up people's minds to other ways of overcoming problems. Focusing only on problem-solving often restricts people's ideas as they often slip into standard ways of solving the immediate problem in front of them, rather than imagining a new path they can create towards realising the envisaged future.

This method requires good facilitation in order to find convergence between the variety of dreams that may emerge from different people/groups.

Note that the longer the time frame you choose for this visioning exercise, the more it will become dreamlike or a kind of a wish-list. If a time frame of five years is used for this exercise, then the vision is more likely to resemble an achievable output. Neither one nor the other is better – it is important to have the long-term vision and be fairly realistic about it.

## Method 16 Drama and Role Plays

### Purpose:

To encourage groups of people to enact scenes from their lives concerning perceptions, issues and problems that have emerged relating to a project intervention, which can then be discussed. Drama can also help a group to identify what indicators would be useful for monitoring or evaluating and to identify changes emerging from a project intervention.

### How to:

1. Choose the central theme, whether it be an M&E indicator or a question or scenario that is to be dramatised.
2. Decide who is to work together on a drama piece. If you want to compare different perspectives, then discuss with the group how best to form sub-groups to allow these perspectives to emerge. For example, elderly women, younger women, elderly men, younger men, girls and boys could each present their views of the changes in the community resulting from rehabilitation of the local school.
3. Participants construct their own dramatic performances, in which they present their opinions and thoughts on the topic being discussed.
4. The facilitator(s) can record the performances through written, photographed and/or video-taped documentation.
5. The group then discusses the issues emerging from the play and conclusions can be drawn.

<sup>10</sup> Noponen, H. 1997. "Participatory Monitoring and Evaluation. A Prototype Internal Learning System for Livelihood and Micro-credit Programs." *Community Development Journal* 32 (1): 30-48.

**Tips on use:**

Sometimes information can be drawn from drama or role plays in a cutting and satirical way, revealing things that would not come out through more formal methods. This method is an interesting way to monitor group interactions and perceptions of key problems. It can also be used to monitor, in a very qualitative manner, changes in natural resource use, for example, by asking those involved to include their use of resources, the quality and ease of availability, etc. in the scene they are to enact. Drama can be a good way to start identifying what changes might be most important to monitor using other methods.

Some cultures are entirely at ease with drama as a form of communication but for others, it is uncomfortable. Do consider the cultural appropriateness of this method. Also, it is highly qualitative and so would not be suited for precise information needs.

## D4 Methods for Spatially-Distributed Information

The methods in this section deal with information about any issue that has some level of geographic distribution. This could be land and land uses but also health, education or economic issues. Maps relate to a geographic area, and can therefore help locate biophysical, economic and social indicators that have a geographic distribution. They can be used to focus on all levels – from a farm property, to the community-level of households, to a larger region. Maps can be made from the most rudimentary materials such as a stick to draw on sand, to the most precisely accurate high-tech images that get coordinates through the use of a GPS (global positioning system, see Box D-11). Maps can represent perceptions, be based on memory or be produced with cameras or a computer programme such as with a GIS (geographic information system). Existing aerial photos and formal maps can also be used if they are at the desired scale and are understandable to those involved.

### Box D-11. Global positioning systems

A global positioning system is increasingly affordable and not difficult to use for making highly accurate maps. GPSs are hand-held devices that use signals from a network of satellites to automatically calculate precise data on geographic coordinates. The receiver references its position with respect to these satellites, thereby giving an accurate measurement of the exact geographic coordinates. Researchers and stakeholders alike can use the GPS receivers to determine these coordinates. To make simple maps based on GPS can be done by anyone, but to make highly detailed and accurate maps such as those using the GIS format (Method 19) requires training and additional computer equipment.

### Method 17 (Sketch) Mapping

**Purpose:**

To provide a visual representation of information in a particular geographical context based on stakeholders' perceptions of any focus issue or indicator that is being monitored and evaluated:

- *physical*, such as available resources and their use, key problem areas, (proposed) innovations, where land degradation problems are and where improvements have been noticed, or regarding a specific topic like maize trials;
- *social*, ownership- or gender-differentiated use of natural resources, etc.

**How to:**

1. Ask the individual or the group to draw the boundaries of the geographic unit being discussed. Participants can decide how they want to represent this – on paper with writing or using local materials such as sticks, stones or seeds. Remember that whatever material is chosen, you will always need a paper-based copy to enable comparative analysis.

If it adds to the discussion, three-dimensional elements can be added, transforming the map into a model that emphasises landscape-level aspects of issues.

2. On whatever medium is chosen, ask the participants to draw the outline of the local area, for example, roads, towns, rivers and property boundaries. One way to do this, if you have the proper resources, is to project an overhead map onto a large sheet of paper and then to trace the required information.
3. Having prepared the map, which could be as large as a wall, people can then add their information either directly or by using sticky notes. Let them record what is most significant to them, and then ask for more detail if something you are interested in is missing. One use of a sketch map is for social mapping of household levels of well-being (see Method 31).
4. Several modifications to the map may be needed before those involved are happy with the final result. Include additional written comments such as quantities of interest, if necessary.
5. Once a “base” map has been made, subsequent meetings can use it to make comparisons. Figure D-2 below shows such a comparison of a base map with a later monitoring event, recording the status of fields before and after soil and water conservation measures were taken in one project in India. To be most effective, at least some of the people involved in the map production should be involved in updating the map during the next monitoring event.

Alternatively, the same map can be used by colour-coding indicators for each new year or monitoring event. While this option is much easier for direct comparison and analysis (as all the data are recorded on one map), it can become messy if too many indicators and years of data are stored on it.

#### **Tips on use**

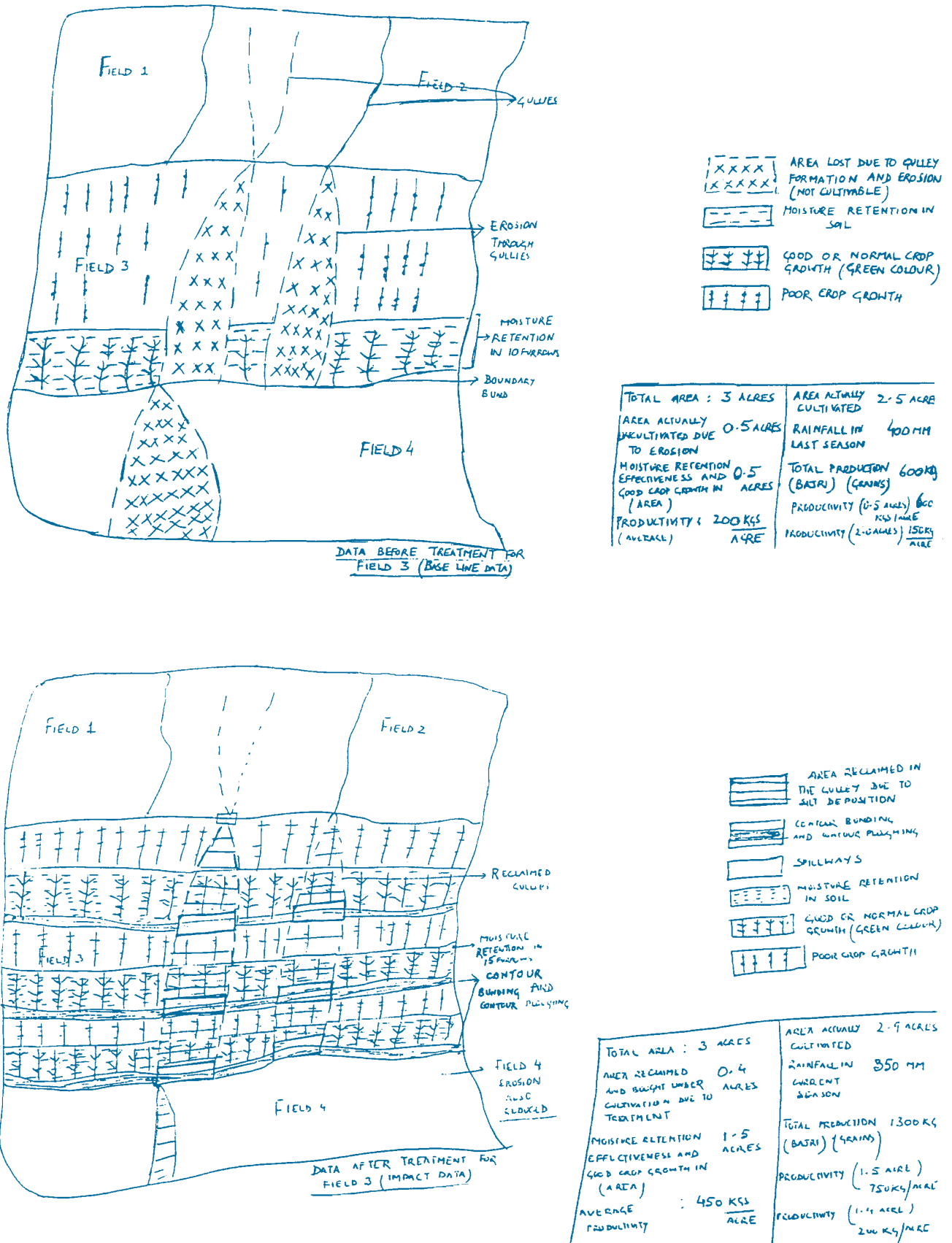
Remember that only those issues that have a geographic distribution are useful to analyse with maps. Maps are useful for obtaining a better understanding of an area being studied, and for providing information and ideas on local perspectives of, for example, resources or access to services/facilities.

The larger the number of topics to be included, the more complex the maps will be. For this reason, it might be better to make several maps, with one issue/indicator per map. However, this is very time-consuming and storing such maps can pose difficulties.

Sketch maps represent how people see a physical area or a particular issue and its importance, and are, therefore, not as precise or scale-accurate as formal maps. Also, people will only show on a map what is of value to them. So, for example, where a mining company’s map of an area would emphasise the locations of ore deposits and navigable rivers, the local map of the same area but drawn by villagers may show communal areas, sacred places, pasture lands, burial grounds and agricultural lands.



Figure D-2. Status of fields before and after soil and water conservation measures, India <sup>12</sup>



<sup>11</sup> Shah, P., G. Bharadwaj and R. Ambastha. 1991. "Participatory Impact Monitoring of a Soil and Water Conservation Programme by Farmers, Extension Volunteers and ADRSP in Gujarat." RRA Notes 13: 86-88.

## Method 18 Transects

**Purpose:**

To undertake a structured walk through an area to observe particular indicators (such as the incidence of weeds or soil erosion, variations in quality and quantity of natural resources or the use of innovations in different zones).

**How to:**

1. Based on the topics or indicators to be observed, decide who could provide relevant and varied information for participating in the transect or who might be interested in participating. Different stakeholders should be involved, such as local primary stakeholders, community leaders, farmers and also those holding relevant expertise, extension agents, etc. If the group is too large, thought should be given on how to divide the group to participate in separate walks along the same route.
2. If a map of the area is available, use it to decide together what the route will be. The same route should be taken each time to keep the basis of observing changes stable. Transect routes can vary greatly in time needed – from one hour to a whole day, depending on the size of the area, the type of transport and the detail needed.
3. Indicators that people want to observe, measure, record and analyse will already have been identified and these form the basis of observations and measurements during the walk.
4. As the walk proceeds, participants can use their curiosity to probe for and include other unexpected observations. Indicators do not have to be visual but can also include topics such as land ownership or which solutions have been tried where for which problems. Keep a good record of what emerges from the discussions.
5. Draw what has been seen and discussed on a schematic diagram and use that as the basis for subsequent monitoring transect walks.
6. The frequency of walks will vary considerably, depending on the indicator(s) that are being monitored and the rate with which the monitored changes are likely to change. If monitoring pests, this might require a daily walk, whereas monitoring soil erosion would perhaps require a walk every four to six months.
7. Comparing the different observations for each zone serves as the basis for discussing why changes might have occurred. You can walk with any notes or diagrams from previous monitoring events to trigger your memory and to make immediate comparisons possible.

**Tips on use:**

This is a relatively inexpensive method that provides many valuable insights. It can be used for quantitative and qualitative information gathering.

The drawing of a transect walk is usually a cross-sectional view of the path taken, with the findings below it in table format. However, if this is too abstract, then it might be more useful simply to draw the walk as a bird's eye view line on a map, with the related information written alongside.

## Method 19 GIS Mapping

### **Purpose:**

To use a computer-based geographic information system (GIS) that represents geographic coordinates in a very precise map, to include information relating to changes in geographical, social or agricultural indicators. From an M&E perspective, a GIS can help to analyse complex data collected through other methods, as the various thematic layers of spatial information (such as forest distribution, population densities or even community planning activities) can be overlaid for easy examination of relationships between the different themes. GIS can present some M&E data with great precision.

### **How to:**

1. Decide if you need a high level of precision. This may only be needed for some aspects of large-scale and highly complex M&E studies. Obtaining GIS base maps can be very costly so for most projects will not usually be worth the investment.
2. Obtain images from the area to be studied in order to have a base map. Increasingly, base maps in GIS format are available from government and other agencies. If these are not available, you must think carefully about the time and resources you will need to invest into converting maps into a GIS format, or to creating your own base map.
3. Having determined the indicators to be monitored using other methods, collect data on these indicators. Create a numerical coding system to represent qualitative information as the GIS format only recognises data as numbers.
4. Organise the information using GIS software programmes (e.g. MAPINFO, ARCVIEW, IDRISI, etc.). A GPS (see Box D-11) can be used to assist in producing a highly accurate map.
5. Present the images to the community for their input and feedback.
6. Periodically, repeat the process and mount the maps for easy comparison. Discuss what changes can be seen, why these might have occurred and what might happen next with or without appropriate action. New discussions are held for each new set of images.

### **Tips on use:**

A GIS can help you collate, analyse and present information. Using GIS technology can generate maps representing a diversity of themes, able to combine quantitative and qualitative information. It can be a powerful communication mechanism for advocacy. It can also be useful for making simulations of possible designs.

However, GIS technology has been criticised for its quantitative, systematic, expert-centred and hi-tech approach, which distances stakeholders from the whole research and decision-making process. Nevertheless, if it is well organised, GIS use can be made more participatory by including stakeholders in the process of obtaining data, by presenting the images for their feedback and discussion, and to help stakeholders make their own management decisions. Various participatory methods (e.g., discussion or mapping methods) can be used to obtain these data.

Even if a GIS is used in a participatory process, there can be a loss of detail when attempting to enter descriptive information into a GIS programme. A GIS cannot always adequately represent qualitative information such as social, economic and environmental explanations of a problem obtained at the village level.

This is a technical, expensive method that requires some training. These techniques should only be used if the project can justify the cost and has the expertise to use the required technology.

## Method 20 Photographs and Video

### Purpose:

To help track changes discerned from a series of photographs or video sequences shot at different levels (from using a normal camera at ground-level to aerial or satellite photographs taken from an airplane or from space). From an M&E perspective, this method can focus on specific indicators or performance questions or can be more open-ended if you give the camera to stakeholders and ask them to assess changes they perceive to be critical.

### How to

1. Obtain a series of images from different years, including the current situation. Many government agencies will have photographs on file that can be a good source of historical land-use data.

### *Box D-12. Some hints for making a photo series to assess change(some are relevant for a video series as well)*<sup>12</sup>

- Have a consistent landmark in the background of the photo year-after-year. A post, rock, painted X, telephone pole or some other object that will stay in place over time.
- Fancy equipment is not necessary. You can use a 35 mm camera, but even a cheap disposable camera will do.
- Write down when the photo was taken and make sure you are standing in the same location each time.
- Take the photo at the same time of year each time, to make comparisons easier.
- Target the area of focus – do not try to photograph too large an area.
- Use old photos to compare (historical photos, if available)

2. After deciding what indicators to monitor, the person or group takes photographs or video footage focusing on images that will show the selected indicator(s).

3. Having obtained the images needed, discuss them with the people whose perspectives are important to understand. Types of issues to discuss could include: what are the key changes, how widespread are they, what different views on change are there or what are the causes of the changes that have been filmed or photographed.

4. Return to the same site and take a new set of photos or video footage at key moments, such as for reporting periods, at times of seasonal change, just after germination or prior to harvesting.

5. Place the different sets of images side by side (or edit the videos to show changes sequentially) and trigger a discussion on any differences that can be seen, why these might have occurred, what might happen as a result, what actions will be needed, etc. These analytical discussions are repeated for each new sequence.

6. Be sure to label and store the photographs/video footage properly in a safe and accessible place, in a manner that will allow for easy comparison with the next sequence of images.

### Tips on use:

Photographs and videos can be combined with a range of other methods, such as diaries (Method 21) or the “most significant change” method (Method 24). They can also enhance the use of drama and role plays (Method 16). Such images can also be used to look at differences between before and after an intervention, something particularly helpful when disseminating information or providing presentations.

## D.5 Methods for Time-Based Patterns of Change

Time-based methods refer to those methods that help to understand changes related to specific blocks of time, for example, how the month of September compares between one year and the next, how March compares to August, how a typical day today compares to a typical day two years ago or simply which critical events have occurred over the past 20 years. This should not be confused with the fact that all methods can be repeated in order to monitor changing situations through making comparisons against a particular starting point or baseline.

### Method 21 Diaries

**Purpose:**

To record events, facts, reactions and/or opinions over time, as recorded by individual stakeholders or by groups. From an M&E perspective, this method is useful for capturing details that might otherwise be missed and that might explain the context in which a change occurred. The method also may enhance understanding of how a change came about. It can be used to focus around specific performance questions or indicators.

**How to:**

1. Introduce the diary early on in the life of the project, in order to optimise the learning process.
2. The form and focus of the diary needs to be decided and someone to record the entries must be chosen. Diaries can be more or less structured, and are not necessarily based on pre-determined indicators but can describe general themes. They can be very focused, for example, dealing only with a specific crop variety, or they can describe broader developments.
3. Entries can be written documentation, video-taped sequences, photographs or tape recordings. Diagrams can also be included but this can be quite time-consuming. The diaries can be written based on group discussions, for example, as annexes to the minutes of a meeting. Alternatively, they can be written by individual stakeholders.
4. Diaries can then be used in discussions by having individuals or groups meet to compare notes and identify changes that are particularly significant and require action.
5. Data gathering and analysis and the sharing of findings may require other methods, such as measurement, focused group discussions and compilations of recordings/photographs/video shots. A diary will remain with the recorders who may compare how performance has changed over time and discuss the reasons for this shift.

**Tips on use:**

One type of diary has been termed “process documentation”, for which entries are written during the life of a project with detailed descriptions of processes, why events happened, problems and people’s reactions, etc. Another good alternative is the learning diary, used by individuals or groups in their internal evaluation system to assess what they are learning, how they are reaching conclusions, and if it is useful.

Diaries are accessible, as people/groups can decide themselves when they will monitor and how. It is therefore good for self-evaluation. Diaries can provide detailed, qualitative insights but literacy is critical as is the discipline to write regular entries. Analysing the content of diaries requires focused, selective reading of passages. Therefore, it is useful to decide beforehand what types of entries will be made.

## Method 22 Historical Trends and Timelines

### **Purpose:**

To obtain a historical understanding of sequential changes that have occurred, relating to particular points of interest. From an M&E perspective, this could focus on specific indicators, be used as triggers in discussions to assess if certain changes can be attributed to project activities, and list changes in the context that help explain possible effects of the project.

### **How to:**

There are three ways to record discussions that focus on historical data – in written form, as a matrix or as a graph. To develop a matrix summarising historical trends:

1. Agree on what indicators/events are important to the situation at hand.
2. On a large sheet of paper draw rows and columns to make a matrix. List dates going along the top, for example, write at the head of three columns: “Today”, “10 Years Ago” and “20 Years Ago” (see Box D-13 below).
3. Write in the topics of interest along the side – such as key local events, key external events, influence of local personalities/groups, major changes (social, environmental, economic) and key trends – as pertaining to the agreed performance questions or indicators or simply to understand specific aspects of the context in which change happened.
4. Work either with a representative group of people or with different, more homogenous groups to fill in the table, using seeds, stones, numbers, etc. The discussion focuses on how people view changes with respect to the issues listed. The quantities indicated are not absolute numbers but are a relative comparison of how the aspect has changed from one time period to the next.
5. You can add a fourth column – “the future” – in which people identify what they would like to see change and what targets they have related to the aspects being discussed. The changes recorded can then be sorted into positive, neutral or negative events, depending on their impact on the organisation or community.

### **Tips on use:**

Historical trend lines show changes from one year to the next and, therefore, provide a good means of tracking longer-term changes. This method can stimulate a valuable discussion about the speed and extent of positive and negative changes, why a situation is as it is and why different groups or individuals hold the views they do. This method provides a human dimension to data.

However, it only provides general insights and details will need validation.

Historical trends/timelines differ from seasonal calendars (Method 23) in that they show a *sequence* of activities or progressive change, while seasonal calendars illustrate *cyclical* changes.

**Box D-13. Historical trend analysis of renewable natural resources**<sup>13</sup>

Ask participants to list all the natural resources used by the community to support local livelihoods. Once they have been placed along the vertical axis of a matrix, ask them to use ten seeds or stones and determine which time period enjoyed the healthiest natural resource base (in terms of its abundance and/or quality). This must be done for every period (using up to ten seeds each time). See the matrix below for a hypothetical example.

<i>Resources</i>	<i>Today</i>	<i>10 Years Ago</i>	<i>20 Years Ago</i>
Food security	XXX	XXXX	XXXXXXXXXX
Rainfall	XXX	XXXXXX	XXXXXXXXXX
Crop production	XXX	XXXXXX	XXXXXXXXXX
Soil fertility	XX	XXXXXXXX	XXXXXXXXXX
Water for animals	XX	XXXXXX	XXXXXXXXXX
Drinking water	XXX	XXXXXXXX	XXXXXXXXXX
Pasture land	X	XXXXXX	XXXXXXXXXX
Grass for roofing	XX	XXXXXX	XXXXXXXXXX
Cattle	XXXXXXXXXX	XXXXXX	XXXXX
Fruit trees	XX	XXXX	XXXXXXXXXX
Firewood	XX	XXXXXX	XXXXXXXXXX
Trees for fencing	XXXXXXXX	XXXXXXXXXX	XXXXXX

**Method 23 Seasonal Calendars****Purpose:**

To explore and record data for distinct time periods (per season, year, month or even week) to show cyclical changes over time. From an M&E perspective, calendars can help, for example, to assess if bottlenecks that occurred regularly are being resolved or not, whether these are attributable to the project and when certain performance questions or indicators are best monitored or evaluated.

**How to:**

1. It is important to clarify with those involved whether calendars will monitor changes between weeks, months, seasons, or years. This will depend on the indicators that have been selected and the rate at which they change.
2. Construct the calendar either to depict one or several years, or the minimum number of months or seasons over which monitoring is intended to occur. The calendar can be represented either horizontally or as a circle, though the latter can become messy to read if many indicators are being monitored. Circular calendars are not suited for multi-year trend analysis.
3. The calendar itself can be used to gather the data in some cases. For example, at weekly or monthly staff meetings, when the tasks completed in the past month are discussed, these can be recorded immediately onto the calendar. Alternatively, if data are gathered through other means, then for each time interval for which data is gathered, the correct amount can be filled in, thus using the calendar as a recording format.

A group discussion variant on this process is to divide participants into groups. Each group selects one or two “key informants”, who may have relevant expertise, to be interviewed by the rest of the

<sup>13</sup> Gubbels and Koss 2000, 161, see Further Reading.

group. Based on this information, each group then makes a diagram to illustrate trends and changes in those activities and/or events over the time interval of interest. These are then presented to the whole group for discussion.

4. After several data entries, the calendar will show variations over time and so stimulate discussions to understand what the changes are and why they are occurring. By monitoring various types of changes simultaneously in one seasonal calendar or trend chart, certain patterns may become apparent such as how heavy work periods may occur during periods of indebtedness, illness and lower attendance at group meetings. Data can also be differentiated according to age and gender. However, the relevance of such variations will depend entirely on what it is that you want to monitor.

#### ***“Daily Routines” Variation***

A variation on this method is to depict daily routines (or “how do I spend my 24 hours”), thus looking at daily patterns. This is useful for assessing key bottlenecks in daily tasks and how they can be overcome, or for making quantitative assessments of labour and inputs needed for daily tasks. Comparisons are made between the current situation and previous diagrams to identify how changes that have been introduced affect routines.

#### **Tips on use:**

The calendar method is ideal for monitoring over specific time periods, such as per season. Seasonal calendars that include a range of indicators can reveal how different patterns of change are linked and can be good for discussing causality of certain changes. Seasonal changes are particularly important for rural areas. They may significantly affect labour, water supplies, disease, food and income.

However, as with historical trends/timelines (see Method 22), seasonal calendars do not necessarily present accurate data. Cross-checking through direct measurement of, for example, time used to fetch water or incidence of diseases may be needed, depending on the accuracy you need.

If using this method with a group of people, it may be difficult to reach consensus on a “typical” or “average” calendar (particularly when it comes to daily routines). It might be best for each person to do one individually and then analyse the different routines together, or to select one or two individuals in the group as laid out in the second part of Step 3. Care must then be taken to limit biases in the sample.

## **Method 24 Most Significant Change**

#### **Purpose:**

To identify cases of significant/critical changes – both positive and negative – relating to key objectives, rather than looking for trends related to a certain phenomenon. From an M&E perspective, this method can help track stories of changes related to less easily quantifiable issues, such as “capacity strengthening” or “gender equity”.

#### **How to:**

1. Ask those involved to identify what aspects and types of changes they feel they need to track. These are the “domains” for which critical changes are tracked. This first step in itself is valuable, as it asks the group to identify the issues that they consider critically important for them to achieve – this requires clarity and consensus. These changes can relate directly to the goal and purpose of the project but might also be cross-cutting issues, such as “gender equity”, that the implementing partners and project staff wish to track. Some examples of domains are:



- changes in people's participation in credit groups;
- changes in the sustainability of people's institutions and their activities;
- changes in the use of participatory approaches by project staff with primary stakeholders;
- changes in the project's contribution towards influencing government policy.

2. The frequency for discussion also needs to be decided and will depend on the likely rate of change in meeting the objectives. Some changes will take longer to be observable while others may occur on a weekly basis. A simple question is then developed, such as: "Since our last meeting, what has been the single most significant change related to... [INSERT THE DOMAIN]?" or "During the last three months, in our opinion, what do we think was the most significant change... [INSERT THE DOMAIN]?"

3. If discussions take place with a group, as will usually be the case, the need to reach consensus on the single change or event will provoke a rich and detailed review of the experiences of group members over the past period, and much debate about why one change is more significant than another.

4. The answer needs to be verifiable and so should be documented in two parts: (1) a description of what happened, with sufficient detail to allow another person to verify it if necessary (what happened, with whom, where, who was there, when did it take place, etc.), and (2) an explanation of why that particular change has been selected out of all the others that will have been suggested.

5. The findings will relate to positive or negative changes or events that occur as a result of project activities. It is possible to explicitly include both types of change – negative and positive – per domain. Where negative changes are identified, actions can be decided on to prevent or redress the problem. If a positive change is selected, then actions can be agreed to strengthen or spread these.

**Tips on use:**

It is a good idea to do a trial run of the domains before finalising them, to make sure that the wording of the change domain is clear to everyone.

This method explicitly does not try to identify the average. The selected changes are not representative but the most significant changes. If someone, from a coordinating committee for example, wishes to know the extent of a particular change, then this change becomes an indicator that is tracked for a defined period of time by everyone.

The original version of this method was used in a hierarchical organisational structure, in which micro-credit groups identified four types of changes. Field staff in turn selected the key changes – per domain – at the project-office level and sent them to headquarters. At headquarters, the stories of change were also selected from those coming from the different project offices and then passed to the biannual meetings of the funding agencies. All the stories of changes (24 in total, 4 domains x 6 months) were collated in the form of four chapters in a report. This shows the ease with which this method managed to synthesise a wide set of experiences into a manageable reporting structure and documentation.

## D6 Methods for Analysing Linkages and Relationships

Fundamental for all projects is an understanding of changes in relationships and linkages between groups, such as primary stakeholders and organisations and also between issues, activities, causes and effects (anticipated or unexpected), inputs-outputs of systems, product cycles, resource or nutrient flows, and so forth. This cluster of methods provides ideas on how to analyse such issues by using different visualisation techniques.

### Method 25 Rich Pictures (or Mind Maps)

**Purpose:**

To make a pictorial representation of the elements that need to be considered or are important to a particular (project) situation, including stakeholders and issues, and the interactions and connections between them. From an M&E perspective, a rich picture can help identify what aspects of a situation need to be monitored, which change indicators to track and/or which key stakeholders need to be included in the M&E efforts.

**How to:**

1. Using a large sheet of paper and symbols, pictures and words, draw a “rich picture” (or “mind map”) of the situation (project/group) that you wish to evaluate. This is best done with about four to eight people and takes a half to two hours.
2. Start by asking people to note all the physical entities involved, for example, the critical people, organisations or aspects of the landscape.
3. Ask people to present their rich picture by describing the key elements and key linkages between them.
4. If there is more than one group, compare their pictures and cluster the ideas that are similar and those that diverge. In this way you can identify the most important issues to discuss, such as critical topics to focus on in an evaluation, possible indicators or key stakeholders to include in M&E.

**Tips on use:**

A rich picture helps to open discussion and come to a broad, shared understanding of a situation. It does not tell you what has changed, although this may come up in discussion, and therefore is best used as an initial exercise in an annual project review or when designing the M&E system with different stakeholders.

Think carefully about whom to include in a group. If you want to have a representative picture, then the composition of the group will be different than if you want to have focused perspectives to compare.

### Method 26 Impact Flow Diagram (or Cause-Effect Diagram)

**Purpose:**

To understand the contributing causes or reasons for a particular problem or issue, or to identify effects or impacts of a particular change (see Figure D-3). From an M&E perspective, this method can help to broaden insights about impact to include positive and negative, expected and unexpected, and direct and indirect impacts. It can also help identify general effects that form the basis for indicators that are tracked more systematically or quantitatively with other methods.

**How to:**

1. Start by putting the topic – with a symbol, photograph or in words – in the centre of a group (on the ground or a large flip chart). To work well, the topic must be specific, not as broad as “environmental degradation” but, for example, “use of contour bunds”. The broader the topic, the longer the

discussion will be. The topic can be a project activity, an event, a trend or a phenomenon such as “the use of rotating funds”.

2. Ask what has happened as a result of that activity (or trend/event). The answers, both positive and negative, are the consequences of that activity (trend/event) and are noted as symbols or with words. They are placed on the diagram to show how cause and effect are linked, with arrows or lines. Try also to probe for indirect consequences or, if someone mentions something that is an indirect consequence, then ask them to explain what caused this more directly. This helps the diagram develop in a series of cause-effect chains.

3. If quantitative information is needed, then questions can be asked about the amounts related to each impact that has been identified. For example, if farmers say, “we’ve noticed increased production”, then they may be able to estimate or measure how much that increase is worth or how many of the farmers involved in the trials have noticed an increase.

4. You can also ask if the impact has been the same for everyone and symbolise that on the map, with different groups having their own symbols. For example, if controlling banana weevil with a non-chemical alternative requires more labour input, show who has provided this input – women or men – and what the impact has been for the women, men or children involved.

5. Repeat the exercise with an agreed frequency. You can use past diagrams for comparison to generate a discussion on why changes might be occurring and how the rate of change is progressing.

6. If several flow diagrams are made with different groups and aggregation is required, they can be compiled into a single diagram, which then forms the basis of discussion. Be careful, though, when attributing change to different people. By aggregating effects onto one flow diagram, you may lose the precision of knowing which group identified which effect. By colour-coding the effects, this can be prevented.

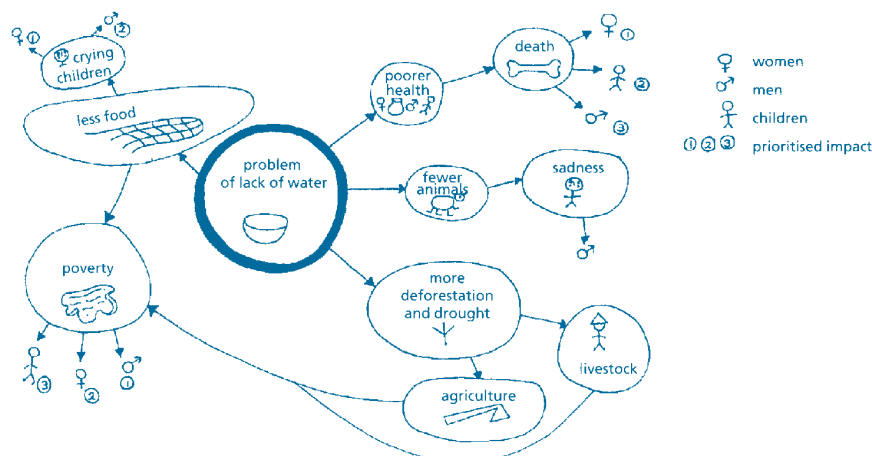
**Tips on use:**

In these diagrams, the linkages are represented with lines or arrows. If arrows are to be used, make sure that everyone is clear about what arrows mean as they are not a universal symbol.

Flow diagrams provide an overview of change, from the perspective of the people who are involved in the discussion. So do a crosscheck with other groups and other methods.

Impact flow diagrams can be used to identify areas for potential improvements. Be careful not to include too much detail in one diagram as it can easily become too dense to analyse well.

Figure D-3. Impact flow diagram on the gender-differentiated consequences of decreased access to water in Burkina-Faso<sup>14</sup>



<sup>14</sup> Guijt, I. 1996. "Questions of Difference: PRA, Gender and Environment" (training video). London: IIED.

## Method 27 Institutional Linkage Diagram (or Venn/Chapati Diagram)

### Purpose:

To illustrate the extent to which individuals, organisations, projects or services interact with each other and the relative importance (i.e., power dynamics) of each to the issue being evaluated. From an M&E perspective, this method can be used to monitor the quality of relationships and how these relationships are changing and to identify problem areas where corrective action is needed.

### How to:

1. Start by ensuring that the topic is completely clear for everyone – that you are discussing the relative importance of groups/people/organisations and their interactions. The term “importance” can be interpreted in different ways. It can refer to the nature and quality of relationships, the diversity of linkages, the reasons for contact and the frequency of contact. And rather than discussing organisations, you can focus on services and programmes. So reach agreement beforehand on what “importance” means.

2. Have a general discussion during which the different groups, people and organisations that relate to the topic are identified. If participants are including many organisations (more than 15-20), it may be necessary to limit the scope in order to have enough time to finish the exercise. You can do this by prioritising the most relevant groups/people/organisations and focusing your discussion around these.

3. Represent each of the entities identified with a separate circle. First represent the central element to which the others are relating (e.g., a community of primary stakeholders, the project unit or a micro-credit group). You can use paper circles of different sizes or ask participants to draw them. The size of the circle is critical: the larger the circle, the more important the group is for the topic being discussed. And the closer the circles are to each other, the more interaction there is. Overlapping circles represent groups/people with shared functions and a small circle within a larger circle represents a unit within the larger group/organisation.

4. If working with more than one group, compare the diagrams and discuss any differences. Further discussions may focus on areas where problems need resolving, such as conflict resolution or organisational capacity building.

5. Subsequent monitoring events can be tackled in one of two ways:

- a) Make a new diagram at each monitoring event that can then be compared with previous diagrams to analyse changes and their causes.
- b) Use the first diagram to discuss how the current situation is different and why this is the case. These changes can be symbolised, for example, with arrows pointing up to show increase, or down to show a decrease, eliminating a circle, adding others, etc.

Whatever approach is used, discussions should focus on the quality, frequency, appearance or disappearance of linkages between the groups.

### Tips on use:

This method, if facilitated well, provides valuable insights into power structures and decision-making processes. It may help to highlight contrasting perceptions of different roles, responsibilities and linkages, pointing to areas of conflict and dispute and also pointing to ways of resolving these. This method can help identify ways to improve their working relationships with other organisations or groups.

The method works well early on in a self-evaluation process, helping people to locate themselves in relation to other groups or institutions regarding a particular issue.

An institutional linkage diagram can be followed by a ranking exercise by having participants rank relationships and compare these to the recent past.

- Ask participants to identify all of the organisations or groups with whom they have had significant working relationships (past and present). Write these on a card.
- They should then rank these relationships in order of importance (according to performance and viability). Write these rankings on the cards and place them in descending order of importance along the vertical axis of a matrix.
- Define the relationships of the organisations (funding agency, community organisation, technical training support, etc.) and write down these classifications along the horizontal axis of the matrix. Fill out the matrix by placing an “X” in each box that matches the organisation with the relevant type of relationship.
- Decide on a scoring system (e.g., from 1-5, 1 = “poor, significant improvement required” to 5 = “excellent, almost no improvement required”). Score as a group or individually, the quality of the current relationship with each organisation. Write the score to the right of each X.
- Then score each relationship as it existed in the recent past. Write these scores to the left of each “X” in the matrix, using another colour. This then shows how the pattern of relationships has evolved over time. See Table D-3 for an idea of how an institutional matrix would look.

Table D-3. Example of an institutional matrix (Note: scores to the left = three years ago, scores to the right = present)<sup>15</sup>

	Donors (Grant Funding Only)	Community Organisations	Technical Training Support	Networking (Peer Organisations)	Competition/Rivalry
Organisation 1	3 X 5				
Organisation 2		3 X 4			
Organisation 3				4 X 3	
Organisation 4			3 X 3		
Organisation 5					3 X 1
Organisation 6		2 X 3			

## Method 28 Problem and Objectives Trees

### Purpose:

To identify a core problem and its effects and root causes, and to clarify and come to an agreement on core objectives and necessary activities to tackle the problem. The method helps initiate the process of producing or revising a logframe matrix in a participatory and understandable way. From an M&E perspective, this method is critical at project start-up to revise the existing logframe and reach clarity about the precise objectives and outputs that will be monitored.

### How to:

#### Problem Tree

1. Start with a brainstorm on all major problems existing within the framework of the situation analysis. With the group, decide which is to be the starter problem. This does not mean discarding the others but simply selecting one as a core problem. This is often formulated in quite general terms, for example, “deforestation” or “decreasing food security”.

2. Draw a tree and write the starter problem on the trunk. If you want to look at more than one problem, then you will need to draw one tree per problem. Each tree requires considerable time.

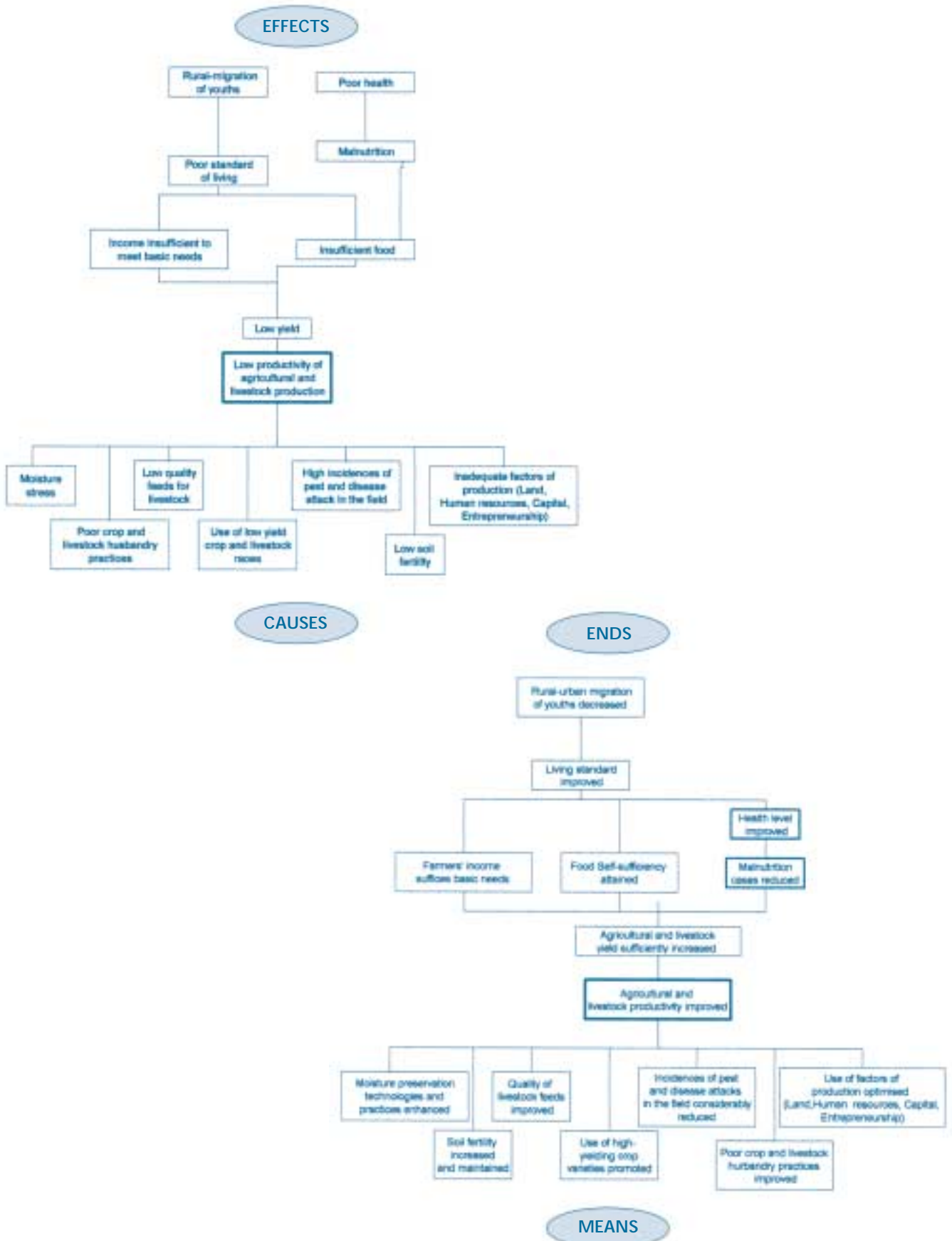
<sup>15</sup> Gubbels and Koss 2000, 141, see Further Reading.

3. Encourage people to brainstorm on the causes of the starter problem – they can use the outputs of the first brainstorm as a beginning (see Method 11). Ask for major problems that cause the starter problem. Alternatively, to avoid a few people dominating, hand out three to five blank cards per person and ask everyone to write down one idea per card. Present the cards and use them as the basis for the discussion on prioritising problems.
4. To focus on the root causes of the problem, discuss the factors that are possibly contributing to it. Examine each factor in relation to each of the other factors and ask, “Is it caused by or a cause of the other factor?” If it is caused by the other factor, draw a line with an inward arrow between the pair. If it is the cause of the other item, draw a line with an outward arrow between the pair. Draw the arrow only in the direction of the strongest effect. Do not use two-way arrows. If there is no interrelationship do not draw a line between them at all. When you are finished, the factors with the most outward arrows will generally be the factors that will drive change - the root causes.
5. Focus attention on these root causes and write them onto the roots of the “tree”.
6. For each root cause, write down its causes on roots lower down. Use the brainstormed ideas for this.
7. Following the same procedure as in Steps 2 and 3, look at what the effects/impacts of the problem are and write down the primary effects on the branches of the tree.
8. For each effect, write down its secondary effects on secondary branches higher up to obtain cause-effect chains.
9. Follow this exercise with an “objectives tree” to identify what actions are needed to tackle the (causes of the) problems as expressed in the problem tree.

### **Objectives Tree**

1. Taking the problem tree above as your base, invert all the problems in order to make them into objectives. This process then leads into an “objectives tree” with the central objective simply being the inverse of the central problem.
2. Ask participants then to look at these objectives and discuss which of these can be tackled by the project.
3. The problem and objectives trees are a first step towards producing a logical framework matrix (see Section 3). Figure D-4 shows an example of corresponding problem and objectives trees obtained in Zambia.

Figure D-4. A problem tree with its inverse, the objectives tree, from an exercise in Zambia



**Tips on use:**

The two “trees” provide a comprehensive though simplified view of cause and effect relationships. In this way, the process of creating a logical framework can become more accessible to primary (and other) stakeholders, making it easier to involve them in revising the project design or developing their own activities.

This method is more geared towards project design than towards M&E. Yet it is critical for subsequent M&E sessions, as this requires the utmost clarity in goal, purpose, outputs and activities.

Linkages are represented with lines or arrows. If arrows are to be used, make sure that everyone is clear about what arrows mean as they are not a universally understood symbol.

## Method 29 M&E Wheel (or “Spider Web”)

**Purpose:**

To provide a visual index that helps in assessing the issue being monitored or evaluated in terms of its ideal, or in comparing two or more monitoring sites and how they change over time. This method can also be used to measure how well a project is meeting anticipated targets, or how an organisation’s capacities change, over time. From an M&E perspective, the spider web provides a visual means of measuring changes in ratings on chosen indicators.

**How to:**

1. Make sure that the topic being assessed is clear. For example, the idea of “the capacity of an organisation” (see Figure D-5) must be very clear and understood by all of the participants. Have the participants agree on which criteria to use to assess the quality of the topic. These are, in fact, the indicators. For this, you can brainstorm (Method 11).
2. The selected indicators are arranged in the form of a wheel, with each indicator being one “spoke” as on a bicycle wheel. The spokes are spaced equidistant to one another. The indicators can be represented by words or symbols.
3. Next, participants agree on how to rank each indicator – from 0 as the lowest/worst level to 100 (or 25, 10, etc.) representing the highest/best level. It does not matter if 0 is on the outer edge of the wheel and 100 in the centre or the other way around, as long as all the spokes on the wheel are the same.
4. Once the wheel has been made, assess each indicator. If doing this with a group, then there will need to be consensus on the final score (or an average figure). Indicate the place on the spoke that corresponds with the final score given. Then join all the scores, which are marked as points on the spokes, to show what ends up looking like a spider web. A look at the spider web gives a quick overview of key weaknesses and key strengths. The weaker aspects of the issue being assessed are those that have scores closest to 0.
5. Previously made wheels can be revisited at subsequent monitoring sessions in order to compare how the situation changes over time.

**Tips on use:**

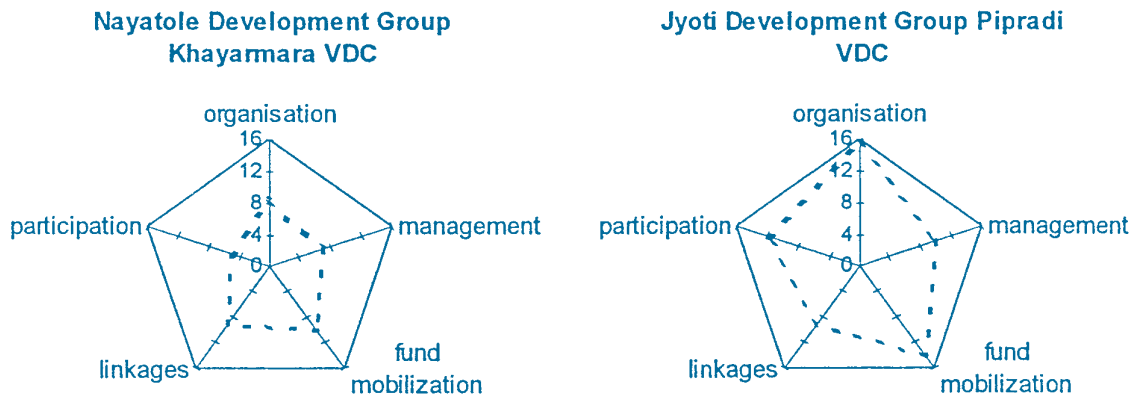
The spider web can be used to help represent different organisations’ capacities by grouping the organisations according to sector, for example, in order to assess their overall status or training needs within that sector. However, it only gives an indication of perceptions and direction of change, not precise measurements.

If the wheels are made on overhead transparencies with a standardised size of wheel, the evaluations of several organisations/project areas/etc. or of the same situation over time can be overlaid to see very clearly how they differ or have changed.



Changes in the average opinion or points per indicator form the basis of discussing why such changes have occurred. The larger the point system is, the more complex it can become and also the more meaningless the discussion, as people may not be able to indicate exact numeric differences, for example deciding between 28 or 29 points within a range of 0 to 50. On the other hand, if people are scoring on a scale of 1 to 3, then it will be much easier to reach a general consensus, but then the answer will only serve as an extremely general indication.

Figure D-5. A comparison of two spider webs representing the capacities of two organisations in Nepal at a certain point in time<sup>16</sup>



## Method 30 Systems (or Inputs-Outputs) Diagram

### Purpose:

To allow for a detailed analysis of flows of inputs and outputs in a system (such as a farm, a forest, an organisation or even a larger geographical region). Systems diagrams can help to analyse the inputs needed to make the system work, as well as its outputs. From an M&E perspective, this method can help assess, for example, if blockages are being alleviated or new ones emerging, where quantitative gains are being made in terms of output increases, where inputs are preventing progress, etc.

### How to:

1. Start by representing the system topic at the centre of the board, flip chart, sheet of paper, etc.
2. Ask the participant(s) what main activities take place within this system. These are then symbolised around the central topic on the diagram and linked with arrows. If the activities are symbolised or written on loose cards, then it is easier to adjust the diagram as the discussion develops.
3. Ask what inputs are needed for each activity to be possible and what outputs emerge from each activity. These inputs and outputs should be placed on the diagram to show the linkages.
4. As the discussion progresses about the inputs and outputs for each activity, each activity becomes a subsystem and linkages emerge between these subsystems. For example, an output from the activity of crop production, like fodder, will be an input into the activity of livestock management. If useful, numerical properties of flows can also be written in, for example, how many labour days are being invested in the home garden or how much organic fertiliser is being applied in different plots.
5. At each monitoring event, changes in the inputs and outputs are noted either on the systems diagram itself or on a flip chart next to it. Comparing changes in the types and quantities of inputs and outputs is the basis for discussing why such changes might have occurred.

<sup>16</sup> Pederson, L.M. 1997. *Monitoring Community Groups, Capacities: A Pilot Project in Syangja and Mahottari Districts*. Kathmandu: CARE Nepal. p. 9.

6. If several systems diagrams are made with different stakeholders/groups and aggregation is required for a community or geographic area, these can be compiled and linked within a single diagram. However, you will lose the specificities of individual conditions.

**Tips on use:**

Particular inputs and outputs can be focused upon for greater detail, for example, a commodity flow diagram, which looks at the movement of commodities between areas.

Gender/Age/Well-being-differentiated analyses of systems diagrams allow for detailed insights into how different members of a household or different types of households view changes and bottlenecks in the system.

## D.7 Methods for Ranking and Prioritising

Ranking is critical when comparing elements or information on the basis of strength, importance or other predefined criteria. A simple example of ranking is to ask participants in an M&E meeting to each assign a number from one to ten to a particular project activity according to their view of its effectiveness. This can stimulate discussion among the wider group on project progress. By going further to assign each element a value in relationship to the others, you are then prioritising through identifying the relative weight, strength or value of each.

### Method 31 Social Mapping or Well-Being Ranking

**Purpose:**

To identify households on the basis of predefined indicators related to socio-economic conditions. This method concentrates on a relative ranking of people's socio-economic conditions (e.g., relatively well-off and worse-off), rather than making an absolute assessment. From an M&E perspective, this method can help assess which households are benefiting from the project and if these belong to the intended target group.

**How to:**

1. First, clarify what "household" means locally, since local definitions of terms like "household", "compound" or "extended family" vary considerably. Then discuss what constitutes well-being locally. Ask if there are differences between households and what types of differences these are. This usually leads to some discussions about broad groups or levels of well-being in the community.

**Option 1. Social mapping**

a. Prepare a base map on which all the households of the area being analysed are located (e.g., a village, a neighbourhood, a rural zone, etc.).

b. Ask the participants to code each household according to its level of well-being in comparison to others. Each level can be given its own symbol or colour code. Make sure you crosscheck the coding of each household by ensuring there is consensus about the code. In this way, a base map can be made in which households are clustered according to different rankings of well-being. Include a legend on the map that explains the symbols and codes.

c. Now focus on the indicators in which you are interested (e.g., "school attendance of children", "involved in a certain project activity", "member of a micro-credit group"). Code each household according to its status.

d. The base map can then be used to monitor the well-being of each household from year to year and to relate the households to changes introduced by a project. This makes it possible to examine whether there are any impacts occurring on well-being or other socio-economic indicators in focus and, if so, how the impacts may affect different social groups.

**Option 2. Well-being ranking with cards**<sup>17</sup>

a. Each household name is written on a card.

b. The cards are then sorted into different piles of similarly ranked households. You start with any two households, asking people to compare them in terms of which is better off than the other. If they have different levels of well-being, then they are placed in different piles of cards. If they are more or less the same, they go in one pile.

c. One by one, other households are compared to the first two. This can lead to the identification of new levels if they are worse-off or better-off than the households already classified. They may be identified as having a similar level of well-being of an existing group of households and thus go to an existing pile. Number each pile per informant, so that you know in which pile each household was placed.

d. This needs to be repeated three times and then an average score calculated, to remove interviewee knowledge biases. Calculations are done as follows. Write the score for each household for each informant as follows (with Pile 1 being the best off pile):

$$\frac{\text{pile number of households} \times 100}{\text{total number of piles}}$$

Compute average scores for each household as the total of its scores divided by the number of its scores. Households must have two scores to be included, so if only one person knows how to place a household there is insufficient information on them to be included. Write the average score for each household in large numbers on index cards. Put the index cards in order from lowest to highest average score (best off to worst off). Divide the ranked cards into groups where there is a clear cluster of scores. It is these groups that you can then use for your sample.

**Tips on use:**

Social mapping can provide an overview of any socio-economic aspects, such as leadership, professions, skills and experiences in a community, as well as its well-being. However, well-being ranking focuses on a community's perceptions of well-being, such as status, size of land and family, income, etc. In both cases, with your base map and your clustered households, you can focus on any monitoring issue such as "access of poor/middle/higher-income households to water supply and sanitation facilities".

Both methods are also useful for a purpose or quota sampling procedure, by making a selection from different well-being classes.

By discussing what well-being means at each monitoring event, it is also possible to track changes in the criteria of well-being to see if people's aspirations are shifting.

This method is most useful when ranking in groups of a limited size. You can use it in larger communities, focusing on neighbourhood-specific rankings, but it will be difficult to compare results between sections.

<sup>17</sup> Grandin, B.E. 1988. *Wealth Ranking in Smallholder Communities: A field manual*. London: Intermediate Technology Publications, Ltd.

Table D-4. Example of a well-being ranking exercise in an IFAD-supported project in a village in Laos

<i>RICH = 2 people</i>	<i>MEDIUM = 33</i>	<i>POOR = 18</i>	<i>VERY POOR = 7</i>
Enough rice for 12 months	Enough rice for 8-12 months	Enough rice for 3-6 months	Enough rice for 3 months
Large amount of paddy land in valley (up to 5 ha)	Little paddy land (up to 0.5 ha with 2-3 ha upland cultivation)	Small extent of land to cultivate in upland (0.5-1.5 ha)	Little upland rice cultivation (less than 0.5 ha)
More than 10-15 cows and buffaloes and 50-60 poultry Elephant or hand tractor Enough bullock power	Around 5-10 cows and buffaloes, 5 pigs and 20-30 poultry Sometimes elephant Bullocks for land preparation	Less than 2 cows and buffaloes, 1 or 2 pigs, and 15 chickens Sometimes an elephant (inherited) Usually no bullocks for land preparation	A few chickens, occasionally pigs No plough/bullocks for land preparation
Permanent brick house with field roof	Wooden house with galvanised iron or aluminium sheet roof	Bamboo house with thatched roof	Poor condition bamboo house with thatch
Owens two- or four-wheel vehicle	Owens two-wheel vehicle	Sometimes owns bicycle	Has no assets
Sometimes rice mills	Occasional rice mill	No rice mill	No rice mill
Able to hire labour	Does not work as labour and occasionally hires labour	Cannot hire labour	Mainly sells labour
Has no deficit	Makes up deficit by sale of livestock and business. Occasionally goes to forest	Always has deficit Depends on forest and sale of labour	Always depends on selling labour and forest
Good health	Occasional health problems	Sick often	Poor health

## Method 32 Matrix Scoring

### Purpose:

To make a relative comparison between different options of a specific issue or solutions to a problem, and to make a detailed analysis of how much and why people prefer one option above the other. Matrix scoring shows how well options meet predefined criteria. From an M&E perspective, this method can be used to understand people's opinions on, for example, different service providers, on different types of project activities that are aiming to reduce a problem, on different technologies (such as seed varieties, water sources).

### How to:

1. First be clear about what you are comparing and place these options/issues in a row, along a horizontal axis. The more there are, the longer the scoring will take so, if necessary, prioritise items to be scored.
2. The group next discusses the advantages and disadvantages of each item/ solution/issue to generate the criteria that will be used to compare each of the options. Each criterion is placed along the vertical axis to create a matrix. If you find that the number of criteria is very large, either ensure you have enough time to finish the discussion or ask the group to prioritise key criteria on which to focus. Ensure that the criteria are all worded in the same way, all either in positive terms or in negative terms. Mixing the two types of criteria will cause confusion in the next stage.
3. Then start the scoring. The items are compared for each criterion. Decide how much will be the maximum score. There are different ways to establish the number of points to use for scoring. You can allocate a maximum of points per box – for example, 15 as “the best” – or specify a total number of points to allocate per criterion across the boxes, for instance, 25. Participants can use stones, seeds or numbers for the scoring, with more stones indicating higher scores and therefore better ability to

fulfil that criterion. Usually, consensus is reached through discussion. Avoid individual voting in the matrix scoring exercise as this defeats the purpose of stimulating discussion to reach consensus on preferred options and understand the reasons for preference.

*Table D-5. Transfer of tasks and responsibilities matrix*<sup>18</sup>

Tasks	Past (1995)			Present (2001)			Future (2005)		
	Village Group	Local NGO	Local Govt	Village Group	Local NGO	Local Govt	Village Group	Local NGO	Local Govt
Fundraising		XXXXX XXXXX			XXXXX XXXXXX			XXXXX XXXXX	
Choosing trainers		XXXXX X	XXXX		XXXXX X	XXXX	XXXXX	XXX	XX
Scheduling trainings		XXXXX XXXXX		XXX	XXXXX XX		XXXXX XXXXX		
Follow-up		XXXXX XXXXX			XXXXX XXXXX		XXXXX	XXXXX	
Organising participants	XXXXX XXX	XX		XXXXX XXX	XX		XXXXX XXXXX		
Designing training tools		XXXXX X	XXXX		XXXXX XXX	XX	XXX	XXXXX	XX
Evaluation	XXXXX		XXXXX	XXXXX		XXXXX	XXXXX	XXX	XX
Totals	13	44	13	16	43	11	38	26	6
Percentages	18.5%	63%	18.5%	23%	61%	16%	54%	37%	9%
Per cent change from 1995	0	0	0	+4.5%	-2%	-2.5%	+35%	-26%	-9.5%

#### **Tips on use:**

Besides the resulting matrix, one of the greatest values of this method comes from the discussions that are provoked as participants come to a decision about the final score of each option (as well as on settling on the criteria for scoring). In the discussion, the reasons for preferences and rejection of options emerge.

Matrix scoring can also be useful to identify key indicators that can then be monitored regularly using other methods. The indicators are selected from among the criteria (i.e., the advantages and disadvantages of each option) that have been identified.

#### **Variations on this method:**

*Variation A. Transfer of tasks and responsibilities matrix* (see Table D-5 above for an example)

This application helps identify the degree to which tasks and responsibilities have been transferred from a project to the community group(s). It can help identify indicators for this transfer of responsibility (i.e., capacity-building) and is essential for clarifying the phasing-out strategy.

<sup>18</sup> Gubbels and Koss 2000, 155, see Further Reading.

**How to:**

1. For each programme sector addressed by the project, ask participants to name all the major tasks and responsibilities necessary for running an effective and viable programme.
2. Write each response (on cards if you like) on the vertical axis of a matrix.
3. Have participants name all the major actors or interest groups who are directly involved in running the project (donors, village group, government extension agents, technical support, etc.). Write these actors in along the top horizontal axis of the matrix.
4. For each task, ask participants to distribute ten beans (or stones) among the various actors according to how much responsibility they have for a task, with ten representing total responsibility.
5. Repeat the process to reflect the situation in the recent past. Decide together on the time period for assessing change (e.g., five years). Move the task cards to the left in order to create space for another matrix section.
6. Duplicate the actor cards and place them in the same order at the top of the second section of the matrix (see diagram).
7. Have participants place the beans under each actor to reflect the past situation.
8. If time permits, repeat the process to allow participants to envision what the situation will be like in the future. Create a third section on the matrix and repeat the above process, distributing the beans according to what hopes are for future distribution of responsibility.

*Variation B. Community-level support/self-reliance matrix*

This method helps with reflection on community self-reliance upon phasing-out. It can assess the effectiveness of the project's strategy to promote self-reliance and to strengthen the capacities of the community groups with which it works. It fosters understanding of the connection between creating self-reliance and the ability of the project to achieve a wider impact.

**How to:**

1. On cards, write the names of the different stakeholder groups involved in a project and the date they started working with the project.
2. On each card, write using symbols or letters to represent which project activities they undertake (e.g. management training, loan disbursement in the case of credit, etc.).
3. Sort the cards into one of three categories indicating the level of support each has received (high, medium, low). But make sure you are clear about what you mean by "support" (e.g., number of support visits, training or funding provided, etc.).
4. Introduce the concept of self-reliance and ask the participants to list characteristics of group "self-reliance". For example: able to cover core operating costs, able to plan, monitor and evaluate programmes, able to access external resources, able to form partnerships, able to mobilise group members for collective action, able to implement development programmes, able to elect representative leaders, etc.
5. Write these characteristics down on another set of cards (different colour, one characteristic per card).
6. Then identify criteria for distinguishing between high, medium and low levels of self-reliance at this time. Ask participants to sort the cards into these three categories.

7. On the vertical axis of a matrix, label three rows: “high”, “medium” and “low” support; on the horizontal axis, designate three columns as “high”, “medium” and “low” self-reliance.

8. Place the cards in the appropriate boxes in the matrix.

9. Have a discussion on why groups fit into one category or another, whether/how the project can support the development of self-reliance better, what will happen when the project phases out, etc.

## Method 33 Relative Scales or Ladders

### **Purpose:**

To make a relative qualitative comparison of “before” and “after” situations related to specific indicators. This method can result in a diagram (as in a ladder drawn with indicators represented by symbols) or as written questions/indicators if they are difficult to depict. From an M&E perspective, this method can be used to assess qualitative aspects related to, for example, women’s self-esteem, the participation of marginalised groups or capacity-strengthening, which are otherwise hard to assess.

### **How to:**

1. First, the group must choose its indicators. These can be formulated either as statements or questions.

2. There are two ways to compare changes in these indicators over time.

**a. The visual way, using a ladder for each indicator, where each rung - from bottom to top - represents an improvement:**

- At the first monitoring event, an assessment is made of where stakeholders think they stood before the intervention started (written to the left of the ladder at the rung that best represents the level). Then they should indicate on the right side of the ladder – at the appropriate rung – where they think their level is now as a result of the project or activity.
- At each monitoring event, a new assessment is made of where the activity stands with respect to the rungs of the ladder for each indicator being monitored.
- This forms the basis for discussing why changes have occurred and what action(s) might be required to reinforce positive changes or limit deterioration. The ladders can be used for individual stakeholders’ assessments of change and then discussed collectively, or the group can discuss the ladders until a consensus is reached about the status of the changes being monitored.
- See Figure D-6 for an example of the result of a ladder exercise.

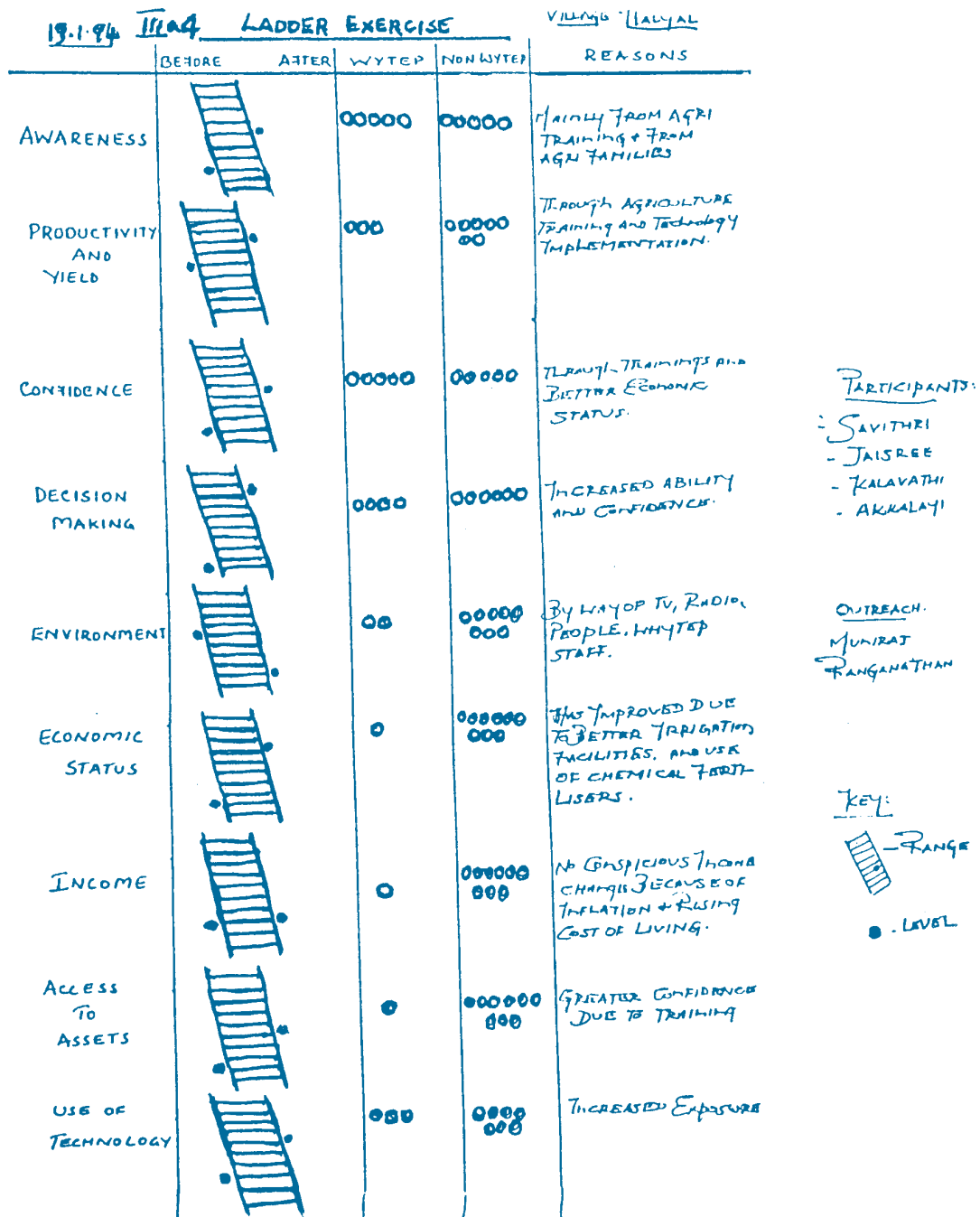
**b. Using a sliding scale to measure variation:**

- Start by coming up with a set of statements about an indicator. For example, if a group of farmers is interested in identifying “efficiency of meetings” as an indicator of the group’s success, then group members can revisit this indicator, for example, every 6 to 12 meetings, using the following points system.<sup>19</sup>
  - 3 points – Our meetings are always efficient: we use our time well, make clear decisions, and our decisions are implemented.
  - 2 points – Our meetings are usually efficient: we use our time well, make decisions that are usually clear, and our decisions are often implemented.
  - 1 point – Our meetings are sometimes efficient: we sometimes manage to avoid unnecessary discussion, and can make decisions but they are not always clear to everyone, and our decisions are sometimes implemented.

<sup>19</sup> Based on Uphoff, N. 1991. “A Field Methodology for Participatory Self- Evaluation”. *Community Development Journal* 26 (4).

- 0 points – Our meetings are never efficient: we always talk without making any decisions and therefore are not implementing changes.
- At each monitoring event, see how the answers to the same set of questions vary over time, for example on a sliding scale of 1 to 5 (or 0 to 3 in the example above).
- Ask the group to reach consensus or for each person to vote, for example, choosing between: “strongly agree”, “agree”, “don’t know”, “disagree” and “strongly disagree” (or “most satisfactory”, “satisfactory”, “unsatisfactory” and “very unsatisfactory”).
- They can also choose between a range of points or a range of more or less happy looking faces.

Figure D-6. The ladder exercise undertaken by women to assess the impact of a training programme <sup>20</sup>



<sup>20</sup> DANIDA. 1994. *Impact Assessment Women and Youth Training/Extension Program (WYTEP) India*. Copenhagen: Danish Ministry of Foreign Affairs. p. 90.



3. Final numbers or positions on the ladder are not the main outcome of this method. The most important parts are the discussion that occurs as group members reach agreement on whether the general direction of change is positive or negative and, of course, the analysis of why changes in the numbers/positions might be occurring.

**Tips on use:**

While this method also involves ranking, it differs from matrix scoring (Method 32) in that it only looks at one indicator at a time and gives it a rank by comparing past and present conditions relating to that single indicator.

## Method 34 Ranking and Pocket Charts

**Purpose:**

To assess changes or patterns in people's general opinions about a list of options, through a single overall ranking process. From an M&E perspective, this method is valuable to assess people's opinions on a list of comparable options, for example, related to decision making in a local organisation or personal practices in relation to any topic, such as land management or personal hygiene (see Box D-14).

**How to:**

1. Make a complete list of all the options for the topic being monitored (maize varieties, sources of credit, erosion control measures, etc.).
2. When conducted with a group, you have a couple options for the ranking:
  - One option is that each participant can make his/her own ranked list and then an average ranking can be calculated for each option, to arrive at a collective ranked list.
  - A second option is to have the group reach consensus on the relative ranks, through group discussion, and make one collective ranking.

The second option will clearly provoke more discussion than the first and be open for domination from the more assertive participants.

A third, more visual and more general option is to ask people to give a relative weight or "value" to each option using a number of stones, a pile of sand or a segment of a pie chart. This approach clearly generates only a very general idea of preferences and priorities, but in some cases it is sufficiently accurate. If pie charts are used to gather the actual data, then they will usually only represent very approximate perceptions of people's rankings. However, a pie chart can also be used to record precise findings as segments of a pie chart can represent exact percentages based on data that have been gathered through other means.

A fourth option involves a pocket chart, which is a chart that has a pocket for each option. First identify the different options you want to assess. Write or symbolise each option at the top of a column. If you want to monitor the rate of occurrence, for example, of certain health or land-use practices, place three or more rows (each with a pocket) below the columns, headed by "always", "sometimes" and "never". In this case, ask each person to place a vote per practice/habit in the right pocket. If you want to monitor, for instance, the participation of different groups in decision making, these groups are symbolised at the top. Then decide which aspects of decision making you want to monitor. These aspects become the vertical axis of the matrix, the column. Each cell in the chart has a pocket in which votes are cast.

3. If privacy is necessary, collect votes by turning the pocket chart around and having people come up one by one to cast their vote with a piece of paper or a stone or seed.
4. Count the votes and discuss the outcome together.
5. If you want to have analysis differentiated by gender or another categorisation, use different codes on the voting cards for the women and the men.
6. Alternatively, the group can discuss each question until they reach consensus.
7. A new ranking is made at each monitoring event and compared with previous rankings. Use the comparison with the results from previous events to discuss the changes and their possible causes, and what future action or adjustment of the activity is required.
8. A variation on this method is known as “one hundred seeds”. It helps an individual or group indicate an approximate percentage distribution, as represented visually in a pie chart. Give the person or group 100 seeds, beans or stones. These represent the sum total of the topic being discussed (e.g., sources of income, main expenditure items, types of health services, sources of fuel, etc.). First discuss the topic so that you list all the items, for example, all the sources of income or all the types of health services used. The person or group then divides the seeds across the items to indicate the relative distribution. For example, how much of the total (100%) of income comes from each income source, and how much of all health needs (100%) are covered per health service? These percentages can be shown as a pie chart, if desired.

**Tips on use:**

This method is useful particularly in situations where the subject being assessed is sensitive and people are inhibited about stating their views publicly.

This method is similar to matrix scoring (Method 32) and relative scales or ladders (Method 33). However, the matrix compares how a range of different options rate in terms of many criteria and the scales assess one option at a time, whereas ranking and pocket charts involve making a single overall ranking of a list of options. While matrix scoring is ideal for selecting the best among various options, from a monitoring perspective, a ranking exercise helps assess changes in people’s general opinions about options.

A pocket chart is more complex than a simple ranking as it is used to make a series of overall rankings. The pocket chart is also more accurate since it allows assessment of the percentage of people with certain opinions. Filling in a pocket chart is usually done on an individual basis and may therefore provoke less discussion than matrix scoring. However, analysing the results afterwards with the group of participants will encourage collective reflection and will help give meaning to the data.

*Box D-14. Example from the World Bank’s Water and Sanitation Programme* <sup>21</sup>

For hygiene behaviour patterns in a water and sanitation programme, people are asked to provide information (behind a voting screen) on where they defecate, using a range of pictures to depict sites used on the horizontal axis and pictures of different household members (women, men, girls, boys, toddlers and babies) along the vertical axis. This can be carried out “before” and “after” a sanitation project has been introduced to assess if personal hygiene has changed and how.

<sup>21</sup> Dayal, R., C.van Wijk and N. Mukherjee. 2000. *Methodology for Participatory Assessment with Communities, Institutions and Policy Makers*. Washington, DC: The World Bank.



### Further Reading

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### List of Booklets in the Guide

Section 1. Introducing the M&E Guide	<b>Annex A.</b> Glossary of M&E Concepts and Terms
Section 2. Using M&E to Manage for Impact	<b>Annex B.</b> Annotated Example of a Project Logframe Matrix and Logframe Explanation (relates to Section 3)
Section 3. Linking Project Design, Annual Planning and M&E	<b>Annex C.</b> Annotated Example of an M&E Matrix (relates to Section 5)
Section 4. Setting up the M&E System	<b>Annex D.</b> Methods for Monitoring and Evaluation (relates to Sections 3, 6 and 8)
Section 5. Deciding What to Monitor and Evaluate	<b>Annex E.</b> Sample Job Descriptions and Terms of Reference for Key M&E Tasks (relates to Section 7)
Section 6. Gathering, Managing and Communicating Information	
Section 7. Putting in Place the Necessary Capacities and Conditions	
Section 8. Reflecting Critically to Improve Action	



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