Introduction

0.1 Background to the guidelines

This guide provides an introduction of the concept of M&E. At the same time it gives practical tools and examples how to exercise and maintain a M&E system. As M&E is so clearly linked with general project planning principles, these are elaborated upon as well. M&E standards in this guidelines are equally applicable to the various development efforts in the district, supported by different donors.

0.2 Objectives of the guidelines

- Improve M&E in DRDP supported development programs
- Provide a useful technical resource for planning and maintaining a M&E systems
- Provide a basis for a comprehensive District-based M&E system, incorporating all district development initiatives as implemented by the various agencies and supported by various donors
- Strengthen skills in information systems for staff involved in development programs

0.3 Beneficiaries

This guideline is designed for all staff participating in the development process of the district. Everyone in these categories uses information about their projects, and most are also contributing in some capacity to information gathering and analysis. Other parties involved with the development process at large may also find these guidelines useful.

0.4 How to use the guideline

The chapters in these guidelines are arranged in a series that moves from planning to implementation, analysis and application. Readers with relatively little experience in planning, research or information management may find it most useful to read the chapters one after another as they are arranged. More experienced readers are also encouraged to skim all the chapters to understand the linkages to any specific topics they are pursuing in more depth.

The body of the guidelines starts with the importance of information to development interventions (Chapter 1), identifies users of information about development projects and their needs (Chapters 2), and discusses some of the common strengths and weaknesses of information gathering, analysis and use in development projects, including DRDP projects (Chapter 3). Project planning elements and the key concepts of monitoring and evaluation are reviewed in Chapter 4.

Chapter 5 prepares the way for creating specific monitoring and evaluation plans for existing projects. The following section focuses on the crucial issue of assessing project progress and achievement, i.e., indicators (Chapter 6). Sources of indicator information and ways to select smaller samples that represent the larger target population and ways to

select smaller samples that represent the larger target population of a project are discussed in Chapter 7 and Chapter 8. The next chapter reviews methods to gather such information (Chapter 9).

The important steps of analyzing and making sense of the information that has been collected are dealt with in Chapter 10, followed by presentation of findings and ensuring action in Chapter 11. The final chapter in the body of the text is concerned with ways to institutionalize information management (M&E) plans within Development projects (Chapter 12).

The annex section of the guideline also includes some very useful reference material. First, there is a glossary of key terms and concepts (Annex 1), followed by a set of suggestions for some key M&E documents (Annex 2). Annex 3 is comprised of short presentations about a variety of techniques for data collection and analysis. Annex 4 is a useful table comparing the preferred terms used for similar planning concepts used in preparing the guidelines and various (other) donors (e.g., Danida, GTZ, IFAD etc.). Annex 5 serves as a guide for readers wishing to pursue topics in even greater detail.

CHAPTER 1

Why is information important to projects?

1.1 Introduction

Projects, and the people involved with them, need to have accurate and timely information to assess the value of what they are doing. The following list shows some of the key reasons why people need information about projects:

Information Needs

- **Achievement –** what has been achieved? How do we know that the project caused the results?
- **Achievement progress –** are the objectives being met? Is the project doing what the plans said it would do?
- **Monitoring –** is the project well-managed?
- **Identifying strengths and weaknesses –** where does the Project need improvement and how can it be done? Are The original objectives still appropriate?
- **Checking effectiveness –** what difference has the project made? Can the impact be improved?
- **Cost-effectiveness –** were the costs reasonable?
- **Sharing experiences –** can we help to prevent similar mistakes or to encourage positive approaches?

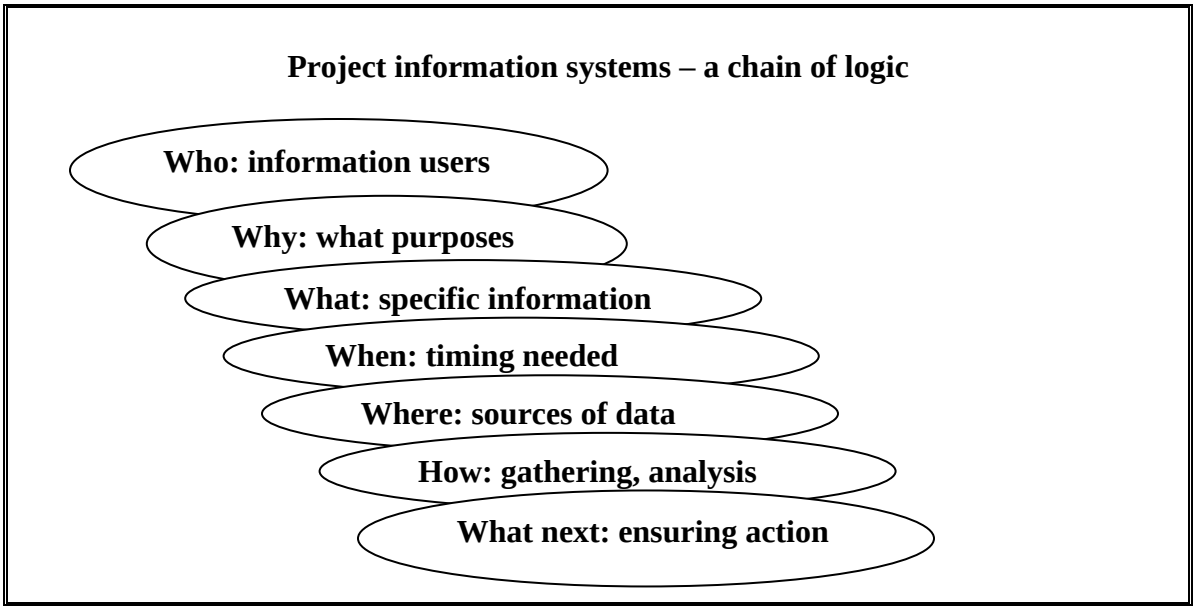
Adapted from: Feuerstein, 1986

The collection of information in projects, in combination with its analysis and use, is collectively referred to as the ***'Monitoring and Evaluation' (M&E)*** component (or system) of a project.

When considering the M&E system, it is important to reflect on the purpose of Monitoring and Evaluation as:

> ***The collection and management of data to be analyzed and used for the regular and periodic assessment of a project's relevance, performance, efficiency, and impact in the context of its stated objectives.***

The M&E system is a form of 'information system', which is a broad term for information selection, gathering, analysis, and use. It can be described as a logical chain of linked ideas starting (and continuing) with information users.



Information users include persons who are influenced by projects as well as those who influence the project, e.g. target communities, project staff, donors. The major uses of the information include informing decisions in the project and sharing information with other persons or organizations. Specific information is needed in order to ensure that the project is relevant, efficient and effective within its stated objectives.

If accurate information is planned, but it is not feasible to collect it or it can't be collected in time, then the project may get off track, i.e., it can become ineffective or irrelevant to local priorities. If the information is gathered to answer such needs, but it is not analyzed, then it cannot be used by the project. Finally, if the information is collected and analyzed but not available to the persons who need it, critical decisions about the project may not be made or may be poorly taken.

1.2 The bottom line

Projects need logical information systems that maintain and strengthen the project, as well as meeting the needs of many other kinds of information users, including the target population.

CHAPTER 2

Who needs information about Development Projects?

2.1 Information users

One of the most important first steps in developing an information system is to identify who are the users of project-related information. Once users are identified, it is then possible and necessary to determine what kind of information they need and for purposes, what questions or concerns about the information users have and what constitutes quality information.

Many people and organizations are interested in each and every Development project such as then DRDP. All of these people can be called '*information users'*. Some persons will be interested in the achievements and lessons learned in a project, e.g. other actors (e.g. donors) working with similar target populations in the same or another district. Other persons may want information so that they can participate in various decisions related to the project. The latter group are often referred to as *'stakeholders',* or potential 'owners' of the project. Project stakeholders include all persons or groups who have the capacity to make or influence decisions that have an impact on project design or implementation.

Ultimately, all of the stakeholders may be involved in the implementation phase of a project, therefore, they should be consulted and informed regularly about project planning and developments. Involving potential users (especially project management, staff, and target population) in the design of M&E will not only help them clarify their information requirements, but also ensure their support for the M&E system and utilization of its findings.

Key categories of people and organizations who may be interested in obtaining information about Development projects, including DRDP include:

Community

Sometimes called 'clients' or 'beneficiaries' or 'target population': may be individual community members, families, community groups, or whole villages. Specific categories of importance include community leaders, target groups in the community, and the community at large.

Local Organization	Includes Community-based Organizations (CBOs), and Non-Governmental Organizations (NGOs). CBOs are Potential local collaborators: e.g., mutual assistance Societies, cultivating groups, and local associations. NGOs, whether local or international, have shared and potentially overlapping interests; they are also potential collaborators with supplemental resources.
Local Government	The co-ordinating and implementing agent, local counterparts, policy-makers and planners; includes district officials, officials in line Ministries, Local councillors and politicians, village and Ward Executive Officers.
Central Government	The supporting government at the regional and central level; RAS, regional planning office and the Prime ministry Office.
Donor	Funders, external support agencies, such as: Danida, IDA, World Bank, German Government, the Netherlands Government. For the Netherlands funded DRDP, the Regional Coordinating Office (RECO) and the district based Development Advisor (DDA) represent the donor.

Other categories of persons or organizations which may be considered include:

- **Academicians, researchers, consultants:** shared professional interests, potential for further analysis and alternative applications of project information
- **Media, journalists:** dissemination of significant results; showing transparency and public accountability.

What kinds of information are needed?

2.2 Content Concerns

Among the many different people are interested and actively involved in project M&E are the project target population, staff responsible for routine collection and management of data (e.g., on finances and outputs), internal and external evaluation teams responsible for periodic assessments (e.g., of project performance and progress). The differences between these groups will be their:

- Perceptions of the purpose of M&E
- Reasons for collecting data
- Interests in the information generated as a result of M&E

Another group of people who influence the M&E system are the various specialists involved within the project, e.g. economists, ecologists, agronomists, sociologists, health workers, etc. often represented in external consultants. Many of their information needs (and what information they think the project needs) will be largely determined by their professional training (e.g., economists who tend to search for information relating to income). As a result, although their experience and training can bring useful perspectives to the M&E system, these groups may also introduce an element of professional 'bias'. Caution is needed to ensure that the views of these professionals do not over-influence the design of the M&E system!

2.3 Quality concerns

Information users have many concerns about the quality of information they are seeking. Some key criteria are shown in the following box.

Quality of Information

- **Accuracy,** validity: does the information show the true situation?
- **Relevance:** is the information relevant to user interests?
- **Timeliness:** is the information available in time to make necessary decisions?
- **Credibility:** is the information believable?
- **Attribution:** are results due to the project or to something else? (see Chapter 4)
- **Significance:** is the information important? (See Chapter 4)
- **Representativeness:** does the information represent only the target group, or also the wider population? (see Chapter 7)

2.4 Addressing Issues of Quality

For the first four quality concerns it is good to suggest strategies for ensuring that data is of good quality. Below are the strategies identified for each of these four concerns:

Accuracy ***How can we ensure information is accurate and reliable?***

- Plan in advance; be specific with regard to information needed and processes for acquiring it
- Simplify information needs and systems for its collection and analysis; be selective with regard to information collected, samples, methods, etc.
- Develop guidelines and standardize how to collect and analyze information
- Use, where possible, more than one method/source for the same data item (triangulate information sources)
- Encourage commitment to collecting accurate information
- If appropriate, acquire and use modern equipment, e.g., computers (but remember 'GIGO': garbage in, garbage out)

Relevance

How can we ensure information is relevant to user's needs?

- 'Relevance' differs for different information users.
- Gain the perspective of project target populations by engaging their participation in information collection and analysis
- Avoid being donor-driven, while meeting donor requirements
- Be selective and prioritize information needs; know in advance who needs what information, and how it will be used.
- Ensure the project can analyze information; and present results in an accessible form for the various users/audiences (i.e., don't use a written report with illiterate community members or a 200 page report with a busy Ministry official)

Timeliness

How can we ensure information is available in time?

- Use simple tools for collection and analysis
- Plan in advance: consult information providers; seek commitment from partners/counterparts/communities
- Create a schedule with deadlines; delegate and share responsibilities related to information collection, analysis and presentation; sensitize participants about the need for timeliness

Credibility

How can we promote the credibility of information?

- Design information gathering methods carefully; be consistent (by using repeatable methods which can show trends); be objective when gathering, analyzing and interpreting information

- Be transparent about processes used; explain methods used to obtain data and draw conclusions (including assumptions, statistical links between sources; methods of collection, analysis and results)
- Address and discuss attribution issues (whether results can be claimed by the project)
- Maintain your personal and organizational reputation

Why is the information needed? For what purposes? What decisions or actions will be affected?

2.5 Purposes of information

The two main uses for information produced by or about projects are:

- informing people who have to make decisions (whether inside or outside of the project)
- description for persons who want to learn from the project (including achievements, constraints and failures).

Some common examples of these two purposes include the following:

- to monitor ***physical and financial progress*** so that decisions can be made (or revised) about spending and resource distribution that will keep the project functioning and within its budget.
- To monitor ***distribution of project benefits*** *(*e.g., some people may benefit more than others!). This information is useful to groups wanting to monitor project equity and accountability.
- To examine the ***responses of the target population*** to the services and inputs being provided by the project; such information can help ensure acceptability and usefulness of project activities.
- To study ***specific implementation problems*** facing a project so that the cause(s) can be identified and practical solutions recommended.
- To determine what the ***impact on the target population*** *is*, especially in relation to the project objectives as a direct result of the project (e.g. quality of life, living standards: income, health, empowerment, relationship to environment, etc.).Where project benefits are identifiable, impact information can be useful for advocacy and justification for continuity.
- To determine ***compliance and accountability***, e.g. in meeting donor requirements.

2.6 Purposes, Needs and Concerns of Six Key Information Users

The charts on the following two pages summarize information purposes, needs and concerns for the six of the most significant users of information related to Development programs in the district, including KDRDP.

Table 1: Purpose, Information Needed and Concerns About Information by Key Information Users

USERS	PURPOSE	KIND OF INFORMATION	CONCERN
Community			
Leaders: Opinion, Cultural, and Religious	• To clear suspicion; for deciding whether to support activities • For planning and mobilization of members • To integrate project activities into Village/Ward activities • To understand project within cultural/social/religious norms • To determine own contributions	• Aims/objectives, Targets, Activities • Resources, support from project, Duration • Effects and impact on community	• Simplicity, Consistency, Accuracy, Timeliness
Target group: e.g., women, farmers, youth, elderly etc.	• To know benefits of project • To know what contributions have been made • To gain feedback from the project • To know support expected from participants • To determine level of participation	• Aims/objectives, Targets, Activities • Resources, support from project, Duration • Effect and impact on target group	• Simplicity, Consistency, Accuracy, Timeliness
General community	• Why not me? To clear suspicion • To know expected benefits and expected contributions • For feedbac • To determine own contributions	• Aims/objectives, Targets, Activities • Resources, support from project, Duration • Effect and impact on community	• Simplicity, Consistency, Accuracy, Timeliness
Local Organizations			
CBOs	• For share planning and mobilization of members • To integrate project activities into group's activities	• Aims/objectives, Targets, Activities • Resources, support from project, Duration • Effect and impact on community	• Simplicity, Consistency, Accuracy, Timeliness
NGOs	• For shared planning and collaborative efforts • To learn from project activities and experiences	• Annual plans • Status reports, Evaluation reports	• **Ti**meliness, Relevance
Local Government			
District staff	• Planning, Co-ordination, management • Allocation of time, personnel, resources • Monitoring budgets and expenditures • Program monitoring • What to expect from project; what expected by project • Impact on beneficiaries	• Annual plans • Quarterly Financial reports • ½ yearly progress reports • Status reports, Evaluation reports • Project assessment reports • SWOT analysis • PRA reports • Impact Analysis	• Timeliness, Relevance, Completeness, Accuracy, Accountability, Validity, Relevance, Representativeness

USERS	PURPOSE	KIND OF INFORMATION	CONCERN
Local Government (Cont.)			
Politicians, Standing Committees (Plan.&Fin., Educ, Water, etc.)	• To monitor budgets and expenditures, tracking expenditures • To monitor Executive Officers • Staff performance appraisal • To identify constraints, obstacles, gaps • To represent constituencies • Advocacy	• Financial statements/reports • Status reports • Output reports • Impact reports on beneficiary needs and perceptions	• Accuracy, Objectivity, Feasibility, Timeliness, Validity, Relevance, Representativeness
Central Government			
Regional (RAS, RPLO, RMO etc.)	• Accountability, • General program monitoring • Monitor executive (District) Staff • Represent Central Government	• Regular project information • Status reports	• Relevance, Accuracy, Timeliness
Central (PM-Office etc.)	• Overall Policy Implementation, monitoring & Development • Fundraising, identifying areas of sectoral support	• Consolidated project reports	• Relevance, Accuracy, Timeliness
Donors			
Bilateral/Multi-lateral donors	• Program identification and support • Monitoring & Evaluation • Resource allocation	• Donor specific	• Relevance, Accuracy, Timeliness
DDA/RECO/RNE (KDRDP)	• Advice/follow-up on Planning, Co-ordination, management of project • Allocation resources • Monitoring budgets and expenditures • Program Monitoring & Advice • Monitoring participation beneficiaries • Assessment Impact on beneficiaries	• Annual plans • Annual budget • Quarterly budget expenditures • ½ yearly progress report • ½ yearly budget revision	• Timeliness, Relevance, Completeness, Accuracy, Accountability, Validity, Relevance, Representativeness

CHAPTER 3

What are some of the common Weaknesses of Information gathering, Analysis and use in Development projects?

3.1 Poor Project design

Sometimes projects are too hastily developed in response to available funds, omitting a thorough analysis of the community needs and situation. The donors themselves are sometimes relatively unsophisticated about M&E, either lacking interest in proper planning for information management in a project or regarding M&E only as a tool for accountability and not a part of on-going project design.

3.2 Human Resource development needs

The available staff may be unqualified for tasks related to information management, in part because there is relatively little local opportunity for practical training/learning in this field. Coupled with this issue is staff apprehension about the 'difficulty' of monitoring and evaluation, which is not helped by the lack of common agreement about standards and methods among professionals. These factors sometimes (too often, in fact) lead to reliance on consultants to design systems and outsiders to evaluate projects. Clearly, a problem related to this issue is:

- **Inadequate skills for data analysis and weak data management at project level:** Projects often lack data analysis skills so collected information sometimes ends up unanalyzed and unused. Lacking training, staff shy away from monitoring as something 'mystical' rather than an everyday activity. With inadequate skills in data management, there are clear concerns about the quality, content, dissemination and utilization of information collected. There is need for tools which staff are capable of learning and utilizing.

3.3 Quantitative bias

A frequent complaint by project staff and other information users is the quantitative bias of project information systems (often requested by donors!). One contributing factor to this weakness is an organizational trend toward almost exclusive use of log frames (see Chapter 4). The nature of information requested in the typical log frame is numerical. Thus, over-dependence on log frames can result in over-reliance on quantitative information that leaves out explanations and the actual nature of work what is going on.

3.4 Donor driven

Many staff tend to see M&E as something that is necessary to please donors, rather than as important for the project and for their own work. Donor schedules an demands can mean that M&E work, such as conducting and interpreting a baseline, may be rushed and

not undertaken carefully. Without a baseline, subsequent demonstration of project effects and target population change is generally very difficult and unconvincing.

3.5 Low priority for information systems

Persons expected to carry out data collection are frequently expected to take this role on as an 'additional' task, to be worked in and around the more 'important' service-oriented tasks of the project interventions. Associated problems in this respect are:

- **Involvement limited to collection:**
  Many staff (or beneficiaries!) do not understand why they have to collect the information, i.e., they have no sense of how the information contributes to or can even be used in their own work. This problem is most common when staff members (or beneficiaries) do not participate in the planning for information gathering or the analysis of the data collected.
- **Poor feedback to the data collection (and respondent) levels**
  Failure of field staff to get feedback about information that has been collected contributes to low morale and a perception that such an activity is not as important as other duties. Failure to give feedback to the community level respondents also convinces them that the data collection exercise was a waste of time (e.g. PRA exercise without proper follow-up), and breeds reluctance or even resentment toward any repetitions in the future or participation in development programs.
- **No standard system:**
  Often there is no standard information system to guide developement projects on M&E. As a result, different projects have inconsistent reporting systems, non-similar data management systems, and widely varying approaches to dissemination. In addition, information is often collected and reports made in response to isolated needs, rather than as an integrated part of daily project activities.

CHAPTER 4

What key concepts are Fundamental to understanding and planning for information Management?

4.1 Project definition

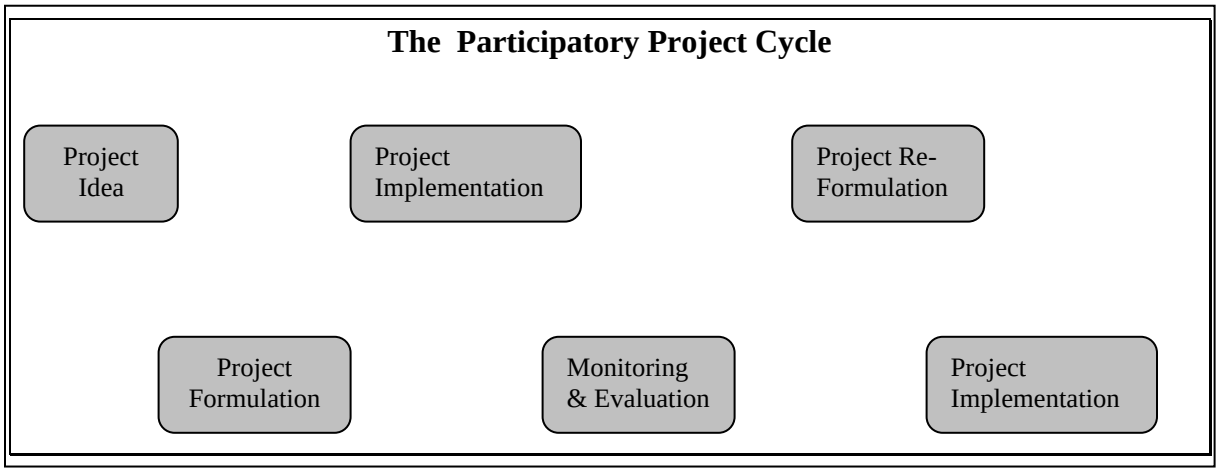
A 'project' is usually defined as a one-time activity with a well-defined set of desired results. Ideally, a project will have the elements shown in the following box.

Elements of a project

- beginning, a middle, and an end (project lifetime)
- A clear set of objectives and goals linked to anticipated (desired) effects and impacts in a target population (sometimes called 'beneficiaries')
- Various activities with related inputs and outputs

The various stages in the life of a project may be sliced into many tiny pieces, each with a specific label. Frustratingly, every agency seems to use a different set of terms.

A project goes through various stages: from the first idea to greater and greater clarification of setting, problems, objectives, choices and action. When funded, it is then implemented, revised during implementation, and eventually evaluated. These progressive stages in the lifespan of a project are sometimes referred to as a 'project cycle'. Used in this way, the concept mostly refers to the overall 'life cycle' of the project from beginning to end. In fact, however, some elements of projects are cyclical – they get repeated regularly.



Each DRDP reviews its progress against plans every six months (1/2 yearly progress report & Budget revision). Each DRDP is also responsible for reviewing annual performance at the end of each year and identifying lessons learnt. This annual process is integrated with a review of all DRDPs in Kagera and Shinyanga Region (life of project) at a 2 or 3 yearly interval.

4.2 Project stages and information needs

For the purposes of these guidelines, we will refer principally to the following stages in a project:

Before Project

What are the problems? What are the resources? What are Unmet needs?

This is when the problems that need a project are identified, contributing factors clarified, needs assessed, and then the project is designed.

Project Start-up

What is the current situation?

During this phase, after funding is secured, but shortly before project services and activities begin, the project carries out a 'baseline' study.

Implementation

Is the project proceeding according to plan?

This is an on-going stage, during which the project interventions (services and activities) are being carried out, together with various forms of regular assessment to ensure that the project is on track.

Mid-term

Are the project strategies working?

This stage occurs at approximately the mid-point in the project funding cycle. It is the time for re-assessing project strategies, management systems, linkages with partners, and looking for preliminary evidence of project effects.

End of Project

What effect(s) did the project have?
This is the point where project interventions (and funds) are terminated, and an assessment is made of project achievements during the period of support.

After Project

What impact did the project have on the lives of the people it was Designed to affect?

Ideally, after the withdrawal of project support, the benefits of projects are sustained and can be demonstrated among the target community.

4.3 Project Logical Framework ('log frame')

The log frame of a project is a tool for planning and managing development processes. Log frames are actually **dynamic**; not just a static multi-year outline for a project. In other words, Log frames can change as the project develops. Using periodic monitoring information, a project can adjust the annual plan, and modify the log frame, to reflect what can realistically be achieved in the remaining of the project lifespan.

The process of creating a log frame begins from the premise that if we know what the problem or situation is that we want to change, then we can envision a resolution or a better future (i.e., the objectives or goals of a project). Next, the Logical Framework Approach (LFA) reasons that if we know our objectives, then we can identify a set of project outputs that will achieve the objectives. Continuing in this line of thinking, we can then identify the project activities and inputs that are essential for generating the necessary outputs in order to reach the objectives.

The format of a completed log frame is usually a four column grid that shows the linkages between project intentions ('goals', 'objectives'), assessments of achievements ('indicators'), ways of checking progress ('means of verification') and expected events or situations outside project control that can influence the project ('assumptions'). Various donors may request (or demand) a variety of terms for very similar elements in the log frame.

Table 2: Typical Log Frame Structure

Hierarchy of objectives	Objectively verifiable indicators (OVIs)	Means of verification (MoVs)	Assumptions
Goal			
Intermediate Objectives			
Outputs			
Activities			

Presented in rank order, the important levels in a hierarchy of project objective/goals are:

Goal

What the project intends to contribute in the long term as a

Result of achieving the immediate objectives (e,g., improve the rural standard of living). This is the ultimate level, and only reached when the community is able to sustain the positive benefits without continued project inputs.

Intermediate Objective

What response the project intends to achieve among the Target population (e.g. increase the production and sale of high quality bananas by subsistence farmers).

Outputs

What the project intends to achieve in the short term as a result of the project activities (e.g. 100 farmers trained to carry out improved banana farming)

Activities

What the project staff and target population are going to do (e.g., provide technical support to existing farmer groups). Implementation of activities is completely dependent on project inputs.

Inputs

What resources are necessary for performing the project activities (e.g., stationery supplies for workshops and training sessions, staff). Inputs are not usually shown in the log frame itself, though they are a key element in producing project outputs. Inputs occur only during the period of project support.

In order to determine where results from project interventions fall on the hierarchy, matrix 1 (page 21) can be useful. The first column shows the levels of the ‘ Hierarchy of objectives’ as they appear in the log frame. The second column shows preferred terms for the ‘ Kinds of results, that are expected at each level; a description of each concept is presented under the ‘ what’ column. The next two columns of the matrix , caused by whom; and ‘ Claimed by whom, also help define what kinds of project interventions and results fall at each level. The second last column ‘ Time-frame’ shows when a project can expect to be able to measure the progress and results at each level. A final column gives examples of the different levels of objectives, as drawn from the 1999 Karagwe District Development plan.

Inputs (funds, technical assistance, commodities, in-kind) are used to support **Activities** (project processes done with the input resources). Both contribute to the

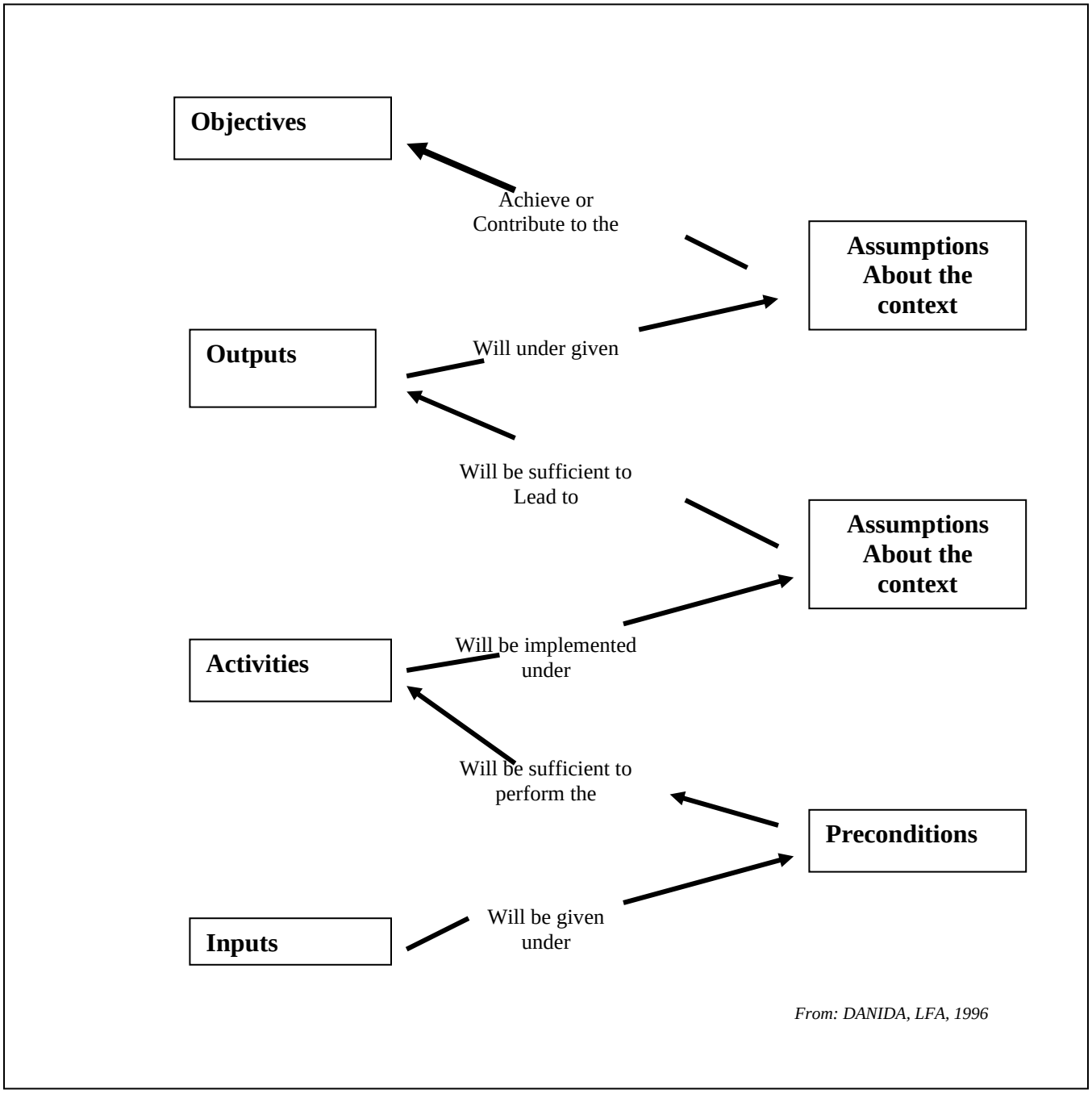
Outputs (the products of the project). All of these three elements are within the control and responsibility of the project and, therefore, the project is accountable for the extent and quality of their achievement.

The final two levels depend on responses within the target community; these are **Effects** (target population response to the project outputs, such as change in behaviour), and **Impacts** (sustainable changes in conditions at the household level). Although the project is not strictly accountable for the latter two levels since they depend on the target population and other external stakeholders, the project is responsible for the strategies that are supposed to produce the desired effects and impacts.

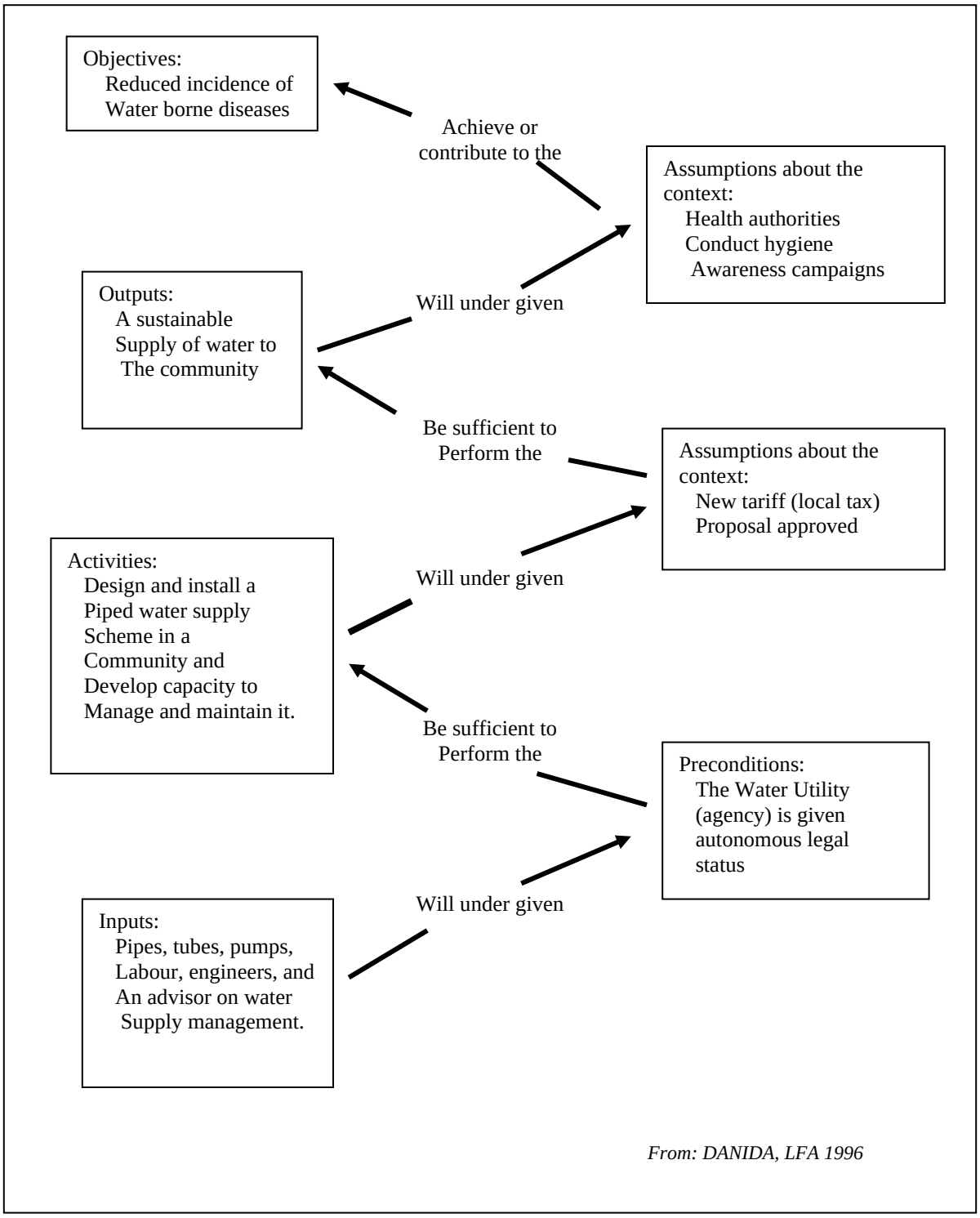
Matrix 1: Hierarchy of Objectives

Hierarchy of Objectives	Results	What: description	Caused by Whom	Claimed by Whom	Time-Frame	Examples of objective by level
Goal	Impact	Sustainable changes in human conditions or well-being of target population	Target groups experience it; may come from target group or local institutions	Attribution is difficult with other influences substantial and inevitable	Sometimes measurable within life of project but most often after project	Reduction of Maternal Mortality in HF from ..% in year X to ..% in year Y.
Intermediate Objective	Effect	Reactions and actions of target populations as a consequence of exposure to project interventions	Target groups experience it; comes from response of target group to project interventions	Should be largely attributable to the project, with other influences relatively minor	Within life of project	Improved antenatal care and EMOC services form ..% in year X to ..% in year Y
Output	Output	Products produced by the project	Project staff produce it (and are accountable)	100% attributable to the project	Within life of project	ANC & EMOC services started in the HF
Activity	Process	Interventions or activities done by the project	Project staff do it (and are accountable)	100% attributable to the project	Within life of project	X training courses conducted for HF staff in antenatal and EMOC service
Input	Input	Resources used by the project	Project staff use them (and are accountable)	100% attributable to the project		

The following graphic shows another way of understanding the levels of the project logical framework (read the figure progressively from the bottom up to the top).



For example, imagine a project seeking to reduce the amount of childhood diarrhoea by getting the community to use 'safe' water. If this project drills and equips boreholes that are then not being used, then the project logic needs to be re-assessed and strategies changed in order to achieve the desired effects.



4.4 The Monitoring & Evaluation System

The Monitoring and Evaluation system (M&E system) is another planning and management tool of projects; it is actually the information system used to assess project progress, performance and impact. Monitoring refers to the regular collection (plus analysis and use) of information within the project about its progress. Evaluation refers to periodic reviews of information from within, as well as about, projects and their performance. The M&E system is very important in its ability to assist project staff, target population, and other stakeholders to develop the project throughout its lifespan. As with the log frame, the structure of the M&E system is also characterized by several levels. Each level relates closely to the hierarchy of objectives in the log frame. The following table shows how each level of objectives links with specific monitoring and evaluation assessments (see also the table on page 26).

Table 3: Overview of Structure of M&E system

Hierarchy of objectives	Types of information	Monitoring activities	Evaluation activities
Goal	Impacts (fundamental changes for target population)	Impacts (relatively little at this level)	Final evaluation / after project assessment (mostly done by evaluation)
Intermediate Objective	Effects (target population response)	Effects (more important at evaluation)	Annual review, Mid-term evaluation Final evaluation (more by evaluation)
Output (Interventions)	Outputs (project products)	Quarterly / half-yearly (Physical)	Annual, mid-term and final (with monitoring data)
Activities	Process indicators	Quarterly / half-yearly (Physical)	Annual, mid-term and final (with monitoring data)
Inputs	Input indicators	Quarterly (Financial and physical)	Annual, mid-term and final (with monitoring data)

4.5 Monitoring

Monitoring is the collection and management of data which relate to the predefined target values for the indicators (OVIs) in log frame. Monitoring information is collected on a continuous basis throughout the implementation phase of the project.

There are four main types of monitoring activities:

Institutional monitoring

This category refers to internal monitoring of financial physical and organizational issues affecting the project. Financial monitoring tracks project inputs and costs by Activity within predefined categories of expenditure. Physical monitoring tracks the distribution and delivery of project activities and outputs/interventions. Organizational monitoring tracks sustainability, institutional development and capacity building in the project and direct partners.

Context Monitoring

The process of tracking the context in which a project is operating, as it affects critical assumptions and risks to the project. This includes monitoring institutional and policy issues that may affect the capacity of the project to act or the capability of the target population to respond to the project. These concerns are handled to some extent during monitoring but, most notably during evaluations.

Result Monitoring

The process of tracking project effects (target population responses to project outputs/interventions) and project Impacts (the contribution that the project makes to Fundamental and sustainable change for the target. Population). Concerns about effects are handled to some extent during monitoring, but mostly by evaluation. Assessment of impacts is rarely dealt with by Monitoring, and is principally in the domain of evaluation.

Objectives monitoring

The process of tracking project objectives and strategies for continuing relevance to the target population and its Changing needs. These monitoring activities vary in terms of where the data is collected from (i.e, the source), the frequency of collection, and the methods used for gathering and analyzing the data.

Table 4: Project Monitoring Activities

Hierarch of objectives in the log Frame	Monitoring activity	WHO is Responsible	WHAT is monitored	WHY is it monitored	HOW is it monitored	WHERE is it monitored (source of Information)	WHEN is it monitored	What format for reporting
Goal	Effects, context and Assumptions Objectives	Project staff, target population, other stakeholders	Impact indicators (fundamental changes for target population e.g improved standard of living); Policy and institutional changes	To assess sustainable contribution of Immediate Objectives to Goal (successes); To assess risks, Constraints, and negative outcomes	Special assessments by project staff and target populations, e.g case study	Primary : rural households Secondary: Regional statistics, other institution.	Annual assessments and after project terminated	Evaluation (external / internal), annual plan
Intermediat e Objective	Effects, Context and Assumptions, Objectives	Project staff, target population, other stakeholders	Effects indicators (response of target population to project outputs, e.g, behaviour change) policy and institutional changes	To assess contribution of outputs to Immediate objectives (successes); To assess risks, constraints and negative outcomes	Regular assessments by project staff and target population	Primary; rural households Secondary: Regional statistics, other institutions	Annual assessments	Evaluations Annual plan
Outputs	Institutional including organizational and physical issues	Project staff, Project Managers	Output indicators (project products, e.g., farmers trained in a specific farming skill)	To assess progress being made by project in delivery of outputs, to assess institutional development issues.	Using data collected by field staff and target group from various reports	Primary, e.g, Training units in project	Monthly and according to level of output	Mid-year progress report
Activities	Physical	Project staff, project managers	Distribution and delivery (actual compared to planned)	Scheduling and allocation of resources	Monthly/quar terly reports by field staff	In the project Office (KDC)	Monthly and according to level of activity	Mid-year progress report
Inputs	Financial Physical	Project staff, Financial controller (PIA) Project Accountant	Resources for project activities (e.g, people materials funds)	Scheduling and budgetary control	Expenditure reports, by category of expenditure (e.g. PAM)	In the project Office (KDC)	Monthly	PAM

4.6 Institutional Monitoring

Project inputs (i.e, resources required to implement project activities) are assessed by monitoring financial information. Monitoring input data helps keep the project management informed of the degree of financial efficiency with which the project is operating. Inputs include physical and human resources (the means) and financial resources (the costs). The data are managed according to specific expenditure categories (sometimes called "cost centres" or 'budget votes') and are reported in regular financial reports (e.g. PAM).

Physical monitoring is carried out to assess progress in the delivery of project outputs and activities (interventions) to the target population. This kind of monitoring keeps the project management informed about scheduling, distribution (equity), and effectiveness of the project in delivering the outputs and activities. Indicators for outputs and activities typically quantify the amount delivered by the project, to whom, and within what period of time. The sources of information for physical monitoring include various project records (e.g. monthly reports by project field workers) and second-hand information from the routine records of other institutions collaborating with the project (e.g. Ari Muruka field reports, Inspection reports of consulting Engineers etc.).Results of physical monitoring are reported in the half-yearly progress reports.

Many information users are coming to recognize that even when implementation is proceeding 'according to plan', many projects do not produce their intended amount of benefits, or the benefits are not sustained during and after the project. Aspects that need to be monitored to track these issues could include the following examples: human capacity – staff recruitment, training and turnover; organizational co-operation, inter-organizational co-ordination, relations with other public and private institutions, including those in the target communities; internal organization of the project – including function of the monitoring and evaluation systems.

Data for financial and physical monitoring are collected on a regular and frequent Basis throughout the implementation phase of the project, according to the level of project activities and outputs. The team members who are responsible for financial and physical monitoring are internal project staff members, such as the Head of Departments, DPLO and the project accountant.

4.7 Context Monitoring

The assumptions and risks identified in a project log frame are contextual or environmental factors that, although beyond the direct control of the project, have the potential to significantly affect the implementation of activities and the achievement of objectives. It is important that these factors are assessed on a regular basis so that changes in strategy or interventions can be made before pending problems become critical. In general, the indicators for the assumptions will relate to the project environment: physical, socio-economic, institutional and government policy.

4.8 Results Monitoring

Project effects are monitored by assessing the perceptions (opinions and reactions) and resources (behaviour change) of the project target population to the project outputs. Such monitoring helps the project to understand the level of acceptance (or adoption) of project outputs or interventions among the target population. Indicators that assess effects focus on changes in attitudes and behaviours, e.g. changes in farming practices and acceptance of family planning methods.

Relatively little impact monitoring generally occurs during the lifetime of a project, due to the duration of time necessary for impacts to become manifest and measurable. Some impact monitoring may be carried on as case studies of selected sub-groups who are most likely to be affected by the project, e.g. farmers who have been actively participating in project-related trainings and assistance since the early days of a project. Monitoring project impacts helps to understand whether the strategies of the project are really working in the direction of the final goal. Indicators at this level tend to focus on development, e.g. change in household income or consumption patterns, self-reliance, and capacity to cope with seasonal fluctuations.

Data about project effects and impacts are collected during periodic monitoring assessments and can be either qualitatively descriptive or numerical (quantitative). While the principal source of information is direct interviews and observations of target population members, this form of monitoring can also include data from routine records of other collaborating institutions.

4.9 Objectives Monitoring

The purpose of objectives monitoring includes checking on whether project objectives are being achieved or are likely to be achieved within the existing circumstances. Objectives monitoring also means looking into the presence of any unanticipated effects/impacts or unwanted side effects (negative consequences of the project). This kind of assessment is mostly done in the course of mid-term and final (or terminal) project evaluations, but could also be a part of the annual review process.

4.10 Evaluation

Evaluation is the periodic assessment, analysis and use of data about a project. The main evaluation points in the project cycle are:

Baseline Study	The assessment of a selected set of indicators about target population conditions after project start-up but before the beginning of project interventions.
Annual review	The internal assessment of the performance and progress of a project's development over successive one year periods. Usually includes an assessment of effects (target population responses to project outputs/interventions) and project strategies.
Mid-term evaluation	Usually an external (and thus 'objective') assessment of a project which focuses on its performance, organizational capacity, and mid-course corrections to improve achievement in the remaining project period.
Final evaluation	An external or internal assessment of the effects and impacts generated by the project, as well as a cost-effectiveness or cost-benefit assessment. Usually done just before or just after the project ends.
Ex-post evaluation	An external and in-depth study of the impact of a project on the target population. The preferred interval between project termination and an ex-post evaluation is 5-10 years. Rarely done due to lack of donor willingness to fund.

Baseline studies rely on the collection of new data. All of the evaluation activities after the baseline rely on various combinations of monitoring data, data from other organizations, and new data to be collected from the field.

Table 5: Project Evaluation Activities

Phase of project lifespan	Evaluation activity	WHO is evaluated	WHAT is evaluated	WHY is it evaluated	HOW is it evaluated	WHERE is it evaluated (source of information)	WHEN is it evaluated	Reporting Format
Start-up	Baseline study	Project staff, target population	Indicators (OVIs) at Goal and immediate objective level	Benchmark for later assessment of effects and impacts	Pre-intervention descriptive survey, often quantitative	Primary: target population	Prior to starting implementation of interventions	Baseline report
Implementation	Annual review	Project management team	Financial, Physical, Effects	To assess progress and strategies To keep project on track To adjust Log Frame	Using existing monitoring information Annual survey	Monitoring data, Annual and semester reports, reports of diagnostic studies	Annually	
Implementation	Mid-term Evaluation	Mid-term Evaluation team	Organizational structure & design Physical, financial progress Assess effects Analysis of risks and assumptions	Assessment of project performance Identify possible improvements in project strategies and interventions	Comparative analysis of targets and actual achievements, may include qualitative interviews	Annual reports, log frames, survey reports Target population, staff, collaborating institutions	Half-way through the implementation phase	Mid-term Evaluation Report
End of project	Final evaluation	Project management or external evaluation team	As above, plus impacts, cost-benefit and sustainability of benefits	Extra lessons learnt to improve design of on-going and future projects	New survey repeating OVIs from baseline Cost-benefit Targets vs actuals	Document review, Household survey, Interviews with staff, other institutions	At the end of the project implementation phase	Final Evaluation Report
After project	Ex-post evaluation	External evaluation team	Detailed study of impacts: economic, social, environmental, institutional	To assess the sustainability of benefits for target population, government	Before and after analysis, investigation of unintended impacts	Review documents on general context Repeat survey, other interviews	Usually 5-10 years after termination of the project	Ex-post Evaluation Report

4.11 Baseline study

The principal focus of the baseline is on collecting and analyzing pre-intervention data relating to the indicators (OVIs) for the project goals and immediate objectives. Baselines are done to establish benchmarks for the chosen indicators, i.e. to provide data on their initial status so that subsequent monitoring and evaluation can assess the effects and impacts of the project for the target population. The baseline also helps to assess the measurability of the selected indicators and can be used to fine tune them for future follow-up. To do this, baselines are carried out after the project is designed and funded, but before starting project interventions.

If a baseline study can be planned, designed, implemented and analyzed in a participatory fashion, the commitment of partners (including the target population) to the project interventions can be enhanced.

Very specific and clear objectives need to be established for baseline studies since they will be of enduring importance in the project. See box below about potential limitations of baseline studies.

Potential limitations of baseline studies

- Collecting *excessive and non-specific information* that is too overwhelming to ever be analyzed and used
- Extracting information and *not actively involving target population* members in planning and implementing the assessment; this happens most commonly if the approach is a complex quantitative survey.
- Collecting *data related to a single point in time*, i.e. the season and year when the assessment was done; this means that subsequent comparison studies need to be scheduled at a similar time.
- *Error in sampling*: the respondents can spoil the value of the analysis, e.g. sampling only farmers who are particularly likely to be changed by project interventions such as farmers with land, or educated farmers who can easily answer a questionnaire.

4.12 Annual review

The annual review is an internal evaluation done by the project management team. It is a form of on-going evaluation because it occurs every year during the implementation phase of the project. The data used in the annual review includes most of the kinds of monitoring information: financial, physical, effects, and assumptions.

The objective of this evaluation is to assess project progress and performance and to keep the project on track towards its objective. A further objective is to review the strategies and log frame of the project and, if necessary, modify the log frame. Such modifications are generally limited to the level of activities and some outputs. This connection between Planning, Monitoring and Evaluation is called the PME cycle, and it is an annual process.

During the initial stages of the project implementation (i.e. the first two years) the emphasis of PME will be mostly on using the data collected to measure means and costs relating to project inputs, activities and delivery of their associated outputs. Assumptions and preconditions for project interventions, including institutional development may also be tracked. The evaluation of information relating to project effects and impacts is usually premature at this stage. As the project develops the full PME cycle is established.

Analysis of the annual review assessment data is done by comparing monitoring data about actual achievements with targets stated in the log frame. This type of comparative analysis facilities reporting of deviations from targets in actual spending and outputs. A weakness of relying only on information from financial and physical monitoring (i.e. meeting physical targets within an accepted degree of financial efficiency) does not say anything about the effects of these outputs/interventions among the target population.

4.13 Diagnostic study

Occasionally, a more detailed investigation of a particular constraint or opportunity for intervention is required to assist the project. In this case, a diagnostic study may be done by the project staff as a one-time activity in order to provide additional information. Although not a regular (recurrent) part of the monitoring and evaluation system, the diagnostic study provides a quick and significant contribution of information to the project's planning and management (i.e, Lkand soils survey, diagnostic survey Ari Maruko)

4.14 Mid-term Evaluation

The Mid-term Evaluation (MTE) is an external evaluation activity which takes place approximately halfway through the project implementation phase. The data analyzed and used during the MTE originates from the routine financial, physical, effects and assumption monitoring activities. This information has been reported within the project in a number of project documents, including annual reports, log frames, and diagnostic studies.

The MTE team aims to identify possible improvements in the nature of project outputs/interventions. These recommendations are based on the understanding by the evaluation team of the process by which the project has reached its present stage (see box next page).

Mid-Term Evaluation:
Criteria for assessing project performance

- *The organizational structure, institutional development, and capacity building of the* project
- The project *design,* including project *strategies linkages* and lines of *collaboration* with other institutions
- *Procurements*
- *Physical and financial* progress
- *Target population response* to project outputs/interventions
- An analysis of *risks and assumptions*

4.15 Final evaluation

As the project comes to the end of its cycle, a final evaluation is completed by the project management team (internal), or more commonly, by an evaluation team that includes external persons (consultants etc.).The objective of a final evaluation is to draw upon the experiences of the project in order to improve the design of future and on-going projects.

The data for analysis during this form of evaluation is the same as that in the Mid-term Evaluation, but it may also include a cost-effectiveness (and sometimes a cost-benefit) assessment. Sources of data for a final evaluation include project documents, and discussions with all the different groups of people involved in or with the project from its conception. This includes project target population, project staff, regional and national government policy makers, and donors.

Two principal analytical methods used in final evaluations are:

- Comparing ***before and After:*** re-gathering selected indicators originally documented in the baseline study, and comparing values at start-up and end-of-project)
- Comparing ***with and without***: assessing selected indicators among groups of people who have and have not been exposed to the project interventions.

4.16 Ex-post evaluation

This evaluation activity is done approximately 5-10 years after the termination of the project and is done by an external evaluation team. In reality, they are seldom done because it is very difficult to find a donor willing to support such a study. The objective of an ex-post evaluation is to assess the sustainability of the benefits of the project, both

to the rural households/communities and to the government and collaborating institutions in the project area.

Sources of data for analysis in the ex-post evaluation include interviews, observations, project documents (especially the baseline and final evaluation); and reports of any on-going monitoring of the target population (e.g. by government counterparts or community agencies).

The ex-post analysis usually includes a detailed study of the project in terms of:

- Economic impact
- Social impact
- Environmental impact
- Institutional impact.

Table 6: Linkages of Monitoring with Evaluation

Kind of information	***MONITORING* Activities – Information *COLLECTION***	**When is it collected during project cycle**	**Frequency of collection**	**How is information reported**	***EVALUATION* Activities – Information *USAGE***	**When is information used during project cycle**	**Frequency of evaluation**	**How is evaluation reported**
Impacts	Target population impact monitoring	During & After implementation	Not often done; but can start after Year 2		Baseline survey Final evaluation Ex-post evaluation (these should include repeats of baseline survey)	5 years after project End of Project	Once (if done)	
Effects	Effects monitoring	During implementation	Annually from Year 2	Annual progress reports	Annual Review Mid-term and Final evaluation	End of project year	Annually from year 2	Mid-year & annual progress reports
Assumption and risks	Assumption & risk monitoring	During implementation	Annually from Year 1	Annual progress report	Annual Review Mid-term evaluation	During project Implementation	Annually from Year 1	
Outputs	Physical monitoring	During implementation	Monthly from start of project	Mid- & Annual progress reports	Annual Review Mid-term and Final evaluation		Annually from Year 1	
Activities	Physical and financial monitor	During implementation	Monthly/weekly from start of project	Mid- & Annual progress reports	Annual Review Mid-term and Final evaluation		Annually from Year 1	
Inputs	Financial monitoring	During implementation	Monthly/weekly from start of project	As above + PAM	Annual Review Mid-term and Final evaluation		Annually from Year 1	PAM

4.17 Design issues in information systems

As mentioned earlier, experience has shown that users of information about projects commonly have a number of concerns about the quality of the information they are seeking. General issues about accuracy, relevance, timeliness and credibility were reviewed in Chapter 2. Four additional issues that require specific information management plans are discussed in this section. These four issues are:

Attribution	How can we/they be satisfied that results (effects, impacts) claimed for the project are actually due to project interventions and not to other outside factors?
Effectiveness	How can we/they find out whether project resources are being used wisely, i.e. obtaining maximum benefits for minimum costs?
Significance	How do we/they know that the problems being addressed are important, and that any effects or impacts reported are valuable and/or fundamental?
Sustainability	How can we/they know whether any positive impacts (or effects) can continue to happen without direct project support (financial or otherwise)?

Let us take these critical issues in sequence.

4.18 Attribution

Capacity to assess and show project influence requires planning and specific information gathering designs from the very beginning of a project. A number of design strategies are available that can help to demonstrate attribution. Among the main types are the following:

- **The 'with/without' scenario.** This approach relies on a comparison between two distinct groups of people, one of which has received project interventions and another community which has not been exposed to the project. The weakness of this approach is difficulty in being sure that the two communities are truly equal or similar. If they are not exactly alike (which is usually the case), then it is hard to be sure that any observed effects or impacts in the ''with'' community are actually due to project interventions. Nonetheless, this is a strategy commonly used for end of project evaluations because it is relatively inexpensive.

- **The 'control group' scenario.** If the with/without arrangement is planned and two groups are monitored from the very beginning of the project, the 'without' group is referred to as a 'control group'. The strength of this strategy is that attribution of changes to project influence is more clearly demonstrable than it is in the other designs. Changes occurring in the 'with' community during the life of the project are 'controlled' by being able to identify and then subtract changes seen in both communities. Any remaining changes in the 'with' group can then be assumed to be due to project influence. In reality, although control groups are closer to a scientific ideal, they are expensive and logistically difficult to carry out. They may be most suitable in pilot projects or when mandated by a donor interested to clearly determine attribution.
- **The 'before and after' scenario.** This is a comparison between two distinct time periods. A specific set of information (selected indicators) is collected from a representative group of intended beneficiaries (target population) ***before*** the project has been implemented (i.e. a baseline study is essential for this approach) and then compared a similar collection of information at the end of the project ***after*** implementation (e.g. at the final evaluation). The before and after design is weak in addressing attribution; it also cannot answer whether the project target population could have done better without the project.

4.19 Effectiveness

The core issue in assessing effectiveness is ***value for money***. Within DRDP, this is generally done only at the output level, i.e. assessing cost-effectiveness for project products/results that are within the control of the project. This approach is thus able to be done within the lifetime of the project.

A deeper level of assessing effectiveness is a cost-benefit analysis, i.e. comparing resource inputs to effects and impacts for the target population. A major weakness in such analyses is a tendency to focus only on numbers to the exclusion of many qualitative aspects, e.g. local target population perceptions about the significance of the indicators being used.

4.20 Significance

One of the principal design strategies to address this concern is participatory planning and management, including participatory evaluation. The weakness of a participatory approach can be the logistical efforts needed to gain and sustain active participation. Other considerations of significance include scale (how many people are reached) and replicability (whether or not this model could be repeated in other projects in other communities).

4.21 Sustainability

The core concept of sustainability is the continuation of project activities after the end of project support. It may also refer to self-financing (financial sustainability) and/or continued flow of support to target populations through the resources and initiative of local institutions (operational sustainability). If a specific institution is being enhanced to continue project benefits, then criteria for assessing institutional sustainability may include issues of organizational maturity, efficiency, effective implementation, consolidation, and financial viability. Another dimension of sustainability relates to environmental impact. Are the practices promoted by the project in harmony with ecological considerations, or do they deplete natural resources?

It is important to be clear about what element(s) of sustainability are being assessed, and what are the indicators of these aspects. For example, in a typical DRDP project to improve and introduce new farming technologies, the assessable aspects of sustainability could include:

- Maintenance of a certain project activity (reflecting sustained demand for a service, as well as financial sustainability and the sustained provision of that service; i.e. effects on the farmers and the system)
- Adoption by farmers of a specific technology (sustained use, effects at the level of the individual farmer)
- An extension system that allows farmers to continue to identify new technologies (sustained feasibility, capacity, and effects of institutional development)
- Productivity of the farming system (sustained effects)
- Environmental impact
- Impact on household livelihood security.

Many projects focus on the two first levels in the above list, however these issues are actually of lesser significance than the lower levels in the long run.

An ultimate design strategy for assessing beneficiary sustainability is to do an ‘ex-post’ evaluation on the target population several years after the project has ended. Impacts that continue to be demonstrated after such long intervals show that changes in the community were fundamental and ‘sustained’. Two major weaknesses in this strategy are the duration of time before getting information about sustainability and the rarity of any donor being willing to fund an ex-post evaluation.

CHAPTER 5

What needs to be included in detailed project planning in order to have the desired information at the right time in usable form?

5.1 Responsibility for M&E

Projects have a responsibility to identify a process that ensures the design of the M&E system is both appropriate and sustainable for its providers and users. When we are assessing the resources required to operate an M&E system, we need to assess the means and costs of collecting, managing and analyzing the data against the value of the 'end product', i.e the usefulness of the information produced. The requirement is for an M&E system which is sustainable, i.e. able to be operated and managed by collaborating institutions, their staff and the project target population. Achieving sustainability has implications as far back as the project preparation phase when the OVIs are first identified and described.

This process involves the active participation by all the people who have an interest in the information contained within the system. The providers of data collected, and those responsible for its 'input' into the system via the project monitoring activities, are invariably among the users of the information 'output' from the system. There is an obvious causal relationship between the quality of data 'in' and the information 'out'. If the M&E system is deemed as useful among the target population during the implementation phase, the chances are good that it will also be sustainable. A well-designed participatory M&E system should represent one of the benefits of the project.

Participation involves not only giving people opportunities to become involved with planning and M&E, but it also means empowering those people to influence the final outcomes or decisions based on the information generated. The following box is a short checklist that can be used for assessing the participatory aspects of a project M&E design.

Checklist for assessing participation in M&E design

[ ] *Has it been designed with participation of all stakeholders*?
[ ] *Does it involve the target population?*
[ ] *Can it be fitted into the activities of collaborating agencies?*
[ ] *Do the staff (and community) responsible for M&E have the necessary skills?*
[ ] *Is it going to be sustainable for the duration of the project?*
[ ] *Can it be sustainable by other groups after the project is ended?*

5.2 Pre-Project planning for M&E

Ideally, thinking about the M&E system for a project should start at the stage of appraisal and project design, not when the project has already been approved and implementation has begun. There are four important reasons for this, as shown in the box below:

Reasons for early planning of project M&E

- Concern about M&E encourages clearer thinking and a more refined statement of the project objectives, assumptions, indicators and activities.
- Adequate provision can be made at the outset for meeting the cost of M&E
- M&E can be built from the start into the various project components
- Information users (including target population members) can participate in designing an appropriate M&E system that is acceptable and useful for their needs, not just for project and donor use.

When consideration for M&E is not included from the earliest point in project planning the M&E systems may be constrained by the design of the preliminary assessments. The possible limitations include lack of specificity in the project log frame (e.g. vague project objectives and outputs, or unclear indicators and means of verification), and designs for information management that simply extract data without actively involving the target population in planning and implementation of the system. Project documents (and their 'log frames') are an important tool for project management, but they do not usually contain sufficient detail when it comes to information systems. Log frames do list some essential items for planning information management: desired information (as 'means of verification'). These two categories, however, do not include any answers for the following key questions:

Key information system requirements <u>not</u> included in standard Log Frames

- How will the information be gathered? Who will collect it? When will it be obtained?
- How will the gathered information be analyzed? Who will analyze it? When will the analysis be done?
- Who will receive the results? In what format will they be distributed? And what decisions in (or about) the project are dependent of getting the analyzed information?

Recognizing that the log frame does not provide enough detail by itself for creating the M&E plan, it is necessary to develop a strategy for generating the missing elements. A useful way to do this is to prepare and complete an Monitoring and Evaluation Planning Matrix that expands the Log Frame matrix to include the key elements of an M&E plan (see Table 7 on next page).

Table 7: Monitoring and Evaluation Planning Matrix (expanding beyond the Log Frame)

Objectives	**OVIs**	**Means of Verification (MOV)**					
Hierarchy of Objectives	**Indicators**	**Sources of Information**	**Method for data Collection**	**Method for analysis of Data**	**Type of activity: Monitoring Or Evaluation**	**Frequency**	**A (e us**

Operational definitions for the table:

- ***Objectives*** – hierarchy of objectives in the log frame (e.g. Goal, Immediate objective, Output, Activity)
- ***Indicators –*** details about exact information desired; clarify meanings of vague terms; link to impact, effect, output levels
- ***Methodology –*** what specific *sources of information* (which records located where, what persons to interview); which *data gathering methods,* what tools, who to collect the data, and when; which *means of data analysis,* who to do, and when
- ***Monitoring or Evaluation –*** regular monitoring, or periodic evaluation (or one-off diagnostic study)
- ***Frequency –*** how often will information about each specific indicator be gathered
- ***Application –*** what anticipated uses for the information, what decisions will be influenced by the results
- ***Circulation –*** information users; dissemination, who should get the information and analyses, and in what form

Below is one example of a completed M&E matrices of an 'imaginary' health project to improve Maternal Health service. The extracts here show only one indicator at the Intermediate objective level (Log frame) for each project.

Table 8: Community Reproductive Health Project

Intermediate objective: increased number of women Seeking maternal health Services at a health Facility

Indicators	Sources	Methods	Who	Data Analysis	M or E	Frequency	Application	C
% of all deliveries in project area attended by trained health worker	<u>Original Sources</u> • HMIS (DMO) <u>New sources</u> • Community women having birth in past year • Village Health committees • Women bringing babies for EPI • TBAs	Review records, census projections Survey Group meetings Key informants Focus groups	Project M&E person Project team, Partners Counterpart NGOs Community workers	Quantitative Tallies and trends Quantitative Correlation Triangulate Quantitative patterns, ask and answer why?	Mon. Eval.	Monthly; Quarterly; Semi-annually; Annually Baseline; Mid-term; Final	Assess trends: are we on track? If not, why? Make adjustments; Comparative assessment Set foundation for measuring change Assess strategy effectiveness Assess project effects	D pa K sta R Pa do In gr

CHAPTER 6

Indicators – what do we specifically want to know about projects?

6.1 Indicators

Indicators are qualitative or quantitative criteria used to check whether proposed changes have occurred. In the context of the log frame, indicators (column 2) are defined as specific (explicit) and objectively verifiable criteria which can be used to assess whether the objectives (column 1) have been met. In other words, indictors are designed to provide a standard against which to measure, or assess, or show, the success or progress of a project against stated targets.

While indicators can be used to assess progress toward project targets, the indicators are not the same as targets. Targets specify desired results within a specified time span (e.g. 700 farmers trained in compost mulching techniques within 3 years, or 50 community health workers trained within the first year of a project); but there can be targets that apply to inputs, outputs, effects or impacts. As used in the DRDP log frame format, indicators are assessments of progress towards achieving desired changes in the target population, i.e. reaching immediate objectives or the project goal. Indicators are not generally presented as numerical targets in themselves. Some donors, however, do vary in their degree or separating or merging indicators and targets (see Annex 5).

The five main types of indicators used in project monitoring and evaluation correspond to the main levels in the project hierarchy of objectives. By objective level, the corresponding indicators are shown in the following table:

Table 9: Types of Indicators by Objective Level

Hierarchy of Objectives	Indicator type	Description of Indicator type	Examples
Goal	**Impact**	Assess actual change in the conditions of the basic problem identified; shows changes that are fundamental and sustainable without continuing project support	• Household livelihood security levels, as shown by measures of health, nutrition, education, community participation and economic security
Intermediate Objective	**Effect**	Describe target population responses to project outputs, e.g. behaviour change, reactions and perceptions; systematic changes in institution	• % of households in target area using improved fuel-conserving stoves • Number of health units with a cost-sharing system
Outputs	**Output**	Describe project products, i.e. the direct outcome of project activities and inputs for which the project is responsible	• Number of health workers trained in FP services • Number of farmers trained in proper handling of pesticides
Activities	**Process**	Describe project activities (or processes)	• Number of trainings held
Inputs	**Input**	Describe what resources go into the project	• Number of TBA kits provided • Number of staff supported with Motor bike

6.2 Indicators and Information Users

Data about inputs and activities are essential for the day to day job of the project manager. The project can follow these levels through 'process indicators'. For example, the project manager needs to know the number and kinds of training courses in a specified time period in order to budget for the required activities, prepare training materials, etc.

Once the project activities are started, the project will be able to measure output indicators. Output indicators will tell the project manager how close the project is to achieving the expected targets. At the same time, output indicators permit managers and program offices to track trends for achievements, and to spot difficulties indicating the

existence of problems needing attention. Output indicators should come from the routine information gathering (i.e. monitoring) activities required of all projects.
In contrast, effects indicators showing the interaction of project products and community responses will require other means for data collection than routine monitoring of daily activities. They need more probing methods, such as evaluation surveys and qualitative or participatory approaches. Effects data is useful for project coordinators and advisors, regional coordinators and the regional administration and RNE.

Finally, indicators are needed that will permit analysis of the project's impact on the household and household members, as well as at the institutional level. This dimension will usually not be clear enough for reliable assessment until several years after an intervention is implemented (e.g. 5-10 years after project start-up). This information is critical to government and to donors for setting direction and long-range strategic plans.

6.3 Issues affecting selection of indicators

Although not their exclusive information need, donors always ask for some numbers (i.e. 'quantitative' information). Project logical frameworks written to meet donor requirements tend to support this number-crunching orientation. Fundamental and sustainable changes in people's lives are a 'final goal' that is rarely measured. Providing information on numbers of people reached, number of trainings, etc. is easier than assessing deeper changes in people's lives. For these reasons, both donors and NGOs have been more comfortable with measures of project impact. It is only recently that donors have begun to ask about effects and impacts that are best illustrated in words or pictures (i.e. 'qualitative' information).

Input and output indicators are easier to assess than effect or impact indicators, but the 'lower' level indicators only provide an indirect measure of the success of a project. To use them, one has to assume that the achievement of certain activities will automatically result in positive changes (e.g. desired effects and impacts), but the lower level indicators cannot demonstrate the reality of such change. On the other hand, however, it can take many years for impacts to become measurable when looking at the target population as a whole. For this reason, it is sometimes appropriate to make qualitative preliminary assessments of the direction and nature of impacts by doing cases studies of selected households within the lifetime of the project.

Measuring cost-effective use of inputs and overall project effectiveness will always be important. Donors want to know how their money has been spent and ensure that activities are in the line with those outlined in the project agreement. However, there is an increasing recognition that measuring impact is also important, although difficult. It is difficult because it is necessarily subjective, and because one has to wait so long to identify changes that qualify as impacts (fundamental, sustainable, and attributable to the project). Quantitative information alone cannot adequately assess impact level changes in people's lives. Moreover, changes that development workers expect may not be the changes that the members of the target population desire. It is important to recognize differing perceptions of reality.

Ultimately, the selection and nature of indictors for a project should be guided by the nature of the objectives and the intended effects and impacts of the project. The first step, therefore, is a clear and unambiguous statement of the hierarchy of objectives: short-term and medium-term 'intermediate' objectives and 'final' goal. These may pertain to short-term achievements, such as construction of wells (outputs), or changes in behaviours among the target population (intermediate objective), such as starting a small enterprise. Or they may be long-term impacts such as the eradication of rural poverty or better health of the target population (final Goal).

There is little conceptual problem with outputs and effects, which are generally straightforward and directly measurable, but concepts such as poverty and health are not easily assessed. For instance, with health, it is first necessary to specify the exact aims of the given project: better health status of the target group as a whole or specifically for women and children; prevention of specific diseases or improved health care services; or all of these. Depending on the specifications, appropriate indicators can be selected.

6.4 Criteria for selection of 'good' indicators

While the choice of indicators is a matter of common sense, or of experience and knowledge of statistical data sources, certain basic criteria can be applied. The following criteria could be used to assist in selecting good indicators:

Relevant	The indicators should be directly linked to the project objectives, and to the appropriate levels in the hierarchy.
Technically feasible	The indicators should be capable of being assessed (or 'measured' if they are quantitative).
Reliable	The indicators should be verifiable and (relatively) objective; i.e. conclusions based on them should be the same if they are assessed by different people at different times and under different circumstances.
Usable	People in the project should be able to understand and use the information provided by the indicators to make decisions or improve their work and the performance of the project.

Participatory

The steps for working with the indicator should be capable of being carried out with the target community and other stakeholders in a participatory manner. I.e. data collection, analysis and use

Other criteria which can also be helpful in selecting indicators include the following:

- **Comprehensible –** the indicators should be worded simply and clearly so that people involved in the project will be able to understand them.
- **Valid –** the indicators should actually measure what they are supposed to measure, e.g. measuring effects due to project interventions rather than outside influences.
- **Sensitive –** they should be capable of demonstrating changes in the situation being observed, e.g. measuring the Gross National Product (GNP) of Tanzania doesn't tell us much about the individual households in one district.
- **Cost-effective** – the results should be worth the time and money it costs to collect, analyze and apply them.
- **Timely** – it should be possible to collect and analyze the data reasonably quickly, i.e. in time to be useful for any decisions that have to be made.
- **Ethical** – the collection and use of the indicators should be acceptable to the communities (target populations) providing the information.

Few indicators fulfil all these criteria. But they may still indicate direction and general magnitude, thereby assisting in comparisons over time or among different areas or groups of people at a point in time.

Choice of appropriate indicators is an art that requires experience and skill. It requires thorough understanding of the information needs of project management and information users at different levels. Choosing indicators also requires knowledge of how best to obtain (and analyze) the data for the indicators, and of the limits imposed by both costs and techniques.

Thus, infant mortality rate (or maternal mortality rate) may be a suitable indicator to monitor health in countries with comprehensive systems for registering vital statistics, i.e. births and deaths. It may be quite unsuitable for project monitoring where the target population is relatively small and/or where the data must be obtained by a household survey.

6.5 How indicators can be improved

Project staff responsible for developing an M&E plan may need to improve on indicators used in their log frame, or to reassign them to different levels in the hierarchy of objectives. The box on the next page gives some examples of how to fix inappropriate indicators.

Finding and fixing inappropriate indicators – some examples

Does the indicator get to the heart of the issue reflected in the Intermediate objective?
Is the indicator valid?
Does the indicator measure what it is supposed to?

Example 1:

I.Objective:	By 2003, a sustainable system of village land-use planning & management is in operation in Mabira/Kituntu Division.
Indicator:	20% of sampled villages will participate in land-use planning & management activities.
Problem:	***Indicator not clearly linked to objective, expressed as target***
Better indicator:	% of (sub-) villages within Mabira /Kituntu division with village land-use plans in place and under active self-management for at least a period of XX-time.

Is the indicator measuring 'effect' actually formulated at an activity or output level of the project?

Example 2:

I. Objective:	60% of families in project area will have adopted appropriate farming techniques.
Indicator:	% of families that have received training in better agricultural methods.
Problem:	***Indicator is formulated at Output level, non-specific statement***
Better indicator:	% of target families that have adopted mulching banana stems for weevil control (i.e. any specific agricultural method!).

Example 3:

I.Objective:	Improved access to clean water for target population through repair of old pumps, installation of new pumps and hygiene education.
Indicator:	Re-assessment of existing water systems completed.
Problems:	***Indicator is formulated at Activity level***
Better indicator:	% of identified old pumps repaired by local water committees after project-supported training.

6.6 Technical Considerations

Numbers vs. Percentages:
The goals (which include targets) and the corresponding indicators should be consistent in terms of using numbers or percentages (%). For example, in a reproductive health project, the total numbers of pregnant women may be very difficult to assess; therefore, framing targets and indicators in terms of the proportion (%) of those attending antenatal clinics may be more manageable.

However, it can also be important to consider the value of using both numbers and percentages. Continuing with the above example of a reproductive health project, it is important to remember that due to the natural growth of the population, there are increasing numbers of girls becoming reproductive age adults each year. Since the total population of reproductive age women in the project area is rising every year, if the proportion (%) of women served remains the same, in fact, the project is likely to be reaching increasing numbers of women. Therefore, it can be important to document both numbers and percentages in order to describe project achievements (or target population needs).

Aggregation of Data:
An important factor affecting the cost of data collection and the method of analyzing any indicator is the level of the data collected. Indicators may be aggregated (pooled or combined) at the national level, derived from national sources and only applicable at this level. An example is the gross national product (GNP) derived from national accounts. A second category of aggregate indictors comes from the local level (community, village, district). Examples are the availability of medical facilities or schools in the district and their condition. A third category of indicators is based on households or individuals, usually obtained through a census or survey. The extent of literacy and the height and weight of children are examples.

By and large, aggregate indicators are easier to collect than household indicators, but because they cannot readily be disaggregated (e.g. separated by gender, age, or specific community), distribution data cannot be obtained from them and their utility is very limited. Hence, we cannot use GNP to arrive at the gross product for a district, or for the poor. On the other hand, household data can be dissaggregated, but they are generally costly to collect.

As far as possible, the indicators selected should be separable by gender, income group, etc. in line with project objectives. Disadvantaged groups such as the rural poor and women cannot receive equitable benefits from development projects unless they are specified as target populations with strategies indicated whereby their disadvantaged status can be overcome and their conditions monitored. Aggregate indicators cannot achieve this; indicators based on the household or the individual are required to provide data separately for men and women or for socio-economic categories such as the poor or landless.

Direct vs. Indirect Indicators:
Indicators may be direct, such as reported personal statements by reproductive age women about use of family planning methods including condoms, or indirect, such as the number of condoms sold or distributed in a community. Indirect indicators are useful where direct measurement is not feasible or cost effective. A good example of applying indirect indicators is estimating income based on nature and size of assets, type of house construction, or expenditure patterns – because few people are willing or able to accurately report their income from all sources.

Precision requirements:
Both indicators and related information requirements should be periodically reviewed to take into account changing needs or ways to improve data quality. For each indicator, we must consider the degree of precision needed in the measurement and whether we can achieve it. For example, it might do little good to measure performance if our measures are so gross that we cannot tell whether the standards have been met. In this connection, indicators already in use, or indicators used in other projects, should be reviewed before new ones are considered.

Nature of information required:
In addition to considerations about indicators by the various categories above (hierarchy of objective, qualitative or quantitative, direct or indirect), it can also be useful to consider the intended content of the indicators. The following chart shows nine types of indicators classified by expected content.

6.7 Common types of Indicators

Indictor types	What they show	Examples
Indicators of availability	These show whether something exists and if it is available.	Whether there is one trained local worker for every ten houses.
Indicators of relevance	These show how relevant or appropriate something is.	Whether new stoves burn less fuel than the old ones.
Indicators of accessibility	These show whether what exists is actually within reach of those who need it.	A health post in one village may be out of reach of other villages due to mountains, river, lack of transport or poverty.
Indicators of utilization	These show to what extent something that has been made available is being used for that purpose.	How many non-literate villagers attend literacy classes regularly.
Indicators of coverage	These show what proportion of those who need something are receiving it.	Of the number of people estimated to have tuberculosis in a given area, what % are actually receiving regular treatment.
Indicators of quality	These show the quality or standard of something.	Whether water is free from harmful, disease-causing substances or organisms.
Indictors of effort	These show how much and what is being invested to achieve the objectives.	How long it takes how many men to plant what number of palm trees in a week.
Indicators of efficiency	These show whether resources and activities are being put to the best possible use to achieve the objectives.	The number, frequency and quality of supervisory visits after introducing bicycles to replace heavy vehicles.
Indicators of impact	These show if what you are doing is really making any difference	After a campaign against measles, does the incidence of measles reduce over the next several years.

[Feuerstein, 1986]

The bottom line:
Would the information be *'nice to know',* or do we ***'need to know'?*** The temptation of collect data merely for the sake of interest (or 'it might be useful someday') should be resisted. If there is a serious doubt as to whether an item should be collected or not, the general rule is to leave it out.

CHAPTER 7

Where can we find the information we need ?

7.1 Means of Verification

This chapter (and the next two chapters after it) deal with the third column in the project logical framework, the 'Means of Verification' (MoV). The MoV column is a very important column for monitoring and evaluation, but may not have been recognized as such until the real M&E planning begins.

The Means of Verification is often interpreted by log frame planners to only mean 'sources' of information. In actual fact, it refers to a much broader set of issues related to assessing the project indicators (OVIs) which need to be expanded in the M&E planning process. The key elements are:

Sources of information

Where the information comes from (e.g. people, institutions, documents, etc). As it is generally not feasible to talk with everyone involved with a project (all target households, all stakeholders, etc.), strategies are usually necessary for getting information from a 'representative' sample of the complete set of potential information sources.

Methods of data Collection

How the information about the indicators is actually obtained (e.g. documents review, interviews, participatory mapping exercises with the community, focus group discussions, farmers' self-maintained records, etc.)

Methods of data Analysis

How the collected information is consolidated, described, and interpreted in order to make it meaningful and useful

Methods of dissemination

How the information is prepared for application/use and circulation to information users.

7.2 Major Sources of information

Sources of information may be classified as either primary or secondary. Primary sources refer to people or places whether one can obtain new information (not previously existing). Secondary sources refer to information which has already been gathered (possibly for reasons other than the purposes of the present assessment).

7.3 Pre-existing information (secondary data)

The term 'secondary data' refers to information which is already existing, i.e. it has been previously gathered by some other person or organization. Secondary data includes many kinds of written and visual materials, e.g. reports of previous surveys, maps, organizational archives, aerial photographs.

Quantitative (numerical) data may be obtainable from the records of government agencies and other institutions. District or national statistical offices may have extensive data on file which can be obtained for diagnostic studies and impact evaluations. Qualitative (descriptive) information may be available from universities or other research institutions. Secondary sources also include the project reports and documents that have been produced for other purposes, e.g. reports of training workshops, or reports of field staff.

Obtaining data from secondary sources is obviously cheaper and easier to access than going out to the field to gather fresh information. Therefore, gathering and using secondary data should generally be considered as a first option when it is available. That said, however, all secondary data must be used with caution because it has certain inherent disadvantages (see box below).

Potential Limitations of secondary data include:

- ***Inadequacy:*** If the necessary data is not in the existing reports, it is usually not possible to go back to the same sources to get the missing information.
- ***Potential for poor quality:*** Secondary data is collected by others, and sometimes the means and circumstances of data collection are not recorded. Thus, the project using the secondary data may not be sure how it was collected and has no control over its quality.
- ***Variation in concepts:*** There can be differences in definitions of indicators (e.g. some studies may use 10-19 years as the ages of adolescence, others use 13-24; some studies may have one definition for a 'commercial' farmer or a 'cash crop'
- ***May be out-dated:*** The information may exist, but it may be old.
- ***Inaccessibility:*** Some government agencies, organizations, or individuals may not allow access to their data.

Primary data is obtained by going to the field to collect new information, i.e. it requires that a specific study be planned and carried out. Typically, primary data is needed for monitoring, as well as baseline, final and ex-post evaluations. Data gathering can be done by various methods, e.g. rapid observation by a team of trained observers (who can include staff, target population, and other stakeholders); sample household surveys by enumerators and field staff, or in-depth case studies by skilled teams.

One of the big advantages of arranging for primary data is that the project has control over what data is gathered, as well as when and how the information is collected. In this way, it is easier to maintain control over quality of information, and to do follow-up for any critical findings or missing information.

There are also disadvantages, especially the skills requirement and costs. Skills needed for successfully planning and implementing primary data collection are substantially greater than those needed for working with secondary data. Costs of primary data collection can be high, particularly if the persons doing it are relatively inexperienced (causing waste of resources, collecting too much data) or the study design is very complex.

A central principle to keep in mind, therefore, is that the projects should aim to keep collection of primary data to a minimum. Caution is needed in selecting indicators which can be readily assessed (i.e. easily gathered and analyzed). Information requirements and costs of collection should be kept to a minimum by focusing only on the most significant issues and using straightforward designs.

Examples of primary sources include:

- The target population (e.g. personal experience of issues affecting their lives; observations and opinions about the project strategy)
- Project personnel (e.g. observations about the target population they are servicing; personal experiences of the project organization)
- Other interested parties, such as agencies working with the same or similar populations

7.4 Issues affecting selection of Information Sources

There are several potential errors in selecting the sources of information for indicators in the information system. Two critical risks not to overlook in project M&E designs include seasonality and sampling.

'Seasonal bias' refers to the effects of collecting information at a specific season. Indicators that are influenced by seasonality or weather are more likely to be affected, e.g. incomes related to specific cash crops. Seasonality can also influence respondents' willingness to participate, e.g. it is unwise to expect adult household members to be home in the morning (and available for interviews) during planting season in Tanzania.
'Sampling bias' refers to errors of judgement in selecting the persons or places from which to gather information, e.g. arranging to sample only communities along a tarmac

road – and thereby not reflecting the issues of the project participants or target populations who do not live in those areas. As a general strategy, it is wise to obtain information from multiple kinds of sources so that their individual perspectives are balanced and a truer picture emerges.

Specificity of sources

When preparing the information matrix (and preferably, even when preparing the original project log frame), it is desirable that the types of sources mentioned be as specific as possible. It is all too easy to write 'project reports' in the MoV column of the log frame, or the 'sources' column of the M&E planning matrix. This can result in projecting information from (or about) an indicator that may later prove impractical.

The bottom line:

Data collection for M&E should be limited in scope and sharply focused. The main reasons for this include constraints on time, staff, skills and budgets.

CHAPTER 8

How can we know what is happening with a large population by gathering data from a smaller group?

8.1 Sampling

In the design of an M&E system, the objective is to collect indicator data from various sources, including the target population for monitoring project progress. Sampling is a strategy for selecting a smaller sub-group of the target population (intended beneficiaries) that will accurately reflect or represent the patterns of the target population at large.

The main purposes of sampling are to:

- ***Economize on the resources*** required to collect and manage the desired data
- ***Improve quality of the data***

Key questions in thinking about sampling.

Why?

Why is information being collected from these sources**?** What is the purpose of the study (survey)? For example, is it being done to gather information for planning, monitoring, advocacy, identification of vulnerable populations, ect

About Whom?

For what population sub-groups are results needed? For example, is it specifically women farmers growing bananas on at least ¼ hectare of land or is it any farmers growing at least some bananas for commercial sale?

From Whom?

Who is in the 'sampling frame', i,e., what group of persons (or households or farms, etc) will be eligible to be drawn for the sample? And what larger group is the sampling frame supposed to represent? For example, if 5 out of 10 blood donors at Nyakahanga hospital checked on the HIV-virus are found positive, can you conclude that ½ of the population of Karagwe District is HIV+?

With what Precision?

What accuracy of results is needed? If comparisons are going to be made (e.g., by sub-group or theme), how large a difference is considered important and expected? Is it necessary to know that 10 out of 100 people behave in a certain way, or is it essential to know if 10 out of 10,000 people behave in that way?

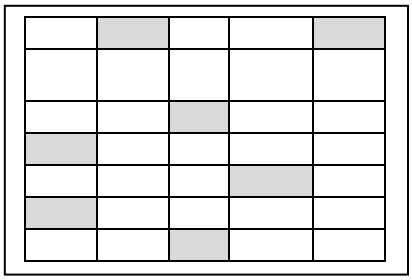
8.2 Probability sampling for quantitative studies

Sometimes, projects need to quantitatively assess changes (effects, impacts) that are widely distributed in the project area. In such circumstances, the M& E sample design should, if possible, use a 'probability sample' (see box below). This means that each and every unit of assessment (e.g., each household) in the target area has an equal and positive chance of being selected. Probability sampling relies on randomization among all of the eligible candidates, e.g., by numbering households and drawing numbers from a list or a random number chart.

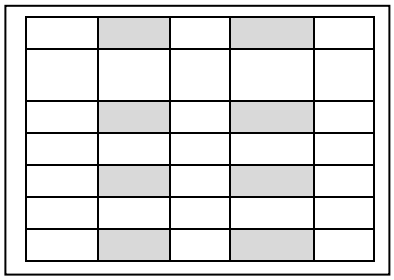
Advantages of a probability sample for a quantitative analysis.

- It allows you to measure the sampling error (the likelihood that your results are just due to the effects of sampling).
- It allows you to test the statistical significance of the observed trends (the likelihood that results are due purely to chance).
- It reduces the risk of a biased selection of sampling units.

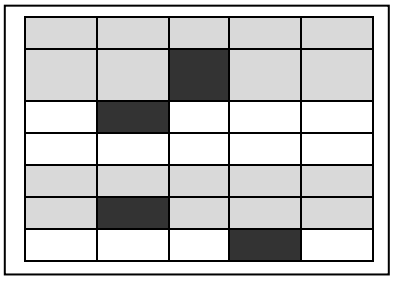
The graphic below and the following table illustrate 4 major types of probability sampling methods:



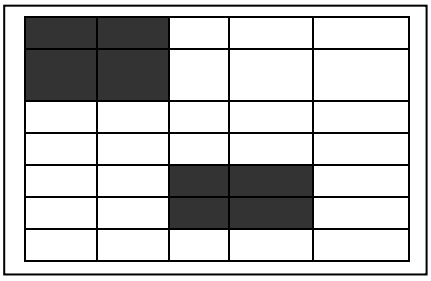
(a) Simple Random Sample



(b) Systematic Random Sample



(c) Stratified Random Sample



(d) Cluster Sample

Table 10: Comparing methods for probability sampling

METHOD	ADVANTAGES	DISADVANTAGES
Simple random sample: e.g., household numbers drawn from a hat.	• Avoids bias • Relatively simple to implement	• Requires sampling frame for full population • Samples may be unrepresentative for key sub-groups • Ignores differences among sub-populations.
Systematic random sample: e.g., every third household in a community.	• Easier to select • More likely to represent sub-groups (depending on size of the sample)	• Also requires sampling frame for full population • Samples may also be widespread.
Stratified random sample: e,g. a random selection among female-headed households, or among households growing at least 30 banana plants.	• Makes sure key sub-groups are represented in the sample. • Can fix sample size for each sub-group to get representative sample.	• Need to know enough about complete target population to divide into sub-groups relative to interests of study. • Need to use special analytical techniques when results are combined for different sub-groups especially when the groups are different sizes.
Cluster samples: e.g., random selection of 30 out of 100 villages in the target area, and then random selection of 7 households per village.	• Savings in travel costs and time • Only need detailed sampling frame for selected clusters	• May miss on important sub-groups • Communities selected may not be representative

8.3 Purposive sampling

Sometimes it is desirable to purposively (intentionally) choose the respondents in a study for a specific reason, e.g. adolescents attending a family planning clinic. The project is choosing who it is that should be interviewed or surveyed, a choice that should be made very carefully and thoughtfully. In other words, if this strategy is used, it will be very important to clearly define the selection procedures.

Purposive sampling can be used with quantitative or qualitative studies. Such selective sampling is quite different from the sampling based on statistical probabilities used in quantitative studies. Probability sampling depends on randomness for being able to confidently generalise results from a small sample to a larger population. The power of purposive sampling lies in selecting information-rich cases for in-depth analysis related to the central issues being studied.

The skill in designing the sampling strategy is in assessing the degree of variation within the project area, and how the distribution of the sampled households can capture this variation. A list of different purposive sampling strategies that can be used in qualitative studies is presented in the box below.

Purposive Sampling in qualitative Evaluation and Research

There are several different strategies for selecting information-rich cases; the logic of each strategy serves a particular data gathering and analysis purpose.

1) **Extreme case sampling:** focus on cases that are rich in information because they are unusual or special in some way (e.g. the community in a district that has taken the initiative to prohibit bush fires).
2) **Maximum variation sampling:** aims at capturing and describing the central themes or principal outcomes that cut across participants or program variations (e.g. persons of different ages, genders, religious groups, and marital status in an area considering family planning interventions).
3) **Homogeneous sampling:** picking a small sample with similar characteristics to describe some particular sub-group in depth (e.g. drop-out female P/S sudents).
4) **Typical case sampling:** using one or more "typical" cases to provide a local profile (e.g., typical individuals, households, communities, etc.).
5) **Critical case sampling:** looking for critical cases that can make a point quite dramatically or that are, for some reason, particularly important in the scheme of things (e.g., the life history of a poacher).
6) **Snowball or chain sampling:** begins by asking people in the project, "Who knows a lot about ___? Who should I talk to?" By asking a number of people who else to talk with, the sample gets bigger and bigger.
7) **Criterion sampling:** reviewing and studying all cases that meet some pre-set criterion of importance (e.g., the economic strategies of women-headed households.

Adapted from: M.Q.Patton. 1987 How to Use Qualitative Methods in Evaluation. Newbury park: SAGE Publications (pp.51-56)

8.4 Sample Size

In a project environment, M&E activities and resulting sample sizes are determined by limitations of cost, time and staff. The decision whether to gather quantitative or qualitative data in a particular case also influences decisions regarding the scale of the survey and the procedures for selecting respondents.

Realistically, sample sizes of 75-125 are adequate for monitoring purposes in most projects. The application of 'cluster sampling' is particularly effective in being able to save valuable resources.

Another approach is to use in-depth case studies of the target group. Qualitative methods are best used with small numbers of individuals or groups – which may well be sufficient for understanding the human perceptions and behaviours which are the main justification for a qualitative approach.

Example of case study approach

The DRDP project in Karagwe district could use case studies specifically as means of trying to show Household level impacts within the lifetime of the project. For instance, the sampling frame could comprise of Household 'adopters' of specific interventions such as improved farming techniques or improved environmental practices. Taking adopters as the sampling frame would allow the project to get an assessment of impact in a shorter period of time than if they sampled the whole target population. Then, from the records of adoption rates in the target population as a whole, an indirect estimate of overall impact in the target population could be established.

CHAPTER 9

How can we collect the information we need?

9.1 Selection of methods and tools for data collection

Selecting methods for data collection can be confusing unless it is approached in a logical fashion. These guidelines will try to clarify some of the main issues to consider in the search for the best methods to use. From the outset, it is worth emphasizing that rarely any one method is perfect for a given information gathering situation. Instead, using multiple methods helps to validate the monitoring or evaluation results and ensure representativeness for the various perspectives usually present in communities and development settings.

The first selection issue to consider has been mentioned earlier in these guidelines:

Secondary vs Primary Data

Question 1:
Existing or new data?

Based on the project's specific information requirements, does some or all of the necessary information already exist as secondary data (e.g. as reports, maps, photographs, diagrams)?

9.2 Secondary data

If the answer to Question 1 is YES, then the following questions can be used to assess whether the available secondary information is sufficient and useful.

Content

What is the available content, relative to the information needed? Is it only about the local context (e.g. political history, general demography, etc.), or is it specific to the nature and needs of the project?

Disaggregation

Is the information sufficiently disaggregated to be useful (e.g. by age groups, gender, or specific localities)? If not, are the original data accessible and was disaggregated information collected in the original study?

Quality of the Data

What is the quality of the available secondary information? Is it from a reliable source? Are the methods of data gathering for the information explained? Is the information in any particular resource also confirmed by any other independent sources? Is the information timely, current?

Accessibility

How accessible is the information? Is it easy to obtain copies or access for reading; or is it constrained in any way?

Extracting useful information from secondary data can be facilitated by creating and using a checklist comprised of a set of open-ended questions to be systematically posed to the data (reports, etc.).

9.3 Primary Data

If the answer to the above question 1 is NO, or if the available secondary data does not completely answer the information needs of the project, then the project will need to gather new information. This leads to additional guiding questions:

Question 2:
Qualitative and/or Quantitative?

What types of data are needed – Qualitative (visual or words) or quantitative (numerical)? What precision is needed?

9.4 Qualitative and Quantitative Data

There are two main types of information produced by the data collection process: qualitative and quantitative. The most obvious difference between the two is that quantitative data is numerical data (e.g. amounts, proportions) and qualitative data is information which can best be described in words or diagrams and pictures (e.g. descriptions of events, observed behaviours, direct quotations, maps).

Quantitative data are obviously needed when a number, rate, or proportion related to the target population must be estimated or a variable such as crop production must be measured. Qualitative data are needed when the attitudes, beliefs, and perceptions of the target population must be known in order to understand its reactions and responses to project services.

Most information systems within projects require the collection of both quantitative and qualitative data. Projects need qualitative data about the nature of results (e.g. beneficial or harmful effects, intended or unintended impacts). Projects also need qualitative data (e.g. about the distribution or intensity of the results) to ensure the accuracy and representativeness of the analysis.

Question 3:
Participatory or Non-participatory?

What orientation/approach is desired/needed? How will the process of information gathering be used by the project (or its partners)?

9.5 Participatory and Non-Participatory Data collection Methods

The main method of primary data collection used in M&E are individual interviews, group discussion and observation. Interviewing has traditionally been the most common data gathering strategy in M&E. But increasing attention is being paid by donors and projects to the value of participatory methods, many of which involved group discussion or observation.

In monitoring and evaluation, interviews with structured questionnaires are widely used for collecting *quantitative data* , i.e., data which can be processed by means of arithmetic and statistical formulas. Many participatory M&E practitioners however, share a critical view of surveys which are solely dependent on questionnaires.

Two major complains about questionnaires relate to the loss of human touch and the extent of technical expertise required . Structured questionnaires are often not well accepted by respondents and have many problems with reliability of the information collected. Doing a good job in carrying out quantitative survey studies requires specialized skills for questionnaire design. Among the problems with quantitative survey are excessive use of pre-coded questions which expect (or allow) answers only within a limited range. Such questions can be asked quickly which only elicit the answers the respondent thinks the interviewer wants.

By starting from local knowledge and empowering people, participatory approaches challenge the conventional tendencies to rely on ‘scientific’ knowledge and a strong central authority. But in accepting this challenge, project staff will need to ask themselves self-critical questions, such as the following:

- How can we be sure that the local classification of soils is really leading to the best use of this resource?

- On what basis should we assume that a traditional means of contraception is really safe and effective?.
- To what extent do perceptions of the community history in the region provide a basis for decision-making?
- In what way can we assess or measure the degree of consensus achieved during a participatory planning or evaluation meeting?
- How can we be sure that local institutions are really committed to use external support for maximum community benefits?

Table 11: Participatory data collection techniques: Some well-known examples

Technique/tool	Objective/use	Means
Participatory Mapping	To understand the distribution of activities and resources	People use the ground, floor or paper to make health, natural resources, farm or enterprise maps
Seasonal diagramming	To understand the dynamics between time of year/season and activities/events	People use ground, floor or paper to create matrix showing trends of activities/events by month/season
Opportunities and resources diagramming	To identify social and/or economic relationship or linkages between individuals, groups and institutions	People draw schematic (mobility) maps illustrating links, or use circles to show points of contact and overlaps (Chapati/Venn diagrams)
Scoring and ranking	To identify and apply local criteria for rating different items	People use objects or pictures to symbolize various issues, and then arrange the symbols that are of similar value ('pile sort') or put them in value-ranked sequence.

A question to always keep in mind during a participatory evaluation is: ***"Does this process help users generate information to solve problems they have identified, using methods that increase their capacity to solve problems in the future?"***

From Narayan, 1993

9.6 Main techniques for collection of new data

Table 12: Qualitative/Quantitative Data by Participatory/non Participatory Approach

Data	Approach	
	Participatory	Non-Participatory
Qualitative	Open-ended interviews Focus group discussions Participant observation Some PRA tools, e.g. mapping ranking, charts, etc.	Direct observation without discussion Photos (if done by outsider) Spontaneous data (e.g. letters to newspaper)
Quantitative	Some PRA tools (e.g. scoring) Sentinel surveillance surveys Self-completion of questionnaire or records (e.g. by literate farmers or TBAs)	Structured surveys Measurements (e.g. birth weights)

9.7 Primary Data collection – Methods

The major methods of primary data collection include *observation, individual interviews,* and *group discussions.* Each if these methods may be carried out with varying degrees of structure and formality, which is linked to their potential for quantitative/qualitative data and participation or not. The various methods also have different strengths and weaknesses, related to the skills and resources required for their implementation. Details about selected methods and tools are given below.

Observation

Observation may be carried out informally, e.g. by paying attention to the state of crops as one drives along a road in a rural area. It can also be done formally with a structured checklist, e.g. assessing specific aspects of the structural and hygienic status of latrines in a given community. While observation has the advantage of relying on physically observed phenomena, it is subjective and can generate mistaken conclusions based on the interpretation of the observer. For example, an observer noticed housewives in a village boiling water and concluded that the villagers were health conscious, boiling water for drinking. When questions were asked for verification, she found out that the water was actually being boiled for the husbands' baths.

Interviews

Interviews basically consist of asking questions and listening to individuals. They can be done very informally, e.g. as conversations with people met on the street or in the fields. In these settings, one question leads to the next based on the responses or answers given to the previous one. On the other end of the scale, highly structured interviews often rely on questionnaires with pre-coded, closed-ended questions that allow the respondent only a limited range of possible answers. In between these extremes are in-depth interviews, which may be done with a topic guide (a list of topics which can be asked in any order and the interviewer creates the necessary questions) or a questionnaire comprised of open-ended questions. Such questions are designed to probe and stimulate the respondent to think rather than just giving quick answers.

Structured questionnaires are easier to complete than unstructured ones and require less skill among data collectors. At the same time, highly structured questionnaires yield little insight into how people feel. With the more open-ended tools, more skills are required of the data collector to avoid being diverted from the original purpose of collecting information. Open-ended data gathering can also generate enormous amounts of data and lead to information overload for the less cautious or over-enthusiastic data collector.

Less structured interviews (e.g., in-depth, open-ended) are more flexible and allow one to revise and adjust the individual interviews or even the whole process of the study. Structured interviews, on the other hand, cannot be altered midstream. The difference between the two can be compared to being on a highway vs. being on a path in a village.

Groups - large and small

Listening and asking questions of groups included using methods and tools that range from formal to informal such as:

- Community meetings (formal, best with large groups)
- Focus groups (semi-formal best with 6 -10 people)
- Natural groups or conversation (informal, best with small groups e.g., talking with women while waiting in line at the well)

With groups, information from one individual can be cross checked with others and more than one opinion gathered. Data collectors with less-structured techniques, however, need many skills, e.g., to carry out a focused group discussion that can easily stray off track. Some individuals may try to dominate the discussion, others may have good ideas but be shy to mention them. When multiple opinions arise in a group discussion, it can be difficult determining which ones are right.

When unstructured discussion in an informal setting is used to gather information it is possible to get information without raising expectations. On the other hand, with structured group discussions, it can sometimes be difficult to gather a group, or when they come, they have expectations of some compensation for their time.

Open-ended interviewing and group techniques are best carried out with detailed note-taking aimed at catching the exact words and phrasing of respondents' answers (i.e., quotes or" verbatim statements"). Tape recording can be of great assistance in this effort, but only where and when it is acceptable to the respondents. There is need to be sensitive to communities, particularly if recording responses either with a paper and pen, and even more so with a recorder.

Table 13: Principal techniques for collection of new data: a comparison chart to facilitate selection

Techniques	Means	Resulting data	Requirements	Advantages	Disadvantages
Observation	Observation settings, behaviour, interactions, events, physical/material items. Conclusions depend on observer's interpretation unless accompanied by interviews, discussion. Can be improved with more than one observer or more than one observation.	Mostly qualitative can be quantitative, especially if done with a structured checklist	Much skill needed for adequate observation. Can be rapid	Is a good way of starting a project Can be a good discovery process	May be biased by observed persons changing their behaviour Is very subjective; needs verification by other methods
Participant Observation	Working side-by-side with members of target group, which enables discussion, observation of interactions, first-hand experience	Qualitative. Good understanding of constraints, difficulties, decisions, choices	Careful thinking needed about ethics	Can validate observations on the spot	Time-consuming Individual observer only
Individual Interviews	Inquiring into another person's perceptions about one or more topics May be structured (e.g. questionnaire survey) or semi-structured (e.g. in-depth interviews)	Qualitative or quantitative data Knowledge, attitudes, beliefs, behaviours	Skill needed in creating the interview guide or questionnaire	Can ask for the information desired Can observe respondent reactions to issues	Interviewer can easily bias the respondent
• **Open-ended interviews**	Uses a sequence of questions or topics requiring open-ended, long answers (e.g., not a plain 'yes/no' and not a number); needs detailed note-taking Includes in-depth interview and key informant interview (KI). KIs are carried out with persons having specialized knowledge about a topic	Qualitative. Good for discovery. Good on range and nature of problem. Can get verbatim answers (quotes)	Great sensitivity and skills required of interviewer May need to schedule appointments	Way of catching the point of view of the local actors Can rapidly get inside information Can revise questions if needed	Interviewer can easily influence quality and content of information Interviewer can be diverted

Techniques	Means	Resulting data	Requirements	Advantages	Disadvantages
• **Closed-ended interview (survey)**	Uses structured questionnaires: carefully organized which allow only a limited range of answers, e.g. yes/no, categorical answer expressed by a number (time period, distance, land size, etc.). If small scale, can be done in participatory way with community (e.g. sentinel survey)	Quantitative. Good for prevalence and distribution of an issue	Much skill needed in creating the questionnaire Requires time for pre-testing, training.	May be completed rapidly in the field Less skill needed in interviewers Good for getting information from large numbers of people	Usually done to (not with) the target population Yields little insight into how people feel
Group Interviews, Discussion	Asking questions and listening to groups in formal and informal settings May involve group tasks, e.g. mapping, ranking, scoring, charts, etc. (PRA) Can be informal groups such as talking with women while waiting at the well.	Qualitative. Good for range and nature of issues	Skill and sensitivity needed to keep focused and to get ideas the whole group	Sharing tasks with members of the group can result in much deeper information Inexpensive	Poor for personal information
Focus group discussions	Semi-formal discussions, based on a limited set of topics, with a facilitator and a note-taker, usually about 6-12 persons, preferably similar background	Qualitative Can be very good for perceptions, attitude	Skill needed in setting topics and facilitation	Multiple opinions at the same time Shows differences and similarities	Can be dominated by one person Sensitive personal data unlikely
• **Community meetings**	Formal discussions, may be done with a semi-structured question guide	Qualitative	Meeting place, Mobilizing, Facilitation skill	Good for brainstorming e.g. for solutions	Easily dominated Little discussion

Question 4:
Verbal or less verbal approach?

Are some of the potential sources of information non-literate, e.g. children, or adults who have never been to school? Can some of the information desired be extracted more effectively with maps, charts, photographs, drawings, or skits and role plays?

Relying exclusively on verbal methods (e.g. questionnaires) can be problematic, especially with low literate or mixed language target populations, or in situations where the desired information is not easily expressed in their words or numbers.

9.8 Verbal, literate methods

Verbal or literacy-based techniques include: questionnaires, checklists, tape recording, and diaries or self-completed records (e.g. farmer records). These methods can be less subject to bias from data collectors than observation and the non-verbal methods. However, they can also be more subject to errors or bias built into the design.

One such problem is the researcher (or evaluator) making assumptions about common understandings of concepts between himself/herself and the target community. For example, a person wanting to know about total household income may not find out about gifts, allowances and barter exchange unless they are specifically asked for since the family is unlikely to consider them as income. Another bias arising from the design can be lack of flexibility. If one is over-structured with a checklist, problems or observations of items not on the checklist may not be recorded.

If a project is using self-maintained records, such as farmer diaries or TBA records, then the data is likely to be biased toward literate members of the target group. There are, of course, ways to compensate for this problem, for example, participatory design with the target population of pictorial records rather than written ones.

9.10 Visual and less verbal tools

Non-verbal methods tend to be more effective for gaining participation of communities and target population. It is good to balance verbal methods with less verbal ones to help minimize misunderstanding and miscommunication. Non-verbal techniques can be very effective discussion starters.

Visual and less verbal tools include the use of:

- maps
- diagrams, charts
- photos, video, drawings
- role-play, skits

9.11 Combining strategies; How to improve the quality of M&E data

As mentioned earlier, information users are concerned about the issues of *validity and reliability* in findings arising from M&E activities. In conventional research, validity is usually taken to mean how close the findings are to 'reality'; and reliability is equated with constancy of findings. When it comes to participatory and action-oriented monitoring and evaluation, the concept of validity is interpreted somewhat differently. In striving for sustainable development, M&E results may be considered valid and reliable when their utilisation can be linked with an actual improvement of the living conditions of the people, providing also that the change can be replicated and sustained over time.

To help address such concerns about quality of findings and decisions, M&E can make use of a validation method known as *triangulation*. In a strict sense, to triangulate means to utilise at lease three different points of view for analysing a given event or situation. More generally, triangulation is based on the idea that using multiple sources and methods is the best assurance of the validity, reliability and completeness of information.

Two main modes of triangulation are used in participatory M&E: ***external*** and ***internal triangulation***.

External Triangulation

This is basically a comparison between the information generated by an M&E activity and data from external sources, such as censuses, official statistics, aerial photographs, or local research and technical studies. External triangulation is based on a review of secondary data, i.e. information already existing and available from national and local agencies, academic institutions or published in papers and books.

Internal triangulation

This refers to strengthening validity within the process of M&E itself, principally by the use of *multiple methods and techniques for exploring the same topic:* For instance, a description of the way in which the community uses its natural resources may be developed through a combination of observational walks, interviews with groups and a participatory mapping exercise with community members.

To meet the needs for ***representativeness*** in M&E, three simple solutions have been used most often:

Strategies to enhance representativeness of data

- ***Combining qualitative and quantitative methods:*** this can be sequential, e.g. by open-ended interviews first to assess the range and nature of responses, followed by closed-ended questionnaires to check on the prevalence and distribution of responses. It is also possible to integrate the two methods, e.g. with semi-structures interviews which use both closed-ended and open-ended questions, or rapid sentinel surveillance type surveys created with the target population.

- ***Rating and ranking techniques:*** Semi-quantitative and participatory methods of ranking can help individuals and groups of respondents to express values, opinions, and preferences about different elements (discovered through interviewing and/or observation) in a democratic, and visible way.

- ***Open analysis and discussion of findings during the data collection phase:*** Analytical discussion of findings can be held with groups which are representative of specific stakeholders, information users, and/or the community at large. These discussions can focus on the prevalence, interpretation, and validity of the findings. The meetings can also explore the significance of emerging issues and elicit recommendations for identified problems or constraints to the project.

9.12 Examples of data collection methods

Example 1: Community Reproductive Health Project

Intermediate Objective: Increased Number of Women Seeking Maternal Health Services at a Health Facility				
Indicators	**Sources of Information**	**Methods for data collection**	**Who to collect**	**When to collect (Frequency)**
# of women referred early to prevent obstetric complications	HMIS records, Health-unit records, Community Women, TBAs, Service providers, Referral units	*Secondary data:* Review of health service records, including TBAs' records Routine collection of health service statistics *Primary data:* Key informant interviews Structured questionnaire	Service providers TBAs Project staff Partner staff Community members Consultant (for evaluation)	Routine data: daily at service points Monthly review of service records Mid-term & final surveys Annual surveys

Example 2: Agricultural Innovations Project

Intermediate Objective: Increased Number of Farmers involved in innovative, new agricultural produce & practises				
Indicators	**Sources of Information**	**Methods for data collection**	**Who to collect**	**When to collect (Frequency)**
% of participating farmer HHs that report increased marketable produce	Heads and spouses of participating HHs, Farmers' records, Marketing group members, Some non-participating HHs in same area	Qualitative PRA ranking to assign value to levels of increase, Focus groups with selected participating HHs, Mapping, from PRA and records, survey of participating HHs	Field Officers and Project Officer (because of their contact), Marketing groups, and other participating farmers. Consultant and project staff (to train staff and for unbiased findings)	Baseline Mid-term Seasonal (after harvest) End of project

CHAPTER 10

How to understand and give meaning to raw data?

The words "data analysis" often are a source of fear and apprehension for many project staff. Undoubtedly, analysis can be overwhelming, particularly if the amount of data to be analyzed is unmanageable, or if the skills or technology for performing data analysis are lacking. However, analysis need not be a complex function involving the use of sophisticated computer programs and technical experts.

The planning for an M&E system should include arrangements for analysis and interpretation of all data that is collected. In this way, the project can ensure that raw data is converted into useful information for facilitating decision-making and other applications. This may seem like a common-sense statement, yet there are countless examples where valuable data has been rendered valueless by remaining unanalyzed.

10.1 General steps in Data Analysis

The following six steps for organizing and analyzing data can be applied to either qualitative or quantitative findings. Additional specific comments about specific strategies for qualitative and quantitative analysis follow this general section.

Suggested five steps for the analysis and organization of data are below:

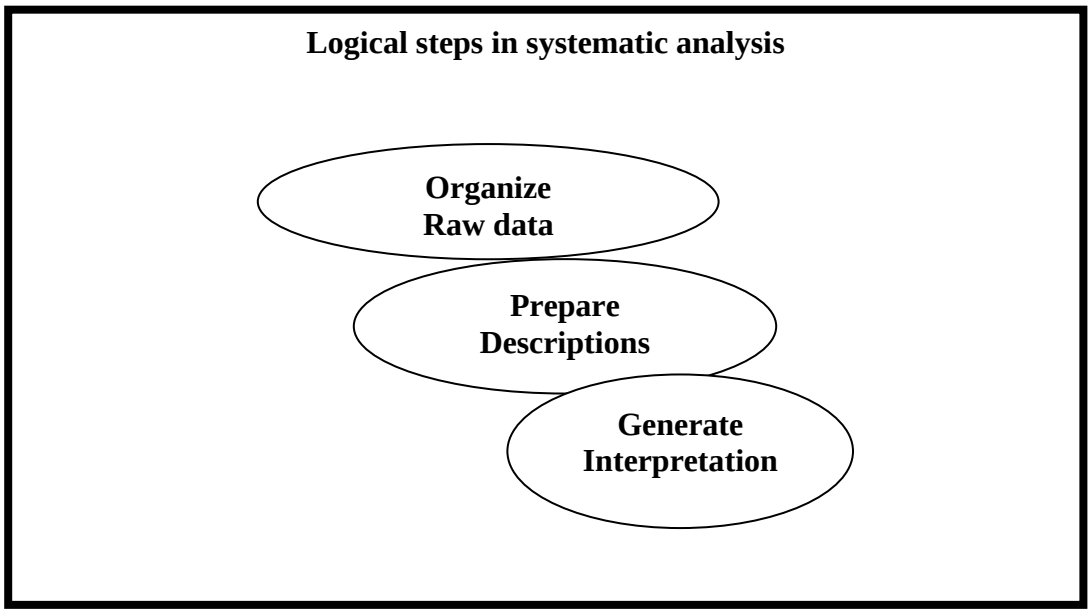
First - go back to the Original objectives and Intentions of the study

The original problem should drive the analysis. Just as the project is based on a logical framework, the conclusions of a project information exercises need to be logical. Conclusions about specific content issues should be clearly linked to the overall project and the objectives of the study (evaluation, review, diagnostic study). The connecting linkages should be traceable through the methods of data analysis, data gathering, sources of information and indicators.

Always come back to the reasons for the study, and then regularly weigh the available resources and the value of new information. It is easy to be overwhelmed and 'drowned in data'; each new 'finding' or point almost begs for its own full consideration. On the other hand, it is also possible to over-examine a relatively trivial point with too much complexity in the approach; rather than attaching too much importance to some small detail that is present, the significant finding may be a much larger absence of data in another area.

Second - remember to think of 'facts' and their 'interpretation'

Start the analysis process by assembling all the data; a checklist for the planned data will be very helpful in cross-checking against the actual data now present. The checklist might cover: how many focus groups from which locations, how many of any other methods, etc. The original data (questionnaires, interview notes, social maps, etc.) needs to be thoroughly checked to be sure all pieces have adequate identifiers (e.g. place, time, date, who was responsible, who were the respondents, etc.). Check all the data for completeness, eg., make sure there are no missing pages, missing answers, or pages which are loose and separate from their sessions.



The *description process* is a way of extracting 'facts' from the data and developing generalization about the sample population. The following steps will be helpful in this activity:

- Write out lists of issues (themes, indicators), including the key ideas in each sub-category.
- Note any emerging issues, i.e. ideas that are repeating and substantive, but not included in the original plan of study.
- Where appropriate, do tabulations, i.e. counting answers (or observed events, etc.)

The final level, *interpretation*, is the most complex; it is the process of presenting *meaning* rather than just a description. At this stage, one will be checking carefully on the representativeness and reliability of the data. One should look purposely for contrasting cases and be sure that all cases are developed to the same amount of detail.

Look with care for researcher effects on the respondents and note any researcher bias in the interpretation. Social desirability for certain outcomes can alter the information gotten and its interpretation. The researcher's age, sex, ethnicity, personality, and other aspects will influence what he/she is told or allowed to see and how he/she perceives the information received.

Third - discuss the Findings and emerging analysis

The process of analysis is continuous, beginning already when the pre-testing is going on, and continually being refined during the course of the whole exercise. It is not just an isolated event at the end of the data collection. The persons responsible should feel comfortable asking new questions of their colleagues, other information users, and the respondents at any stage in the process in order to help clarify the evolving analysis.

Reflect on the findings with other staff, M&E team members, or participating information users/stakeholders. Different perspectives can help clarify puzzling issues and strengthen conclusions. Multiple perspectives are also more likely to generate solutions and recommendations that are feasible and relevant.

Fourth - Consider any Limitations to believability

As mentioned in Chapter 2, information users have some common concerns about the quality of information. Accuracy and validity: is the information true and right? Relevance: is the information relevant to user interests? Timeliness: is the information available in time to make necessary decisions? Credibility: is the information believable?

Fifth - Make specific recommendations

Making conclusions and recommendations as specific as possible will increase their usefulness. Be very clear who will (or should) be responsible, by what time an action is expected, and how will it be evident to the project management (or other information users) that a response has occurred.

10.2 Specific Data Analysis Methods

There are two major types of data analysis methods, quantitative and qualitative. Both of these methods aim for 'objectivity' by trying to minimize the subjective or individual point of view. Quantitative methods are used with numerical data, and the analysis is done by statistical manipulation. Qualitative methods use narrative or pictorial information for analysis of content and meaning. These methods have a positive interest in the consequences of differing points of view. The process of analysis should be systematic and verifiable, even if some of the qualitative data seems 'soft' compared to 'hard' numbers. At the end of the process, another researcher should be able to arrive at similar conclusions from the same set of data.

10.3 Quantitative Techniques

Data from closed-ended survey or most monitoring questions can be easily quantified, i.e. expressed in numbers. Once the data is in numbers, it can be handled with mathematical or statistical techniques. All of the statistical techniques listed below do not require a university degree; they can be done with a hand calculator.

Descriptive statistics

These statistics are fairly straightforward ways of summarizing a single set of scores or numerical results (e.g. the numerical pattern or results if everyone took a test on what they learned in the workshop). They are relatively simple concepts, used in everyday life. Tallies (totals), frequency (sub-totals), averages, proportions, and distribution are among the most common descriptive scores. Two other descriptive concepts are also important: prevalence and incidence. The concept of *prevalence* refers to how many people have a specific condition (or show a specific attribute like a behaviour) at a given time. For example, the proportion of farmers in a ward who mulch their bananas is an indication of the prevalence of mulching practices. The concept of *incidence* refers to how may new cases arise in a given period of time (or how many persons newly demonstrate a specific condition or behaviour). For example, how many farmers newly adopt growing beans within the span of a year.

Inferential statistics

These are somewhat more complicated techniques, but useful analyses can still be done within the capability of hand calculators for monitoring and evaluation purposes. The two main categories are:

- examining differences between groups, whether matched or independent (e.g. assessing differences in impact indicators between groups that have participated in project interventions and control groups outside the project area for an ex-post evaluation);
- examining relationships between variables, such as cause and effect relations (e.g. assessing differences in the numbers of people who report changing their family

planning behaviour after seeing a video programme versus receiving individual counselling).

10.4 Qualitative Techniques

Analysis of quantitative or numerical data can be very seductive. The researcher can manipulate a set of 'facts' and it comes out the same way each time; there is a sense of accomplishment and confidence that it must be 'right'. However, if the question and/or the answer was ambiguous, the researcher cannot be sure his/her interpretation is reliable unless qualitative data and qualitative methods were also available for cross-checking.

Unprocessed, raw data
Sometimes, one can or does use the direct content from the respondents because they are so eloquent in discussing issues that directly affect their lives. Larger examples might include direct unedited texts, maps/pictures, or films that are presented without explanation except that given by the respondents themselves. More often, small, selected extracts from the respondents are used as typical or illuminating quotes. It is sometimes difficult to decide which quotes to use; the selection will be easier, however, if one always comes back to the purpose of the study.

Simple description
Read the full text of all data sessions (interviews, focus groups, observations, etc) from beginning to end. First look for passages (paragraphs or sentences) that talk about the original topics planned in study. Using the right hand margin, you can mark all the passages that relate to each of the planned and emerging themes. Cluster the passages by their major themes this can be done, for example, by photocopying or writing the passages on cards and physically grouping the ideas. Review the various sub-groups within any of the major themes; determine whether the listing is complete.

Generating meaning, i.e. interpretation
The key elements at this point are building a logical chain of evidence, seeking plausibility (does it make sense or not?) and assessing significance of the results. Working with qualitative data requires good *summarizing skills and insight capabilities* in order to extract meaningful content from the often long and wandering statements provided by respondents.

A variety of useful aids are available for thinking systematically and logically about this data, e.g. diagrams like organizational charts, flow charts, growth charts, or maps. Matrices (tables) can be produced that allow 'eyeballing' the data for trends and patterns. Other helpful approaches are checklists and various ways of clustering the variables. Consider the use of various *qualitative analysis matrices*.

Regarding plausibility, check representativeness; for example, when several people are consulted about the same issue, do they give several different opinions or is the same

opinion reflected each time? Check for researcher influence, e.g. do different interviewers get very similar or very different responses from female farmers? The bottom line on plausibility, however, is checking with the informants themselves - does the analysis make sense to them and their perceptions of how things are?

Rating the significance of findings is a process of prioritizing the most important results for inclusion in the final report. This ranking of importance might be done on the basis of range of respondents' answers (agree/disagree, strong/weak), typical responses (most frequent), or extremes of responses (quite apathetic, very affirmative, etc.). It can also be done by seeing how often the issue was mentioned by the respondents, how strongly they felt about the topic, how much risk they felt was linked to the topic, etc. Note that it is possible, even desirable, to include diverse or opposing options and statements.

Matrix: Example of Analysis Logic

IG: Increased Number of Women Seeking Maternal Health Services at a Health Facility					
Indicators	**Sources of Information**	**Methods for data collection**	**Value**	**Methods for data analysis**	**Who to analyse**
# Women referred early to prevent obstetric complication	HMIS records Health Unit records	Routine collection of health service statistics, Review of health service records	Available to a certain extent May be inaccurate Staff & partners able to analyze Limited by standard govt. formats	Statistical: frequencies, proportions and comparisons	TBA, Supervisors Project staff Partner staff: DHMT, H/U in charges
	Community Women	KAP survey: structured questionnaire	Surveys expensive	KAP Surveys: quantitative & qualitative synthesis	Project staff & Consultants
	Health workers TBAs	Key informant interviews	Wider scope flexible over time	Qualitative summaries	Project staff and partners

CHAPTER 11

How can we circulate and use the information effectively to ensure action?

11.1 Format of Information

Information needs to be well present so that it is usable. Formats for presentation will depend on the anticipated users; not all ways of presenting information are appropriate for all users. For example, the format for sharing the results of a reproductive health project with a group of TBAs is likely to be quite different from the format expected by a donor agency. Good quality information will go unused if it is not presented in a suitable way. The following ideas may be helpful in determining how to present information:

Guidelines for presenting information

- Know your audiences (information users)
- Know what they need to know, and why (applications)
- Know when the information is needed (timing, frequency)
- Relate the information presented to the anticipated applications (uses)
- Choose presentation methods that fit the audience (e.g. not using written materials with non-literate audiences, or very long reports for busy politicians)
- Choose a variety of ways to present information (figures, numbers, pictures etc.). Users digest new information in different ways and providing a mix of methods ensures that it will be accessible to all.

11.2 Flows of Information

Project M&E systems are generally designed as 'reporting systems' which have a tendency to exclusively serve the information demands of the project management team, the higher echelons of the national government (policy making level) and the donor. Unfortunately, information usually flows only one way - from the target population upwards.

Among the reasons for this one-way flow are:

- Reports are demanded so frequently by higher level users that project staff do not have the time to use one report before the next one is due.

- The standard type of information contained in reports does not permit the higher level users to generate significant comments, e.g. progress reports that report only on whether targets are being met or not.
- The various information users do not perceive that it is their responsibility to give feedback to the information providers (including to the target population).

Tracking the feedback of information from users back to providers is a key issue for ensuring that M&E information is actually being used. If the target population gets information in a usable way, they can be empowered to participate meaningfully in project planning and activities related to their problems and needs. Two way dialogue also helps ensure motivation in the community to continue involvement with the project.

Ideas about 'downward flow' of information are presented in the next section.

11.3 Dissemination formats

Project information (whether it comes from baseline survey, monitoring, evaluation or diagnostic study) can also be disseminated (apart from the normally practiced upward reporting requirements) through a range of outputs (products), from discussion meetings to advocacy papers, from brochures to detailed analytical reports.

Advisory meetings

The validity and utility of analyses of project information can be enhanced by advisory discussions with various stakeholders and users before the report is finalized. At least two different kinds of workshops can be held for presentation of preliminary project information system results. The first level is a very practical session with representatives of the study communities and target populations. A second level is a more technical workshop with managers, professionals, agency representatives, and donors.

A basic purpose of these advisory workshops is to allow information users and project stakeholders to see the preliminary data before a final report has been written. In this way, data interpretation also becomes part of their responsibility, and not solely the domain of the team producing the information. A second major objective of the workshop is to obtain agreement on the implications of the data for the project.

Dissemination meetings

In addition to written documents, target communities and/or districts where the data was gathered can also benefit from multi-sectoral planning meetings to generate local strategies for identified issues. A consensus building seminar will provide an opportunity to bring together a variety of people, many of whom would not have access to, or time to study, the formal reports. Importantly, the seminar can be the

occasion for an interchange of ideas and experiences between those who carried out the study, (both researchers and staff), policy makers and planners, district level officials, representatives of other sectors, and community leaders. An interactive workshop format can promote mutual exchange of ideas and provide important insights into alternative strategies for dealing with some of the issues raised during the assessments. Representatives of the media can also be appropriate as participants in this session, since they can be the means of sharing the results with an even larger audience.

Other widespread dissemination

The project should consider diverse methods of dissemination to ensure maximum and widespread use of the findings. These include various methods in order to reach policy makers, professionals in different fields, volunteers and activists in the community sector, and the target population themselves. Seminars and workshops are valuable, as are mass media interviews (e.g. radio has a wide listenership in vernacular languages in Tanzania) and press releases. In addition, the findings can be circulated through academic channels via books, journal articles, newsletter, and other print media which serve those working similar target populations.

11.4 Writing Process and Style

The following guidelines are useful when writing reports

Be brief, concise, to the point

The report writer(s) should exercise judgement and restraint. It is not necessary to report every minor fact, occurrence and detail. Expand only on the really important data, condense the less important, and recognize that some matters do not require reporting at all. In a really well written report, the reader should be able to understand, on first reading, the main findings and conclusions, without having to refer to the appendices.

Proper balance between text, tables and diagrams makes the report easy to read, as well as clear and informative. It also results in considerable economy of space, as text without supporting tables and diagrams tends to become too long and wordy. Avoid repetition, it lengthens a report unnecessarily and bores the reader.

Use simple, clear language

Use simple words where possible, rather than unusual or high technical words. A common difficulty to be overcome in an M&E report is the diversity of educational backgrounds among the intended readers. Avoid a stuffy style. Long sentences with too many ideas are confusing. It is nearly always possible to break up long, involved sentences into several shorter ones that are clearly understood.

Divide the text into short paragraphs that concentrate on a single aspect or idea. Link the sequence of paragraph themes by careful use of the first and last sentences of the adjoining paragraphs. The feeling of continuity is increased if the first sentence of the next paragraph takes up the topic mentioned by the previous sentence.

Follow a logical Sequence of presentation

A clear, consistent, and logical order in which the topics are discussed is immensely helpful to the reader for two reasons. First, a logical sequence is much easier to understand and to follow. Second, the serious reader will need to refer back to earlier sections of the report as he or she studies it. Referral to other sections is much easier if the report has a consistent and logical order. For convenience of cross-referencing within the report, include some logical system of numbering and headings for sections, sub-sections, tables and diagrams.

Avoid unsupported Statements and recommendations

All conclusions should be backed up with actual data. Intelligent readers will be unconvinced by emotional and subjective statements. Unsupported statements may lead the reader to question the reliability of the writer/researcher to the point of rejecting or ignoring the entire report. Look back to the objectives, reflect on how the actual results obtained relate to the objectives. Remember that it can help to understand the issues by including opposing opinions, where they exist.

Be pragmatic and constructive

A good evaluation report will be practical in orientation, conclusions and recommendations. In this way readers can easily utilize the evaluation results in their own working situation. A further justification for the pragmatic approach is that project evaluation and monitoring reports are not principally scientific documents in the first place; instead, they are tools to produce improvement in project strategies and outputs.

Reports also need to be tactful and constructive rather than negatively critical. If the writer fails to do this, then the report is unbalanced and will lose the interest and concentration of all but the most determined and dedicated readers. Instead of becoming widely read, the report will, at best, remain with a small circle of specialists. Specialists are not always the people with the influence or the resources to help implement the recommendations of the report.

Make the final product attractive

Make the report pleasant to read and well laid out. Start with an attractive cover, take pride in your hard work and make the end result look nice. Break up written text with appropriate graphics. Some information, e.g. discussions and conclusions, is best conveyed in words and text. Other information is better understood when expressed visually as tables, charts and diagrams. Information presented in this way is quick to understand and it provokes thinking. Maps are particularly useful in presenting data such as catchment areas, population density, or farming systems.

Use firsthand, direct quotations from different perspectives, e.g. target population, community leaders, service providers, planners, etc. Quotes give dry text more flavour and a sense of reality. As much as possible, quotations should be left in the phrasing and words of the respondents. Not only will the report be more readable, but people from the target community will also be more likely to identify with the content and feel that the report is truly or usefully addressing their issues and concerns. Be sure to include a minimal identifier with the quote, (e.g. participant Workshop on women's rights, Mabira Ward); this can help the readers to identify patterns without breaking confidentiality.

11.5 Overview of the final report

The final report should include a discussion of the qualitative and quantitative data collected during the study, organized and analyzed in order to provide the project with information regarding:

- the magnitude of current problems;
- the achievements and constraints of the existing project with respect to the expected impacts on these problems.

Findings and recommendations will be most usable if they are prioritized in order to enhance planning that can address the most important issues. The final report should provide adequate information upon which to base technical and political decisions to improve the project, ideally including an action plan of the coming program period.

11.6 Follow-up

Two areas of follow-up are particularly recommended.

Strategy implementation and subsequent evaluation
Once specific plans have been designed and strategies implemented in response to the findings, appropriate indicators of output (e.g. did the proposed revisions of the project actually get started) as well as effects (e.g. what where the perceptions and behaviours of the target population in response to the new activities?).
Subsequent analyses

Although project information systems have been presented as a relatively rapid action-oriented research strategy, the richness of data they can generate makes it highly desirable to consider additional or subsequent analyses. One such application is to make the data set accessible for secondary analysis by other researchers, e.g. graduate students, planners from various sectors, etc. A second application is to make comparisons between the findings of the study with other research studies. Finally, they are likely to be a number of potential operational research topics emerging from the study which could be prioritized and developed into new proposals for funding.

CHAPTER 12

How do we organize M&E in our day-to-day work?

Having explored the various elements of an information system for projects, it is now time to consider assembling these elements together as a total M&E plan. The sequence of steps developed in the previous chapters can be used as a logical path for preparing an M&E plan within projects.

12.1 A Project M&E-Plan: step-by-step

Goals	State the project (final) goal and related intermediate objectives and plan for its' assessments. This is principally done through a baseline survey, mid-term and final evaluation. Design issues to be considered including whether to use 'before/after', 'with/without', and control groups.
Indicators	List indicators for each objective which will most accurately indicate their achievement. Specify the data to be collected for each indicator.
Data collection	State the data collection methods, tools, data sources, data gatherers, and dates. Show which is routine monitoring and which is evaluation.
Data analysis	Explain how the data will be analyzed - description and interpretation.
Dissemination and use	Describe the method to disseminate information to proejct staff and communities and how it will be used to improve the project.

Outline of a formal M&E plan - An example

Table of contents
Executive summary
Project background:

- General, project objectives, strategies, conceptual model, current status

M&E background*:*

- Process of designing the M&E plan, operational terminology

The M&E plan:

- ***N***arrative explanatory statements
- M&E matrix: project log frame objectives, indicators, sources, methods of data gathering and analysis, frequency of collection, circulation of results
- Project risks/assumptions (including relevant indicators, means of verification)
- Project management (indicators, means of verification)
- Lines of communication and feedback mechanisms
- Monitoring chart: monitoring activity, frequency, person responsible, timing
- Evaluation chart: activity, person responsible, timing

Useful annexes:

- Forms (quarterly/annual monitoring, key questions for evaluations, etc.)
- GANTT chart for timing of M&E activities
- References used (including specific project documents)

12.2 Allocating resources: Time, Staff, Budget

In order to develop a final M&E plan, one of the intermediate steps will be assembling sufficient management information about tasks, persons responsible and timing. This is an essential step for making decisions about the allocation of resources, including time, personnel and budgets.

Common logistical problems with M&E

- Cost overruns, e.g. M&E budget line used up with the baseline study.
- Project management tasks on a 'controlling' role, e.g. lack of staff and target population participation in M&E.
- Donor (or project) insistence on external consultants with inappropriate skills and lack of local knowledge
- Donors adopt a demanding, not consultative, position
- Information system ignores socio-cultural values of the target population.

12.3 Data Management

Data generated in the process of M&E comes in many forms, e.g., maps, diagrams, field notebooks, computer generated spreadsheets, etc. There has to be a common system of managing and storing data within a project. Among the consideration is whether the information is expected to be the common property of both providers and user. If so, it will need to be kept organised in a form and location where both groups can have access to it. Ideally, management of data should be centralised and co-ordinated throughout all the categories of users.

How the data is managed has implications on the sustainability of the M&E system itself. For example, if the data is kept exclusively on a computer, it will be difficult to involve people who lack access to the computer, don't know how to use the computer (or the software) or don't have the resources to maintain it.

The bottom line:

A good M&E system is useful to its information users, practical and feasible to implement, timely, conducted ethically, and technically sound.

ANNEX 1
Glossary

Activity

A specific project task that requires resources (personnel, funds, time, etc.) and transforms the resources into outputs. E.g. training sessions, workshops, etc.

Adoption

The acceptance and application of project interventions by the target population, whether governments or rural households. Adoption may be 'primary' (occurring among persons who have been contacted directly by the project) or 'secondary' (occurring among persons who have learned about some portion of the interventions from primary adopters).

Assumption

Circumstances or conditions important for the success of a project about the environment in which the project takes place. They can include assumptions about outside influences (e.g. external conditions such as trends in weather patterns or national economies, or the role of government or other agencies), and assumptions about participants (e.g. that women in a target group can control HH income, or that farmers can control grazing on fields planted with trees). Even though a project may not have direct control over many of these factors, it is important to state them (in log frame), and to monitor them during the life of a project, so that changes can be made in project design if necessary.

Baseline study

A preliminary assessment of target populations carried out shortly before starting implementation. Baselines collected at the outset of a project (or an activity) to establish the pre-project conditions against which to measure future change. The information gathered (and analysed) in the baseline consists of indicators specifically chosen for their anticipated use at a later time to investigate project effects and impacts. The investigation is done by carrying out repeat assessments using the same set of indicators after the implementation of project interventions (see 'before and after'). Indictors (and methods of data collection and analysis) used in baseline surveys may be qualitative or quantitative.

Before and After (design)

An evaluation design that uses the data generated in the project baseline for comparison with a comparable study after project interventions have been in place for some time. Typically, this means a repeat data collection similar to the baseline will be carried out at the end of the project. The follow-up survey can also be done some years after the project when there is concern about sustainability of impacts (i.e. an 'ex-post' evaluation).

Beneficiary

Direct beneficiaries are individuals who receive services or resources directly from the DRDP or through a joint implementation partner. This category is sometimes referred to as participants, clients, or recipients. Indirect beneficiaries are individuals who benefit indirectly from the project.

Bias

Distortion of data/information (whether monitoring, evaluation ,or research) brought about by various errors: planning (design error), selection of respondents (sampling error), collection (interviewer error), social desirability (respondent error), or analysis (researcher error).

Closed-ended question

An evaluation design for determining whether any changes observed over time n the target community are actually effects and impacts due to project interventions. The control group design requires identifying and periodically assessing a non-intervention community (i.e. a group of persons or households that will not be getting project interventions) for comparison with project target areas. This 'control' community must be as identical as possible to the project target communities, so that comparisons between the two communities can show which changes are attributable to the project. (see with/without).

Data

Facts, figures, opinions, observations which become information when they have been analysed and interpreted.

Data sources

The origin of information, including people, records, documents, soil, water etc.

Diffusion

The spread of knowledge or practices beyond the point of initial project contact (sometimes referred to as 'secondary adoption'), e.g. the spread of improved banana cultivation among farmers who have not been directly taught or visited by a project. This spread is usually a desirable effect of projects, but it may require special methods in sampling and evaluation studies in order to be identified and assessed.

Effects

Effects refer to target population responses (e.g., changes in behaviours), or improvements in system conditions (access to or quality of resources) that result from the use of goods and services provided by the project. Project effects describe results in the target populations that happen at the Intermediate Objective level as a consequence of some degree of exposure to project interventions. These intermediate level changes provide beneficiaries with the necessary tools to bring about sustainable improvements in their well-being (i.e. leading to project impacts). Effects can be positive (beneficial) or negative (harmful, e.g. adopting cash crops that increase women's labour without increasing their access to funds). People who act as a result of project interventions may or may not be aware of the project (e.g. diffusion of farming practices to farmers who have never been directly contacted by the project, or "secondary beneficiaries").

Effectiveness

The extent to which a project meets its objectives through its interventions (delivery of goods and services).

Efficiency

The extent to which a project uses resources appropriately and completes activities in a timely fashion.

Enumerator

A common term of the person who collects data to complete a structured (quantitative) questionnaire; contrasts with an interviewer.

Equity

The extent to which the resources and opportunities generated by the project are equally distributed within and among households. It pertains to the allocation of resources according to gender, ethnicity, social status and class.

Evaluation

An evaluation is a careful examination and analysis of on-going or completed project. Evaluations usually include examination of the project design (goals and plans), implementation (inputs and outputs) and results (effects and impacts). Typically, evaluations look at project efficiency, effectiveness, sustainability and relevance. Attention is paid to both intended and unintended results, and to factors affecting the level and distribution of any benefits produced. The main purpose of evaluation is to guide decision-makers.

Ex-post evaluation

This is an evaluation conducted at a substantial time interval after the termination of project interventions, e.g. 5-10 years after the end of a project. The purpose of ex-post evaluations is to investigate the sustainability and nature of long-term project impacts. In reality, ex-post evaluations are rarely done because few donors are willing to fund them.

Final evaluation

This is an evaluation that occurs at or near the end of the project (sometimes referred to as "summative" evaluation); and contributes to the end of project summary report. In order to examine the effects and impacts of the project, the final evaluation is usually linked to the conditions in the target population before the project by collecting and analyzing similar information to that done in the baseline study.

Final goal

In log-frame terminology, this refers to what the project hopes to achieve in the long term (i.e. beyond the life of the project). Usually stated as substantive improvements (impacts) that are expected to take place in some aspect of the lives of the project participants or target population.

Focus group discussion

A semi-structured discussion with a small group of individuals selected on set criteria so that they are relatively homogeneous. The discussion s guided to elicit individual and group ideas, reactions, opinions, perceptions, and solutions to a short list of key topics.

Hypothesis

In terms of project design, refers to resumed correlations between outputs (causes) and effect, and between effect and impact. For example, a common hypothesis is that the provision of sources of clean water will lead to reduced incidence of water-borne diseases. If a hypothesis was proven under essentially similar conditions it may need to be tested as a part of project's evaluation design.

Impacts

Impact refers to fundamental and sustainable changes in the human conditions or well-being of target populations, reflecting the satisfaction of basic needs. Basic needs include food, health services, favourable environmental conditions (potable water, shelter, sanitation), primary education, and community participation. To obtain the essential resources necessary to meet basic needs, households must have adequate access to finances, skills, time and social positions. To qualify as impacts, these changes should be observable at household level, and be able to be attributed to project interventions. Because of the duration of time needed to attain household level impacts, they may be difficult to identify within the lifetime of a project.

Impact indicators are usually the ones associated with the final goal level in the project's logical framework. As with 'effects', impacts may be intended or unintended and beneficial or harmful.

Implementation

This phase in a project is when project interventions directed to target populations are taking place. The project is drawing on the resources specified in the project document (and log frame) to carry out activities toward the described project objectives.

Indicator

Something which provides basis to demonstrate change as a result of project activity for a target population, i.e. for measuring progress towards objectives. It may express quantitative elements (i.e. be written as numbers) or qualitative aspects (i.e. descriptive words). An indicator is like a 'marker' which shows what progress has been made (target show what progress is still expected. Indicators may also be summary measures, e.g. when they are *composite* of several lower level indicators into a single *index indicator*, such as the human Development index used by the UNDP.

Input

Inputs are the resources needed by a project to implement activities. These include the human and financial resources, physical facilities, equipment, materials, in-kind contributions. Inputs only occur during the life of a project. Inputs are one of the items routinely tracked in project monitoring, especially for cost-effectiveness and accountability.

Intermediate Objective

A log-frame term that states the changes intended by a project in systematic or behavioural conditions in order to reach the final goal.

Interventions

The physical items and services to be delivered through a project to its intended target population.

Key informant interview

An interview with a person having special information about a particular topic, e.g. someone with first-hand experience of a certain condition, someone who is providing training or other direct services to people with a certain condition, or in a particular community, etc. These interviews are generally conducted in an open-ended or semi-structured fashion, allowing the interviewer to probe and follow up topics of interest in depth.

Logical framework

The logical framework (log frame) is a planning tool, designed before the start-up of project activities. The main elements of the log frame illustrate the project's hierarchy of objectives and targets, its indicators for assessing achievements of the objectives, sources of the indicator information, and key assumptions outside the scope of the project that may influence its success. A log frame is constructed in a systematic and logical manner based on an analysis of information collected on constraints and opportunities for interventions to a specific problem. The log frame is referred to continuously throughout the life of a project, it is the most important document telling in detail what the project intends to achieve, and how it intends to achieve the objectives.

Mid-term evaluation (mid-stream)

Mid-term evaluations are generally carried out about half-way through the life of a project, with the anticipation that implementation of project interventions is in full operation. These evaluations, which are also known as 'formative' evaluations, are intended principally to assess project progress and make recommendations for strengthening the project during its second half.

Monitoring

Monitoring refers to the on-going process of regularly collecting, analysing and using information to guide project implementation. The main foci of monitoring are project inputs, performance and progress. A well designed M&E plan links monitoring information with evaluation, including periodic measurement or output and effect indicators (when feasible). An effective monitoring system is crucial to good project management.

Open-ended question

A question that allows for a full-text, freely given answer in the respondent's own words rather than a closed-ended question that restricts responses to predetermined categories.

Outcomes

Outcomes (or results) often refer to all that happens as a consequence of a project's interventions. This concept is usually divided into the more specific terms of effect and impact.

Outputs

Outputs are the products that the project produces. They are direct results of project control. They are usually expressed numerically (quantitative data) and have a time frame. Outputs occur within the life of the project, and are among the items assessed in routine monitoring. Monitoring indicators of outputs allows projects to track project efficiency, i.e. achievements versus expected targets. Project outputs may refer to: a) the results of training, such as the number of farmers trained in improved

agricultural techniques (note that this can include assessment of changes in knowledge, skills and altitudes); b) capacity building, such as the number of extension staff trained, water systems built committees established; c) service outputs, such as n increase in the number of project locations; and d) service utilisation, such as the number of people fed, or number of children measured.

Participation

The active involvement of intended beneficiaries in project needs assessment, design, implementation, monitoring, evaluation and decision-making. The main purposes of participation are to encourage self-determination and sustainability of the development process.

Pre-code

A method for structuring and limiting the possible responses to questions on a questionnaire. This technique can facilitate rapid data gathering, but requires very careful design and pre-testing to be sure that the instrument is accurately obtaining the desired information.

Pre-test

To be sure of efficacy, accuracy and feasibility, it is essential to pilot test (make a trial run of questionnaires and other data gathering instruments with a small group of respondents before conducting an actual data collection exercise. A full-scale pre-test would also give a trial to methods of respondent selection, data management and analysis.

Primary data

Data collected specifically to meet information requirements of a project, e.g. a baseline survey or a set of focus groups for an evaluation. Is contrasted to secondary (existing) data from sources outside the project.

Probability sample

A method of selecting respondents (or other sources of information) where all members of the source group (e.g. households in a project target area) have an equal chance of being chosen. Also known as a 'random sample'. Can be combined with purposive sampling, e.g. a random sample of female-headed households.

Process

The interventions or set of activities through which project's inputs are used to obtain the expected outputs. These activities include management and supervision, counterpart training, logistics and service delivery, technical assistance and the monitoring and evaluation information systems.

Purposive sample

A method that selects respondents (or other sources of information) based on specific, defined criteria. The criteria are not based on mathematical (statistical) probability, but other intentional choices, e.g. extreme examples for in-depth study that illustrate the potential range of a given situation.

Qualitative information (or methods)

Qualitative data is descriptive, expressed in words or visual/auditory images, and gives a more holistic picture of a situation than one can get with quantitative data. Qualitative approaches are particularly useful for describing the range and nature of issues in a given situation; for eliciting perceptions, beliefs, and explanations; and for spontaneous discovery of issues emerging from the field.

Quality of services

Quality is assessed by the range of choices that clients have, the completeness of information given to clients, technical competence of the provider, quality of interpersonal relations, and appropriateness of services available.

Quantitative data (or methods)

Quantitative data is numerical, i.e. it is data in a form that can be counted (numbers) and manipulated mathematically (statistically). Quantitative approaches are especially good for assessing the prevalence and distribution of a phenomenon. It is easier to aggregate numerical information, but it can be subject to misinterpretation, i.e. 'missing the point'. Quantitative approaches can be good for testing hypotheses, but less satisfactory than qualitative methods for identifying the core issues to include in a hypothesis in the first place.

Questionnaire

A data collection instrument containing a set of questions organised in a systematic way (as well as a set of instructions to the enumerator/interviewer about how to ask the questions).

Reliability

The extent to which a study (or evaluation) can be repeated, i.e. the degree to which data collected are consistent among different observers or the same observer at different times. For example, if ten persons (trained as data collectors) observe the same farm practice using the same checklist, they should be reporting the same findings.

Sample

A portion for a larger population selected for data collection in order to reduce time, labour and cost. Ideally, the sample should be qualitatively and quantitatively representative of the larger group from which it is drawn.

Sample size

The number of source members in the sample. The sample size depends on precision requirements for the data, as well as feasibility and resources available.

Sampling frame

All potential respondents (e.g. a list of all villages or all households in the target area) from which the sample will be drawn.

Secondary data

Data collected by someone outside the project, for purposes outside the project, e.g. national census data.

Stakeholders

Potential or actual 'owners' of a project, i.e. persons who have a direct interest in the project. Often taken to mean persons (or organizations) that have the capacity to make or influence decisions affecting the design and implementation of a project. Typically, these include the target population/participants, project staff, counterparts, donors, and other interested agencies.

Stratified sample

A sampling procedure that combines purposive and random sampling. Purposive sampling is done to identify relevant sub-groups or 'strata' out of the overall population, e.g. female-headed households. The potential members in each sub-group are then listed (preparing the sampling frames), and random sampling is used to select the final respondents from within each of the sub-groups.

Sustainability

The concept of sustainability, as it is applied to projects, includes multiple aspects. Some of the main ones are: a) potential for project's impact to continue after intervention terminates; b) capacity of target population to be able to continue to practice an innovation or technique without continued project intervention; c) Capacity of local institutions to continue project activities after the project ends. This includes self-financing of activities via contributions of users of goods and services provided, complementary funding from local funding sources, and decreasing dependency on complementary funding from external sources; d) Sustainability also has an aspect of environmental protection. In this case, sustainability refers to the maintenance or enhancement of resource productivity on a long-term basis, minimizing the depletion of non-renewable resources and enabling communities to care for their own environment.

Systematic sampling

A method of sampling respondents whereby the first member in the sampling frame is selected, followed by every 'nth, member (e.g. every third household in a

north-south line through the centre of a village). These periodic selections become the sample.

Target

Numeric expression of achievements anticipated by a project. These may be written in absolute terms (e.g. 10,000 farmers will replace coffee with alternative cash crops), or as a proportion/percentage change (e.g. the proportion of single adult men reporting use of condoms at their last sexual encounter will increase from 5% to 50%). Targets are generally embedded within objectives, which specify the time frame in which the achievement is supposed to occur.

Target population

Some projects are targeted at particular population groups (who thereby become special interest groups, i.e. 'target groups') Examples include women farmers, refugees, active adolescents, etc. Sometimes the projects are aimed at or focus on whole communities, i.e. 'target communities'.

Validity

The extent to which the findings accurately represent the actual or true situation. There are three main kinds of validity. Design validity means that the structure of a data collection exercise can yield the desired information (e.g. a 'before and after' design to be able to assess achievements). Technical validity means that the methods of data gathering will get the necessary data (e.g. observation of farms to see adoption of crops, rather than relying on reports by non-farming public officials). Instrument validity means the instrument being used will measure what it is supposed to measure (e.g. in a study of safe water, questions about boiling water will find out about water being treated for drinking purposes, and not be confused by water being boiled for bathing).

ANNEX 2

Suggested components for some key M&E documents

1. Evaluation report

- Cover: authorship, date of report, reporting period
- Executive summary: short description of project, including final and intermediate goals, purpose of the evaluation, overall assessment and conclusions, main findings and recommendations, lessons learnt (addressed to other professionals who design and evaluate similar projects)
- Table of contents
- Background of project: start/finish dates, origin of concept, goals (and targets), description of interventions, person involved; wider context in which project has taken place, including key events likely to have affected the project
- Description of evaluation: purpose, design, methodology, outcome/effect measures, implementation measures
- Findings/results: identification and appraisal, implementation and monitoring, outcome/effect and impact; achievements and distribution of benefits; beneficiaries; institution-building, organizational linkages; problems; sustainability
- Discussion: including attribution, cost-benefit considerations, potential for replication
- Summary of conclusions and lessons learnt
- Recommendations: to the project management, to donors, for subsequent M&E of this project and others
- Annexes: ToR itinerary and list of persons consulted, references, methods of data collection, statistical information

2. Terms of reference for an evaluation or research study

- Background and purpose of the study
- Questions to address
- Study approach-data collection and analysis methods
- Special skills and characteristics of the investigator(s)
- Time frame and level of effort
- Reporting requirements - final workplan, preliminary and final reports, participatory review meetings, other
- Deliverables

3. Contract: final agreement about services and responsibilities for an evaluation

- Parties to the agreement and date

- Focus of the evaluation (major questions, outcomes/effects, implementation, costs, other)
- Instrumentation (test, questionnaires, interviews, observations)
- Data collection plans (sites, methods, sampling, persons involved and their roles, schedule)
- Methodology to be used for analysis
- Staff/project participation: roles in co-operating with data collection and analysis; participation in reporting and review meetings, data to be made available
- Reporting: participatory review meetings, date of draft report, review period, final report, dissemination (audience)
- budget

ANNEX 3

Methods: Selected techniques for M&E data collection and analysis

3.1 Participatory rapid toolkit
3.2 Reviewing and analyzing secondary data
3.3 Social mapping (PRA)
3.4 Historical mapping (PRA)
3.5 Rapid social organization profile (PRA)
3.6 Focus group discussions
3.7 Semi-structured interviews
3.8 Qualitative interviews
3.9 Rapid surveys
3.10 Question design for surveys and interviews
3.11 Group brainstorming (PRA)
3.12 Ranking exercises (PRA)
3.13 Strengths, Weaknesses, Opportunities, Limitations/Threats (SWOL/T)

3.1 PARTICIPATORY RAPID TOOLKIT

This toolkit emphasises qualitative methods, including interviews and PRA tools, because most monitoring and evaluation efforts will need to use them for limited, non-random coverage of respondents.

Various *participatory tools for information gathering, communication, education and project management* have been developed; we can refer broadly to this growing family of managerial tools for participatory and sustainable development as "participatory learning and action" or "action research" methodologies.

The main features of action research include:

Local Focus:

- *A strong link with local, community-based development initiatives*
  Action research aims at generating information and supporting decision-making processes useful for local project planning, implementation, monitoring and evaluation purposes.
- *Involvement of local actors and development professionals in a joint learning process.*
  Action research is participatory by definition. It promotes collective discussion and negotiation, on the basis of facts, between local actors' and development professionals' perceptions about the issue(s) under investigation.
- *A focus on the felt needs of community members and local institutions*
  Action research deals with issues directly experienced and explicitly acknowledged as problems by the people who are asked to participate.

Action Orientation:

- *Minimal time-gap between data collection and feedback.*
  Timeliness of analysis and rapidity of feedback are meant to increase cost-effectiveness of the research and promote the practical use of its results.
- *Carrying results into planning and action*
  Action research goes beyond just *recommending* changes based on the findings (as often happens with conventional research). The action research process generally incorporates methods for translating the knowledge gained into practical decisions and/or feasible courses of action.

Participatory Approach:

- *Equal concern for process and results.*
  Action research consists of collecting "fairly quick and fairly clean" information, but it doesn't stop there. It also aims at making all participants aware of the implications of the issue (problem, situation, etc.) being investigated and supporting them in undertaking relevant action.

- *Built-in communication and educational strategy to facilitate local involvement*
  While final written reports are useful for institutional or training purposes, active-learning workshops are considered the most important means for providing feedback to local institutions and the community at-large.
- *Re-definition of the role of the development professional*
  The professional is expected to act more as a "facilitator" and less as an "expert" in his of her field. Working methods are selected and assessed from the perspective of "appropriate technology" for the community. Precision and accuracy of findings are traded off against timeliness and user-friendliness of research and decision-making techniques.

Together with skilful and non-intrusive facilitation, creative use of *visual aids* is an important strategy for supporting group exercises in action research. Some examples of visual techniques that can be used (for data gathering, for analysis, for dissemination and for planning) include the following:

- *Graphic representations* by means of pie-charts or bar-charts (or better yet - pictograms - graphs built of pictures) are suitable for conveying quantitative information even to non-literate participants. The pictograms (whose shape is often inspired by daily objects such as trees, animals, pottery or food) can be used to describe and analyse time trends; patterns of relationship among different actors; or sequences of causes, problems and solutions.
- *Sorting, counting and ranking exercises* may be done in written form, but if literacy is low, they can equally be carried out with everyday objects, such as seeds, stones or simple sketches on small slips of paper.
- *Maps and transect representations* can be used very effectively in groups to describe and analyze the community's spatial distribution of features of special interest (e.g. natural resources, types of soil, vulnerable families, types of services, water points, land tenure patters, etc.).
- *Drawings, posters, pictures, and slides as well as open-ended stories, popular theatre and community-directed videos* are widely used as an entry point for focusing group discussions.
- *Analytical matrices (e.g. column and row, Venn/chapati diagrams* can be used to organize and analyze findings, including qualitative statements. They can also be used on flip-charts or chalkboards for assembling the ideas developed in a brainstorming session with a group.

3.2 REVIEWING AND ANALYZING SECONDARY DATA

A review of existing data has several potential benefits, such as: refining specific objectives, identification of potential informants for interviews, further clarification of target groups in the population, and summarizing what is known versus what remains to be answered in the field. Costs are very low, information can be gathered quickly and it can usually be done with a relatively small amount of local travel. Depending on its quality, existing data can also permit greater depth of analysis for the population and environment situation.

However, there are also some potential limitations. Data may be incomplete, biased, or unreliable. The methods originally used to collect the data may not be described. Access to the materials will vary; and some agencies may expect a fee to respond to information requests others may not allow access without several permission letters. The exercise of extracting content and meaning from secondary data will be improved if a set of open-ended questions are systematically used with the data. Some potential questions are as follows:

Problems (nature, range, distribution)

- what information do we already have about the population and environment; problems that affect persons in this region?
- What do we know about the distribution of leading problems among the residents in the study region? E.g. what are the influences and relationships between age, gender, ethnicity, residence location, family structure, educational status, etc.?

Behaviour patterns

- What behaviours place the communities at risk? Which behaviours are protective?
- What do we know about factors affecting behaviour change among people in this region? E.g. social competencies, supportive attitudes, social groups, etc.?

Context

- What do we know about external factors affecting the problems? E.g. social norms, religion, economics?

Institutional responses

- What policies exist that aggravate or solve any of the problems?
- What programmes and services are currently addressing the problems?
- What is their coverage and how effective are they?
- Who is funding and who is conducting these activities and services?
- What future activities are planned?

At the conclusion of the documents review, there are two other useful questions:

a) What additional information about population and environment is needed but not available?

b) For whom would this information be useful and why?

3.3 SOCIAL MAPPING

Participatory mapping starts with collective discussions among groups of community members and then proceeds to drawing maps of their perceptions about the geographical distribution of environmental, demographic, social, and economic features in their territory. The participants are usually requested to draw their own map, e.g. on a flip-chart or on the ground, plotting features with symbols that are understood and accepted by all members of the group, regardless of literacy. In certain cases purchased maps or aerial photographs can also be used.

Purposes

Participatory mapping is especially useful for providing an overview (or "snapshot") of the local situation. It can also serve as a good starting point for environmental and social assessment. Use of periodically repeated participatory mapping is very helpful in monitoring and evaluating changes in the target community (e.g. adoption of farming practices, distribution of social resources like schools and health units) and in the use of natural resources. 'Historical' and 'anticipated future' mapping (i.e. drawing a series of maps referring to different moments) is helpful in describing and analyzing trends over time.

Steps in using the technique

- ♦ Explain the purpose of the exercise to the participating group.
- ♦ Agree beforehand on the subject of the mapping exercise and on the graphic symbols to be used. Allow participants to choose their own symbols.
- ♦ Ask a participant to be responsible for drawing or plotting symbols according to the suggestions of the group.
- ♦ Promote participation of all group members by posing individual questions. Allow the group to discuss different opinions and perceptions.
- ♦ Once the map I finalized, ask participants to interpret the overall picture. Suggest that they identify the main problems revealed by the map and ask them about possible solutions within the locally available resources (which are already drawn, or could now be drawn, on the map).
- ♦ Remember that the map is community property; leave a good copy of the map in the community for their own use.

Strengths and weaknesses

- ▪ Mapping and the associated discussions quickly provide a broad overview of the situation.
- ▪ Encourages two-way communication
- ▪ Helps people in seeing links, patterns, and inter-relationships in their territory.
- ▪ Individuals who are non-literate can participate.
- \- Subjectivity and superficially: mapping exercises must be complemented by information generated by other participatory assessment tools.
- \- Some cultures may have difficulties in understanding graphic representations.

3.4 HISTORICAL MAPPING

Historical mapping uses a series of participatory mapping exercises to portray the demographic and natural resources situation of the community at different moments of its history. Three maps are drawn showing the situations as it existed one generation ago, at present time, and what is expected after one generation's time future.

Purpose

Historical mapping can be extremely helpful to introduce the time dimension in participatory environmental appraisal and/or participatory census exercises. It can provide visual evidence of changes that have occurred and expected trends. In this way it can help identify determinants of environmental degradation and population growth and enable participants to consider more suitable means of balancing or controlling these issues.

Steps in using the technique.

- A map of the current demographic and environmental situation is drawn with participants.
- With the help of older community members, the same exercise is repeated to show the situation as it was approximately twenty years ago.
- The current and past maps are then compared, often with a brainstorming, to collectively identify major changes and their root causes.
- Based on the list of changes and causes, a prospective map can be drawn by the participants to show their expectations of the situation will exist in the community in 20-30 years from now if the current trends are maintained.
- The future man can be reviewed to explore differences between what is projected and what a desirable future status would be. This discussion can then progress to identify potential means for addressing environmental degradation and population growth.

Strengths and weaknesses

- The technique can be very appropriate to summarize the results of a comprehensive participatory appraisal on environment and population dynamics.
- It may increase participants' understanding that most positive and negative changes in environments and populations are shaped by historical, man-made actions.
- It can help to identify mid-or long-term solutions to the population and environment problems affecting the community.
- The exercise is long and complex. At least three sessions with the group will be needed to get though the whole sequence of mapping and discussion.
- Sensitive issues from the past may be raised, including conflicts within the community and between the community and outsiders.
- The analysis is likely to identify effects and causes which are beyond community control. Discouragement and frustration may develop among participants.

3.5 RAPID SOCIAL ORGANISATION PROFILE (PRA)

Information about social groups can be readily identified by community members as a participatory discussion and analysis tool. Use a flip chart with the community working group to facilitate their collective work on this exercise. The categories listed below (see also the following matrix) are usually very useful; additional columns, however, could be added by the community, e.g. date group started, where group is located, etc. Such additions are quite acceptable, if they are not too many, and if the community can express how they think the extra information might be used.

Group name:	the group's own name, in vernacular
Size:	of the group,;number of members (if there are degrees of membership, or individual and household members, that information would also be useful.
Gender of members:	may be one gender or mixed; if mixed, give proportions
Age:	of members; can be given as a range, with some indication of whether there is a particular pattern of most members in a certain range.
Admission rules:	how to persons acquire membership status: by appointment, nomination, paying a fee (and if so, how much), residing in a certain location, etc.? Is there a recurrent fee to maintain membership
Activities:	what is the nature of the group and what are its principal activities (e.g. cultivation, rotating credit, assistance to orphans, income generation, religious fellowship, political, etc.)
Data group started	when was the group formed? This gives some idea of the stability of the group.
Location	where do the group's activities take place? At times, it can also be useful to get the mailing address or physical location for the group.
Link person in the group	generally a resident of the community, and often the chairperson for the group. Someone who can be contacted about group activities, or sharing information with the group.
Link person in the project	if this data is being collected for a project activity, e.g. planning an intervention, there may be multiple project-related persons in contact with the community, but usually one individual who has or can have a stronger tie to the particular group for information sharing.
Potential relevance to project	projects have different objectives (e.g. development, health education, gender sensitization, social research, etc.) this column can encourage thinking about the importance of all groups in the community.

After completing the matrix, a discussion can lead to an exploration of the groups as resources, including potential relevance to the project (e.g. development, health education, gender sensitization, social research, etc.) Seeking comments and opinions from the community and project staff about the potential relevance of each group can help to discourage dependency on an external project.

3.6 FOCUS GROUP DISUSSIONS

Focus groups are semi-structured discussions with a small group of persons sharing a common feature (e.g., women of reproductive age, users of a certain service, etc). A small list of open-ended topics, posed as questions is used to focus the discussion.

Purposes

Focus groups have been increasingly used in participatory research to identify and describe insider perceptions, attitudes, and felt needs.

Steps in using the technique

- Design a discussion topic (interview framework)
- Decide on the number of focus groups. In a small community, two groups of 6 - 12 persons each and representing key opposing categories (e.g., men and women, peasants and herders, wealthy and poor, etc.) may be sufficient. Be ready to hold additional sessions if the discussion does not succeed) e.g., people don't show up, the facilitator can't keep the discussion on course, etc.
- Select appropriate facilitators, which may involve matching by age, gender, or language ability (focus group are best done in the local vernacular)
- The interviewer acts as a group facilitator, and a second person acts as a rapporteur (note- taker). The rapporteur needs to write rapidly to capture people's expressions as exactaly as possible. It may be useful to tape record the session, but only if the community and the group give permission.
- Conduct practice focus groups with members of a similar nearby community; in small communities, this helps prevent people coming with pre-set answers.
- Before starting, explain the purpose of the session to the group. After posing topics, be sure each person has at least one opportunity to provide his/her ideas. Over-talkative participants need to be controlled and silent ones stimulated.
- As with semi-structured interviews, the facilitator is free to use a variety of probing questions to help extract ideas and to keep the talk focused. Limit the length of the session to about an hour(including introduction).
- Notes and recordings of interviews should be carefully reviewed immediately after the session (and tape recordings transcribed as soon as possible).
- Analysis consists of extracting key statements from the discussion. These statements should be reported in the matrix exactly as phrased by the participants.

Strengths and weaknesses

- Group interaction enriches the quality and quantity of information provided.
- Focus group discussions are quite good at disclosing the range and nature of problems, as well as eliciting preliminary ideas about solutions.
- Practice and experience in qualitative research procedures are needed.
- Large amounts of information are easily obtained, necessitating skills in extracting and summarizing for the analysis.

3.7 SEMI-STRUCTURED INTERVIEWS.

Semi-structured interviews are lists of broad, open-ended questions to be addressed to knowledgeable individuals in a conversational, relaxed, and informal way. The interviewer is left free to rephrase these questions and to ask probing questions for added detail (e.g., "Who?, "Where? "When?", and "How?") based on respondents' answer and conversation flow. This from of interview is more likely to yield in-depth opinions and perceptions than can be done with a rigid closed-ended questionnaire.

Purposes

Semi-structured interviews can be used to obtain specific quantitative and qualitative information. Household features, gender-related issues, use of natural resources, household economics, and many other topics can be effectively explored.

Steps in using the tool

- Design an interview guide and a results summary form
- Decide who is going to be interviewed (purposeful sampling procedures); and select appropriate interviewers (may mean matching respondents and interviewers by age or gender, will depend on topic and local cultural values)
- Pre-test the questionnaire guides with several individuals who are representative of the types of persons to be interviewed in the actual study (make sure the questions are comprehensible, that the answers are relevant, etc.)
- Conduct a training includes a number of practice interviews with other interviewers or community members and subsequent review to improve performance.
- Teach the interviewers to make relatively brief notes during the interview, filling-out the summary form immediately after the interview, this will require practice to capture exact words and phrasing for quotations.
- Arrange for daily (or nightly) editing of all forms for completeness, errors, etc.
- Hold daily discussions about problems encountered during the interviews and to review the preliminary results with other members of the team.

Strengths and weaknesses

- Less intrusive than questionnaires, can be paced to fit the needs of the respondent
- Encourages two-way communication
- Administered in an atmosphere that makes respondents feel at ease, which may include privacy and confidentiality, depending on topic.
- Can obtain very detailed information and richy expressive quotations

- Practice and experience are needed for appropriately using this tool; requires sensitivity and the ability to recognize and suppress one's own biases.
- Interviewers should have good literacy, communication, and summarizing skills.
- Interviewers will need some grasp of the general topics covered in the interview
- Facilitator support is needed for analyzing data.

3.8 QUANTITATIVE INTERVIEWS

One of the most important sources of information for monitoring and evaluation agriculture and rural development projects is qualitative interviews with project participants and other key informants help in understanding the complex ecological, sociological, cultural and other situations with which the project must deal. They can also provide an in-depth understanding of the perspectives, attitudes, and behaviour patterns of the target population, which will not be fully captured by other modes of data gathering. Moreover, qualitative interviews can be used to generate hypotheses and propositions which can then be tested on a wider population using a structured questionnaire.

Qualitative interviews are usually classified according to three broad types: a) informal, conversational; b) topic-focused; and c) semi-structured, open-ended.

Reliability and validity of the interview

How is the reliability of the information generated by a qualitative interview to be assessed? How can we be sure that the respondent has provided accurate information? This problem, of course, is not unique to qualitative interviewing; it is common to all types of interviews. But because of the subjective nature of the written summary notes, the issue of reliability is particularly pertinent in this context. Because by definition, there is no totally objective test that can be applied in qualitative interview situations, judgement of accuracy must be based on an assessment of respondent-related factors.

Knowledge

Obviously, the first consideration is the knowledge that the respondent may be expected to have. Remember, too, that the respondent may be knowledgeable about some items and relatively ignorant about others. Therefore, the interviewer should ask himself the following questions with reference to each of the principal sub-topics in the interview. Questions for a checklist include:

- is the respondent's knowledge of the matter direct and first-hand?
- is the respondent in a position to provide accurate information?
- if the respondent is relying on second-hand information, are these sources credible?

Credibility

Some people have a tendency to boast; others have a fertile imagination and unconsciously exaggerate; still others aim to enhance their self-importance by giving misleading answers. Questions for a checklist include:

- is the respondent eager to make strongly authoritative statements?
- does the respondent consider before replying and seem perceptive about the issues?
- are the respondent's answers based on practical considerations?

Ability and willingness to respond

Some respondents find it difficult to articulate their feelings, judgements, and opinions, especially to outsiders. This problem is compounded when the interviewer comes from a higher socio-economic stratum.

Ulterior motives

Respondents may have an ulterior motive for providing inaccurate information. Extension staff may exaggerate the performance and impact of agricultural extension activities. A health worker may magnify the problems encountered on reaching out to target populations. Staff directly involved in project efforts have a professional stake in promoting their activities and covering their shortcomings; often this bias is more sub-conscious than a deliberate attempt to mislead. Questions for a checklist include:

- was the respondent trying to paint only a positive picture?
- was the respondent trying to rationalise a distasteful fact?
- was the respondent dwelling excessively on problems and difficulties in order to
  seek sympathy?

Bars to spontaneity

The social context of the interview also affects the expression of ideas and opinions by the respondents. For example, when a farmer is interviewed in the presence of government officials or project staff, he might not reveal the truth because he is afraid to antagonise them. Questions for a checklist on this include:

- were there some people around whose presence might have affected the respondent's answers?
- was he anxious that others might overhear him?
- was the location private enough to ensure total confidentially for the interview?

Desire to please

There is a tendency for respondents to give answers which they believe the interviewer wants to hear, either from politeness, hope of benefits, or in the hope of shortening the questioning. In such a case, it is particularly important to avoid giving the respondent clues regarding the interviewer's opinions. Questions for a checklist:

- did the respondent show undue deference?
- did the respondent seek the interviewer's opinion before replying?
- did the interviewer say anything which silenced the respondent or changed the subject matter?

Other factors

Finally, one should not forget that events might have influenced the views expressed by the informant. The mental and physical status of the respondent also affect his responses. When he is tired, he can be irritable and react negatively to questions.

3.9 RAPID SURVEYS

Methodology notes

- 20 questions (or less), fitting on one to three sheets of paper with room for answers
- about 2/3 of questions pre-set, rest to be contributed by or specific to the concerns of the given community
- capable of being administered by local people (e.g. local volunteers) in collaboration with trained supervision (e.g. divisional staff)
- capable of being analysed rapidly in the field and raw results given to the community during the field phase
- able to generate reasonable prevalence data for the community (e.g. based on visits to every household, or a sample of households which has been identified and numbered on the social resource map)

Alternative strategies for identifying information to gather

- Community-generated: what do community leaders want or need to know that would help them to better serve the needs of their community? Begin with qualitative techniques (focus groups, key informant interviews, etc.) to get community input into what should be included in a survey questionnaire.
- Project-generated, exploratory: what range of activities would the project like to consider for this area; what indicators would help in deciding where to focus their efforts
- Project-generated, specific: based on a selected group of anticipated activities, what indicators would be likely to be measured at the outcome stage (and therefore need to be collected at the baseline for later comparison)?
- Service-related: based on services or made use of any services and what services from these various providers?

Other data considerations

- Data to be gathered should be useful (i.e. not just collected because it is 'nice to known')
- Data should be anticipated to be more accurate (exact) or more accessible through a survey approach than would be possible in group sessions
- Information to gather at the community level might already be available at a larger scale, but not for the micro-environment of the community, e.g. employment patterns, reasons for school drop-out, nature of disability, adolescent health (sexual and reproductive), latrine quality and usage, etc.

3.10 QUESTION DESIGN FOR SURVEYS AND INTERVIEWS

Avoiding inappropriate questions

To make sure our questions are appropriate, we must become familiar with respondent groups - their knowledge of certain areas, the terms they use, and their perceptions and sensitivities. What may be an excessive burden for one group may not be for another. And what may be a fair question for some may not be for others. For example, in a survey of the handicapped, those who were not obviously handicapped were very sensitive about answering questions while the converse was true for the obviously handicapped.

Questions are inappropriate if they:

- Cannot or will not be answered accurately
- Are not geared to the respondents' depth and range of information, knowledge and perceptions
- Are not relevant to the evaluation goals
- Are not perceived by the respondents as logical and necessary
- Require an unreasonable effort to answer
- Are threatening or embarrassing
- Are vague or ambiguous
- Are part of a conscious effort to obtain biased or one-sided results.

The best way to avoid inappropriate questions is to know the respondent group and not rely on stereotypes. A brief story may bring this point home. A researcher was pre-testing a questionnaire on people who used mental health services. During the test, the researchers expressed surprise that this group of respondents could handle certain difficult concepts. Annoyed, one of the respondents rejoined, "I may be crazy, but I'm not stupid."[GAO, 1986]

3.11 GROUP BRAINSTORMING

Brainstorming is a basic idea gathering technique employed in many group exercises. It is based on a freewheeling discussion started by an open-ended and somehow provocative question forwarded by the facilitator. At the same time, avoid opening statements that are leading, i.e. ensure that they do not promote or over emphasise a particular point of view that can bias the ideas of the participants.

Purpose

Brainstorming can elicit multiple perceptions of a given issue, and the group discussion which follows can help find the basis for a consensus among group members.

Steps in using the technique

- The issue to be discussed is introduced by the facilitator.
- The key-question is written on the blackboard or on a flip-chart
- Participants are asked to provide short answers, i.e. no speeches at this stage
- An important point to stress at the beginning is that 'all ideas are good ideas'; if anyone does not agree with someone else's point, they should give what they think is a better idea. Accept only additional contributions during the brainstorming, not disagreements or arguments; defer them to the discussion afterwards. Encourage fresh ideas rather than repetitions of earlier items.
- Each participant is allowed to express his/her view. Over-talkative participants will need to be quieted, and silent participants can be explicitly asked for ideas.
- The facilitator picks the basic point out of participant statements and ensures that it is written (or portrayed with a picture) on large cards tacked to a bulletin board or wall. Appropriateness of the summary is checked with the concerned participants
- Keep the brainstorming relatively short, i.e. 15-30 minutes is usually sufficient to obtain most of the ideas on a specific topic without tiring the participants.
- Review the results with the participant group. Remove duplicated items and cluster groups of similar ideas. (Having the ideas on cards facilities rearranging them.) Highlight differences of opinion and discuss until a consensus is achieved.
- Results of the brainstorming can then be summarised and kept for future reference.

Strengths and weaknesses

+ A properly conducted brainstorming facilitates participation of all group members in the idea-building process.
+ It helps to understand and, if needed, consolidate the degree of consensus and homogeneity within the group.
+ It is a good introduction for more structure and focused exercises.
- Solid experience in dealing with group dynamics is needed by the facilitator to keep the discussion on track as well as good mediation and summarising skills.
- Setting and dynamics may hide conflicts existing within the group and affect the reliability of the brainstorming results.

3.12 RANKING EXERCISES

Ranking exercises, which may be done with groups or individuals, are a way to enable people to express their preferences and priorities about a given issue. The technique may generate insights about the criteria through which different individuals, groups or social actors make decisions on the kinds of issues under investigation.

Purpose

Ranking exercise have been used for a variety of specific purposes, such as:

- identification of needs, priorities and preferences
- quantification of opinion and preferences as elicited through interviewing or brainstorming;
- comparison of preferences and opinions as expressed by different social actors.

Steps in using the tool

- ♦ Make a list of items to be prioritised (these could come from a brainstorming exercise);
- ♦ Recruit appropriate participants to be involved in the exercise;
- ♦ Define a simple ranking mechanism. This may be based on a pair-wise comparison of items in the list; on sorting cards representing items in order of preference; or by assigning a score a score to the different items.
- ♦ Prepare a matrix on which preferences identified by participants could be jotted down (e.g. on the ground, with a flip chart, on a chalk board)
- ♦ Explain the ranking mechanism to each participant and ask them to carry out the exercise (e.g. give them three stones to place on any categories they want in response to a specific guiding question - which crop is the most difficult, which type of health provider is the most effective, etc.);
- ♦ Ask participants to explain the criteria on which their choice has been made
- ♦ Carry out a quantitative analysis of ranking series and interpret the findings on the base of qualitative statements about the criteria of choice.

Strengths and weaknesses

+ Ranking is a flexible which can be used in a variety of situation and settings.
+ Whenever categorical judgements are needed, ranking is a suitable alternative to closed-ended interviewing.
+ Ranking exercises are generally found to be amusing and interesting by participants and are helpful to increase their commitment to action-research.
+ Information is provided on both the choices and reasons for the choices.
- Pre-testing is needed for the ranking mechanism and the tools to be used to facilitate it.
- Choices may be affected by highly subjective factors. In order to generalise results to the whole community, a proper sampling strategy is needed.

3.13 STRENGTHS, WEAKNESSES, OPPORTUNITIES, LIMITATIONS & THREATS ANALYSIS (SWOLT)

SWOLT analysis is a powerful tool for group assessment of the issues of concern, particularly interventions or different potential courses of action. It is based on a structured brainstorming aimed at eliciting group perceptions of the positive factors (strengths), the negative factors (weaknesses), the possible improvements (opportunities) and the constraints and threats (limitations) related to the issue.

Purpose

SWOLT analysis is especially useful for evaluating activities carried out in the community. It can be focused on services provided by external agencies, as well as using it for self-evaluation of the interest group's own performance.

Steps in using the tool

- A four column matrix is drafted on the blackboard or on a flip-chart and the four judgement categories are explained to participants. It will help to phrase the four categories as key questions, to which participants can respond.
- The facilitator starts the brainstorming by asking the group a key question about strengths. Responses from the group are jotted down on the relevant column of the matrix.
- For each strength, the related weaknesses, opportunities and limitations are also identified by the group.
- Participants may have different opinions about an issue, and contradictory statements may be forwarded. In such cases, the facilitator can work toward a consensus, which may require a point to be discussed at some length. Each entry is left on the final matrix only after achieving a group agreement.

Strengths and weakness

+ The technique stresses consideration of different sides (positive and negative) of the issues. It therefore helps to set the basis for negotiations and trade-offs.
+ SWOL is a good means to build a consensus within the group and to prepare the group to discuss with outsiders.
+ SWOL can promote group creativeness. It helps to link perceptions of things as they are with realistic expectations about how things could be.
- Sensitive topics and differences of opinion may arise during the discussion.
- Some group members may dominate the discussion.
- Summarising long discussions in short statements requires that the facilitator have good synthesising skills.

ANNEX 4
Alternative Terminology for Log Frame Concepts

Agency:	*Note:*		Log Frame Hierarchy of Objectives / Different Terminology			
		Impact	**Effects**	**Outputs**	**Processes**	**Inputs**
NEDA-DRDP Guideline	1	(Final) Goal	Intermediate Objective	Outputs	Activities	Inputs
CIDA	2	Overall goal	Project purpose	Results/outputs	Activities	Inputs
DANIDA	3	Development Objective	Immediate Objective	Outputs	Activities	Inputs
European Union	4	Overall objectives	Project purpose	Results	Activities	
FAO	5	Development objective	Immediate objectives	Outputs	Activities	Inputs
GTZ (KEP)	6	Overall goal	Project purpose	Results/outputs	Activities	Inputs
NORAD	7	Development objective	Intermediate objectives	Outputs	Activities	Inputs
ODA	8	Goal	Purpose	Outputs	Activities	
PC/LogFrame	9	Goal	Purpose	Outputs	Activities	
UN Agencies/IFAD	10	Impact	Effect	Outputs	Processes	Inputs
USAID	11	Final goal	Strategic goal, objective	Intermediate results	Activities	
World Bank	12	Goal	Project purpose	Outputs		Inputs

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ANNEX 5
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