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Eastern Nile Watershed Management Project

A Training Manual on
Result & Process based Monitoring and
Evaluation

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Description	Page
INTRODUCTION	1
Part I: Introduction to Basic Concepts of Different Monitoring and Evaluation Approaches	2
1. Basic Concepts of Different Monitoring and Evaluation Approaches	2
1.1 What is Monitoring and Evaluation; Defining Concepts	2
1.2 Participation in Project Monitoring and Evaluation; The Role of Stakeholders	3
1.3 What is Evaluation?	6
1.4 Process Based Monitoring (ProM)	11
Part II: Results Framework and Results Based M&E	14
2.1 Defining Result Based Management (RBM)	14
2.2 <i>Results-Based Monitoring and Evaluation (RBME)</i>	15
2.3 Why Results Based Management?	16
2.4 <i>Principles of RBM?</i>	17
2.5 <i>Traditional vs. Results-Based M&E</i>	17
2.6 <i>Cross-cutting issues in RBM</i>	18
2.7 Monitoring of Risks and Assumptions	18
2.8 Reporting on Results	19
2.9 Feedback mechanism	19
2.10. Results Based Frameworks	21
PART III: Logical Framework Approach (LFA); Tool for Project Planning	38
3.1 Basic concepts	38
3.2 The Process of LF Construction	39
3.3 Steps involved in Developing LFA	40
Part IV: Building Results Based Monitoring and Evaluation System	51
4.1. Conducting Readiness assessment	51
4.2. Agreeing on Outcomes to Monitor and Evaluate	54
4.3. Selecting Key Indicators to Monitor Outcomes	55
4.4. Identifying specific activities for each Outputs /outcome indicators	57
4.5. Conducting survey for baseline Data for Indicators	58
4.6. Setting Realistic Targets for each indicator	60
4.7. MIS Based Monitoring & Evaluation	62
4.8. Sustaining the M&E System within the Organization	65
Part V: Participatory Integrated Watershed Work Plan and Reports Preparation	67
5.1 participatory watershed plan preparation experiences.	67
5.2 Data Quality Assessment and Responsibilities	74
5.3. M&E Data Types, Collection Methods and Tools	78

Training Manual on Result and Process Based Monitoring and Evaluation

INTRODUCTION

This *Result and Process Based Monitoring and Evaluation* training material was prepared on behalf of Eastern Nile Technical Regional Office (ENTRO). The purpose of the training material is to promote a better understanding of the key concepts of Results and Process Based Monitoring and Evaluation and related project management concepts and tools that help trainees and/or readers build their knowledge on Results Based Monitoring and Evaluation (RBME) and Process Based Monitoring (ProM).

The material has been prepared to the Sudanese Watershed Development Project Technical Staff to help understand key concepts, processes involved in defining key project related processes, results & indicators, building of results based M&E systems, how to apply them in the design, implementation and in the reporting of project results.

It is therefore, believed that the training material will contribute to enhancing the trainees' basic knowledge on concepts, tools, about the subject matter and creates interest for further reading to apply for the day to day project management and M&E activities.

The document is organized in different parts;

Part I Provides an overview of the different kinds of M&E approaches such as Participatory, Process based and Results Based M&E systems. In addition, it also reviews the core concepts underlying RBM such as the results chain, the difference between activities and outputs and the different levels of results. The process and methodology in the formulation of key project processes, results and indicators and the importance of stakeholder involvement at every stage of the project cycle are also examined. The role of indicators in measuring results and in developing a performance measurement to monitor and report on results is also explained.

In Part II Results Framework and Results Based Monitoring and Evaluation methods are explained.

Part III deals with introductory concepts of the logical framework approach (LFA) and its use in the project management, its use as a project design/planning, monitoring and evaluation tool.

Part III deals with processes and steps on building of a results based monitoring and evaluation systems. In line with these, experiences of Tana Beles participatory watershed development project work plan preparation approach are presented and discussion results are included in the document.

Monitoring and Evaluation Data Collection Methods, Tools, and Analysis Techniques were also included in the document.

Finally, the training was supported with practical field visit to Tana Beles Integrated Watershed Development Project sites (community planning and reporting systems and woreda/district level MIS database management and monthly data entry processes shared with trainees).

Part I: Introduction to Basic Concepts of Different Monitoring and Evaluation Approaches

1. Basic Concepts of Different Monitoring and Evaluation Approaches

1.5 What is Monitoring and Evaluation; Defining Concepts

Monitoring and evaluation are integral stages in the project cycle. They are distinct, but complementary to each other.

Monitoring is a continuous function that uses the systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds.

To monitor is to check on how project activities are progressing. It is observation; — systematic and purposeful observation. Monitoring also involves giving feedback about the progress of the project to the implementers, beneficiaries and donors of the project.

It is the systematic and continuous collecting, analyzing and using of information for the purpose of management and decision-making. The purpose of monitoring is to achieve efficient and effective performance of an operation. Monitoring systems should therefore provide information to the right people at the right time to help them make informed decisions (EC, 2008).

Monitoring must highlight the strengths and weaknesses in project implementation, enabling managers to deal with problems, finding solutions and adapt to changing circumstances in order to improve project performance.

Monitoring provides an '*early warning system*', which allows for timely and appropriate intervention if a project is not adhering to the plan. It enables the timely identification and correction of deviations in project implementation thus providing the opportunity to remedy undesired situations before damages occur or get worse. Monitoring should be supported with field visits. ***It is difficult to properly monitor project progress without field visits.***

Monitoring should focus on collecting and analyzing information on:

- Physical progress (input provision, activities undertaken and results delivered) and the quality of process (i.e. stakeholder participation and local capacity building);
- Financial progress (budget and expenditure)
- Preliminary response by target groups to project activities (i.e. use of services or facilities and changes in knowledge, attitudes or practices)
- Reasons for any unexpected or adverse response by target groups, and what remedial action can be taken.

This is what we understand by monitoring:

- *Monitoring is a way of getting feedback on the usefulness of the work that we do for the people we are trying to work with.*
- *Monitoring is an integral part of everything that we do. If you want your projects to be relevant and to make a difference, monitoring has to be an integral part of the project process.*
- *Monitoring starts with being absolutely clear about what we want to achieve: if we are not clear about the changes we seek to bring about, then we will only be able to get feedback (monitor) on what we do, not the results of our actions.*
- *Monitoring is not only about observing and listening, but also about assessing information, learning from it and adjusting one's approach if necessary.*

Thus, monitoring embodies the regular tracking of inputs, activities, outputs, outcomes and impacts of development activities at the project, program, sector and national levels.

Purpose of Monitoring: Monitoring provides information that will be useful in:

- *Analyzing the situation in the community and its project;*
- *Determining whether the inputs in the project are well utilized;*
- *Identifying problems facing the project or community and finding solutions;*
- *Ensuring all activities are carried out properly in time and quality;*
- *Using lessons to improve the quality of implementation ; and*
- *Determining whether the way the project was planned is the most appropriate way of solving the problem at hand.*

1.6 Participation in Project Monitoring and Evaluation; The Role of Stakeholders

All stakeholders have a stake in knowing how well things in the project are going. Monitoring is a vital management and implementation role that cannot be left only to the project, individuals in the project, or to one stakeholder.

As many individuals, communities and institutions as possible that have any interest in the project, at all levels, should participate in all stages of project management. As with community participation and participatory management, participation in monitoring does not happen spontaneously. The persons who participate must be well identified, encouraged and trained to participate.

Core Principles of participation:

- primary stakeholders are active participants – not just sources of information
- a focus on building the capacity of local people to analyze, reflect and take action
- there are opportunities for joint learning of stakeholders at various levels
- it aims to create greater stakeholder commitment to take corrective actions to help themselves

Advantages of Participation:

The advantages of participation in monitoring include: (a) a common undertaking, (b) enhancing accountability, (c) better decisions, (d) performance improvement, (e) improved design, and (f) more information.

Common understanding of problems and identification of Solutions: Participative monitoring helps stakeholders to get a shared understanding of the problems facing the community or project (their causes, magnitude, effects and implications).

This facilitates the identification of solutions. These solutions are more likely to be appropriate because they are derived in a participatory manner from the current situation.

Benefits the Target Groups and Enhances Accountability: Participation in monitoring ensures that the people to which the project was intended are the ones benefiting from it.

It increases the awareness of people's rights, which stimulates their participation in guarding against project resource misappropriation that makes project implementation less expensive.

Making Appropriate Decisions: Monitoring provides information necessary in making wise management decisions.

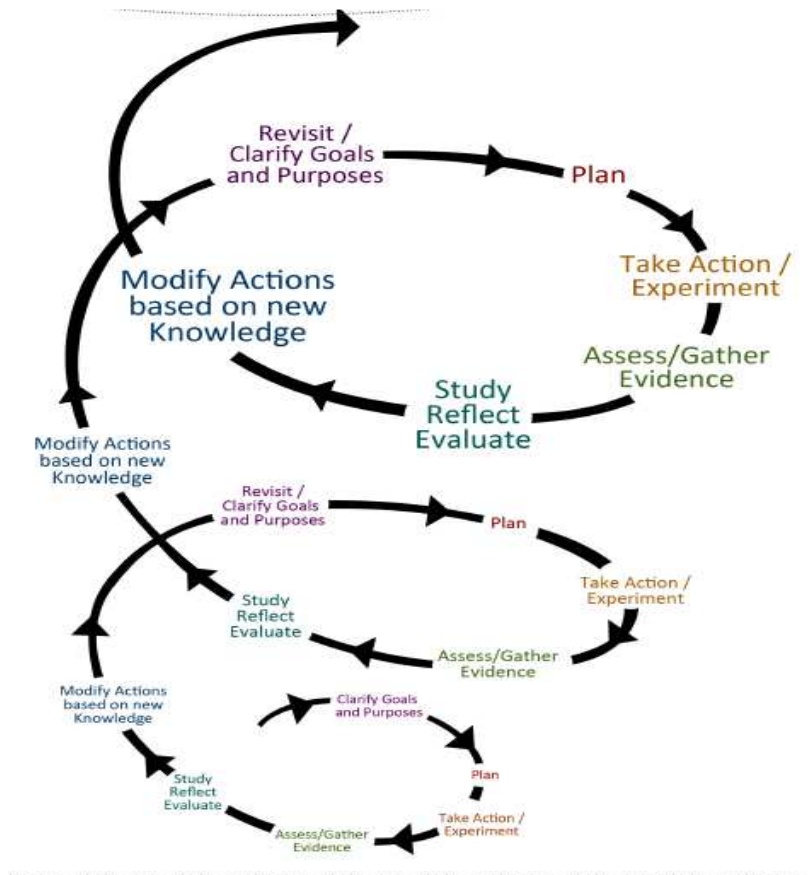
When communities participate in monitoring it means that they have participated in providing management information and contributed to decision making. The decisions from this are more likely to be acceptable and relevant to the majority of the population. This makes human and resource mobilization for project implementation easier.

Performance Improvement during Monitoring, if a performance deviation is discovered solutions can be devised. To find appropriate decisions that can be implemented requires the participation of those people who will put the solution into practice. Therefore participation in monitoring can help improve project performance.

Design of Projects: The information generated during project monitoring helps in re-designing projects in that locality to make them more acceptable. The lessons learned can also be used in the design of similar projects elsewhere.

Collection of Information: If many people participate in monitoring they are more likely to come up with more accurate information. This is because, information that is omitted by one party, can be collected by the other. Each stakeholder is putting varying emphasis on the different aspects of the project using different methods. Alternatively, one party knowing that the information they are collecting will be verified, avoids deliberate wrong reporting.

How does PM&E work? Participatory M&E approach can be described as a systematic process of continually improving by learning from M&E feedbacks and experiences achieved in the past. This approach emphasizes the need to learn by doing and to evolve alongside changes in the environment. This can be schematically seen as follows;



Source: PCM group

- 1) Clarify the goals and purpose of the project
- 2) Plan actions and monitoring
- 3) Implement actions and monitoring
- 4) Gather data/evidence and feedback
- 5) Reflect on the findings and evaluate them
- 6) Modify/review actions based on the new knowledge/learning

It is known as the project management spiral. Meaningful project management requires a constant process of: **Acting** → **Reflecting** → **Learning** → **Planning** → **Acting...**

Challenges of Participation in Monitoring:

Whereas participation in monitoring has a number of virtues, it is likely to face a number of challenges. The challenges include: (a) high costs, (b) variations in information, and (c) inaccuracies.

High Initial Costs: Participation in monitoring requires many resources (eg time, transport and performance-related allowances). It is a demanding process that can over-stretch volunteer spirit at community level and financial resources at different levels of the project hierarchy. Therefore it must be simple and focused to vital elements.

Quantity and Variety of Information: Monitoring requires collection, documentation and sharing of a wide range of information. This requires many skills that are lacking in the communities. It therefore necessitates much time and resources for capacity building. It also risks wrong reporting.

Inaccuracy of Information: Some stakeholders, from the community to the national level, may intentionally provide wrong information to depict better performance and outputs or because of community or project differences. To counteract wrong or incorrect reporting needs sensitization and consensus building that is difficult to attain.

The advantages of participation in monitoring are evidently more than the challenges. It is therefore necessary to encourage and support participatory monitoring as we devise means to counteract the challenges.

Levels of Monitoring: Monitoring methods differ at each level, and complement each other. Monitoring should be carried out by all stakeholders at all levels. Each level, however, has specific objectives for monitoring, methods and roles.

For monitoring to be effective, there is need for a mechanism of giving feedback to all people involved at all levels (community, district, project office and donor).

Monitoring at Community Level: Community level is where implementation and utilization of the benefits of the project take place. In most cases it is the village level. At this level, the major purpose of monitoring is to improve the implementation and management of projects. The interest of the community as a whole in monitoring is to ensure that the implementation of the project (an output) is being done as planned.

The specific objectives for monitoring at this level therefore include, (a) ensuring that the projects are implemented on time, (b) that they are of good quality and (c) that the project inputs are well utilized (d) capacity building of the community in development management.

Monitoring at this level involves identifying community monitoring tasks. This should be identified in a participatory manner to reflect the community capacity and interest in the implementation and monitoring.

If communities are not participated well in the process of *project identification* and does not reflect community interests, it is likely that participation in the implementation and monitoring will not be effective.

Identifying the team(s) to spearhead the monitoring of the project in the community. The roles of each team, how they should carry out the monitoring process, the use and sharing of information generated with other groups within and without the community, should be specified and explained;

Design a work plan that guides project monitoring. The work plan should specify the activities in the order that they will be executed and the communities to execute them. This helps the people monitoring to know the activities that should be carried out in the given period of time. Determine the major activities from the work plan. Though all activities in the work plan are necessary and should be monitored, it is useful to identify the major activities on the basis of which objectives and indicators would be set.

Determine the indicators for each activity objective. The indicators help the monitoring team to tell how far they have gone in achieving the objectives of each activity. Compare what is happening with what was planned should be done in the process to tell whether the project is on schedule and as planned. The monitors should check at the indicators to measure how far they have reached in achieving the objectives. This should involve looking at the quality of work to ensure that it is good.

The monitoring team should then *agree on how often they should monitor* project activities as a means of verifying what is taking place. For a community project, to avoid big deviations from the work plan, monitoring visits should be carried within a reasonable time interval.

Whenever a monitoring visit is carried out, *findings should be written.* They can use a standard format which is to be agreed first that captures the findings of the exercise in relation to the work plan. The findings from the monitoring visits should be discussed. The teams should *use the information collected* to detect and solve the problems facing the project.

The monitoring and implementation teams should store the information well and use it for future actions and to inform other stake holders. At each site there should be a file in which copies of monitoring reports and other documents related to the project are kept.

1.7 What is Evaluation?

Evaluation is the systematic and objective assessment of an on-going, completed or ex-post project, program or policy, its design, implementation and results. The aim is to determine the relevance and fulfillment of objectives, development efficiency, effectiveness, impact and sustainability. It should provide information that is credible and useful, enabling the incorporation of lessons learned into the decision-making process of all project stakeholders. An evaluation should incorporate lessons learned into the decision-making process.

Evaluation also refers to the process of determining the worth or significance of an activity, policy or program. It is the process of judging value on what a project or program has achieved particularly in relation to activities planned and overall objectives, that is the process of determining the worth or significance of the project/program. It involves value judgment and hence it is different from monitoring.

Evaluation is an in-depth study of how the project has contributed to the Project Purpose and Overall Objectives. It can be distinguished from monitoring by its broader scope, being concerned with whether or not the right objectives and strategies were chosen.

1.3.1 Purpose of Evaluation: Evaluation is important to identify the constraints or bottlenecks that hinder the project in achieving its objectives. Solutions to the constraints can then be identified and implemented.

Evaluation also enables the project implementers to assess the benefits and costs that accrue to the intended direct and indirect beneficiaries of the project. If the project implemented, for example, the protection of a

spring, evaluation highlights the benefits to the people who fetch and use clean water and the cost to the people whose land is wasted and whose crops are destroyed during the process of water collection.

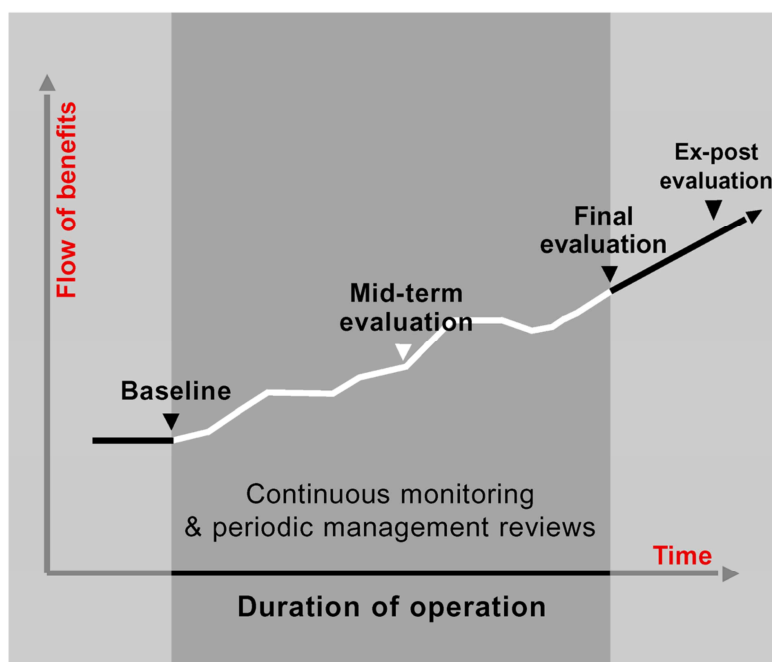
Evaluation is essential for drawing lessons from the project implementation experience and using the lessons in the planning of other projects in that community and elsewhere.

Evaluation should provide a clear picture of the extent to which the intended objectives of the activities and the project have been realized.

1.3.2. The Process of Evaluation: Evaluation can and should be done: (a) during (b) after implementation.

During project implementation: Evaluation should be a continuous process and should take place in all project implementation activities. This enables the project planners and implementers to progressively review the project strategies according to the changing circumstances in order to attain the desired activity and project objectives.

The following graphic shows when the key M&E events occur in the life of an operation and which are ongoing simultaneously.



Source: WFP

After project implementation: This is to review the project planning and implementation process, and results after project implementation. This further helps in:

- Identifying constraints or bottlenecks inherent in the implementation phase;
- Assessing the actual benefits and the number of people who benefited;
- Providing ideas on the strength of the project, for replication; and
- Providing a clear picture of the extent to which the intended objectives of the project have been realized.

1.3.3. Focuses of the Evaluation: it focuses on five major issues:

- i. **Efficiency:** - were results obtained at reasonable cost, i.e. how well means and activities were converted into results, and the quality of the results achieved. The efficiency criterion concerns how well the various activities transformed the available resources into the intended results (sometimes referred to as outputs), in terms of quantity, quality and timeliness. Comparison should be made against what was planned.

In evaluating the efficiency of a project, it is useful to consider the following questions:

- Were activities achieved at least cost?
- Were objectives achieved in a timely manner?
- Was the project implemented in the most efficient way compared to alternative ways?
- Was input material purchased locally?
- Where local tenders sought?
- What was the cost split between expatriate and local salary costs?

- ii. **Effectiveness:** -The degree to which objectives are achieved and the extent to which targeted problems are solved. In contrast to efficiency, effectiveness is determined without reference to costs. The effectiveness criterion, concerns how far the project's results were attained, and the project's specific objective(s) achieved, or are expected to be achieved.

In evaluating the effectiveness of the project, it is useful to consider the following questions:

- To what extent were the objectives achieved?
- What were the major issues influencing the achievement or non-achievement of the objectives?
- Were there shared goals between different implementing agencies (coherence?)
- Was there evidence of coordination issues **influencing achievement of objectives?**

- iii. **Relevance:** – A development project is designed and implemented in order to solve certain problems faced by people. The people whose problems are to be resolved are the beneficiaries of the project. The relevance of a project is the degree to which their real problems are being addressed by the proposed intervention.

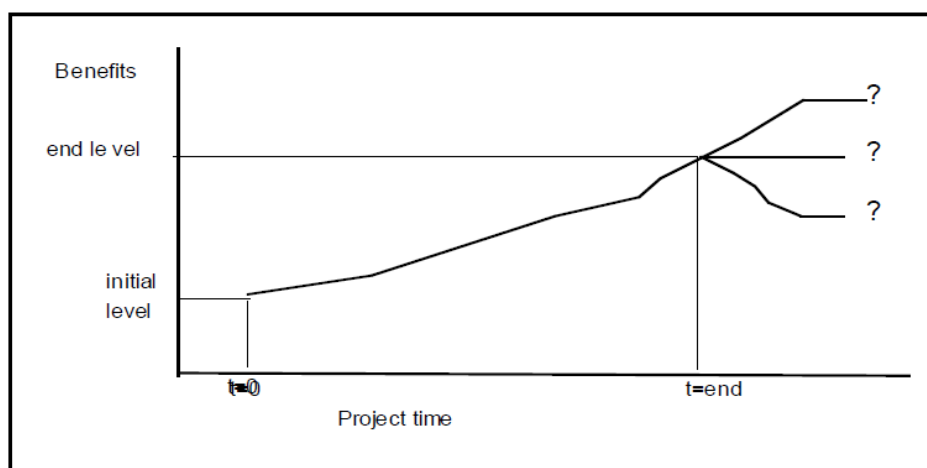
In evaluating relevance of project, it is useful to consider the following questions:

- To what extent are the objectives of the project relevant?
- Are the activities and outputs of the project consistent with the overall goal and the attainment of the objectives?
- Are the activities and outputs of the project consistent with the intended impact and effects?
- Are the activities appropriate interventions?
- Is there adequate coverage, by activity, of the affected population?
- Should the project have been discontinued earlier or should it have been extended?

- iv. **Sustainability:** - Sustainability can be described as the degree to which the benefits which are produced by the project for the communities continue after the project. It is the likelihood of a continuation in the stream of benefits produced by the project after the period of external support has ended. For example, the sustainability of a water project would be defined in terms of continued clean drinking water and continued reduction of water borne related diseases, rather than the provision of water only.

In order to assess the sustainability of a project one would have to assess the benefits produced after the project and compare them with the levels during the project. This could be part of an ex-post evaluation, and can be combined with other forms of formal impact assessment.

Sustainability: benefits against time



Source: PCM group

Technical (technology) issues, e.g. whether (i) the technology, knowledge, process or service introduced or provided fits in with existing needs, culture, traditions, skills or knowledge; (ii) alternative technologies are being considered, where possible; and (iii) the degree in which the beneficiaries have been able to adapt to and maintain the technology acquired without further assistance.

Wherever relevant, cross-cutting issues such as gender equity, environmental impact/sustainability should be appropriately accounted for and managed from the outset of the project.

- v. **Impact:** The effect of the project on its wider environment, and its contribution to the wider sector objectives. Impact evaluation investigates the changes brought about by an intervention. The expected results of an intervention are an important part of an impact evaluation, but it is important to also investigate unexpected results.
- vi. Impacts could be positive and negative, intended and unintended, direct and indirect, primary and secondary effects produced by an intervention. The expected results of an intervention are an important part of an impact evaluation, but it is also important to investigate unexpected results.

In evaluating the impact of a project, it is useful to consider the following questions:

- What has happened as a result of the project?
- What real difference has the activity made to the beneficiaries?
- How many have been affected?
- What would have happened if the project did not exist?

Interlinks and Difference of M&E: Monitoring is the process of constantly checking and reviewing what we are achieving. Evaluation is conducted once the project has already been running for a certain period of time, allowing go deeper into the examination of longer-term changes in practices and behavior. Hence, the information compiled through the monitoring system will serve as a basis for the more in-depth evaluation of the project. While doing the monitoring process, it also contributes to evaluation since the tools and thinking behind the two processes are very similar and mutually reinforcing.

Monitoring gives information on where a project is at any given time (and over time) relative to respective targets. Evaluation gives evidence of why targets and outcomes are or are not being achieved. It seeks to address issues of causality.

Evaluation is a complement to monitoring in that when a monitoring system sends signals that the efforts are going off, then good evaluative information can help clarify the realities and trends noted with the monitoring system.

Both monitoring and evaluation should be participatory, that is, an interactive in nature in the process of gathering and analysis of information in order to examine the progress, effectiveness, outcomes and impacts of projects/programs. Participation helps communities build their capacities, ownership and commitment to the project and facilitating their follow-up action. The process is a learning experience for participants for future improvement.

Table 1.1: Comparison of Monitoring & Evaluation

	Monitoring	Evaluation
When is it done?	Continuous	At fixed points
What information is collected?	Directly available information about outputs	More detailed information; may be harder to get
With what purpose?	To check that activities are being implemented as planned	To see whether the goals and objectives are being reached
Who does it?	Programme staff as part of their day to day work	Internal, or external team with specialist knowledge, assisted by programme staff
How is the result used?	To improve quality of implementation and adjust planning. As input to evaluation.	To judge the impact on the target population, adjust objectives; decide about the future of the programme.

Issues for discussion on M&E

1. Discuss on major M&E related challenges in your watershed project,
2. What are main causes of such problems, Suggest solution for future improvement?
3. Is/are any responsible person/persons/unit/team assigned for M&E activities? if not assigned what gaps you see related to M&E activities
4. How is the participation of the community, at all stages including M&E and reporting of implementation?

1.8 Process Based Monitoring (ProM)

What is Process Based Monitoring? Process Based Monitoring refers to the collection of information on the use of inputs, the progress of activities, and the way these are carried out. Process monitoring looks at why and how things have happened; it looks at relevance, effectiveness and the efficiency of processes. It involves stakeholders and beneficiaries in planning, in deciding what is to be monitored, and in developing and recording monitoring processes. Process monitoring requires documentation of how project related processes were carried out.

Processes, though not synonymous with activities, are however, closely linked with the activities. Processes refer to the way the activities are undertaken. Processes are, the methods adopted to convert the project inputs, into outputs. To the extent that project inputs and activities are under the control of the management, processes are under control.

It is a relatively recent development in the field of monitoring and evaluation providing a means to assess the quality of project and program implementation complimenting quantitative input-output progress monitoring.

Process based monitoring provide regular information to project management *on key processes* in the implementation of the project such as how community development committees are formed and operate in the day to day project management.

The process monitoring system should be part of the overall Monitoring, Evaluation and Learning system of the project, that provide feedback on the quality of project processes. This information principally guides the management on how to improve project responsiveness to community demands, maximize impact and improve the likelihood of achieving sustainable outcomes from the project.

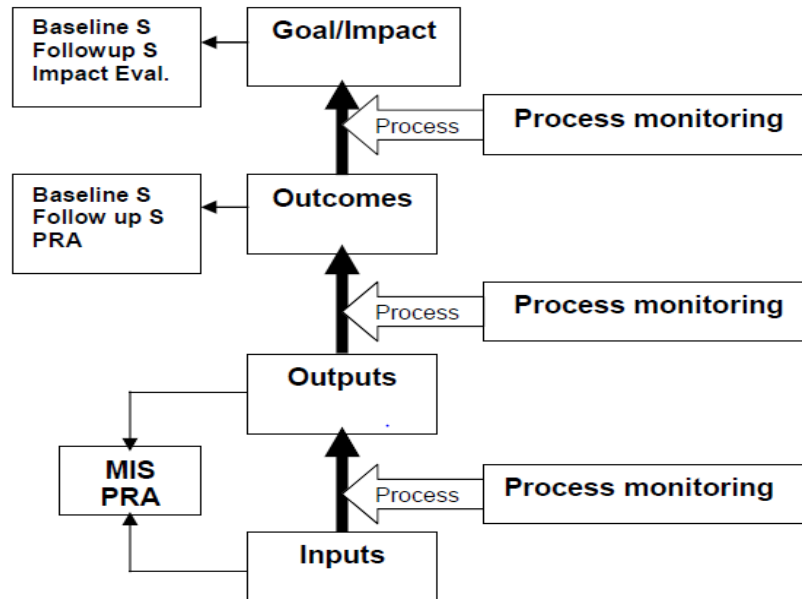
Why we do Processes Monitoring? Watershed or Rural Development projects are process intensive in nature. The results or the outcomes of such projects critically depend on the strength of processes. Tracking of these processes, especially at the earlier stage of the project is very important for the project management. At the core are primary processes, those “activities” which are directly responsible for producing desired outputs of the project.

It is a tool for institutional learning and taking corrective action in innovative and adaptive projects, particularly on those requiring behavioral/attitudinal change of the communities. In community watershed development projects, process monitoring could be tailored to key processes of community mobilization, community sensitization/awareness raising, community project management and social networks among the different groups of the watershed communities.

Projects do process monitoring to enable them;

- understand how project inputs and activities lead to results in the hierarchy as planned,
- identify critical issues that facilitate or hinder the achievement of results in the project cycle,
- provide information necessary for decision makers to increase the effectiveness of the project,
- verify the processes related to assumptions of the project,
- generate a learning and feedback mechanism
- assess whether the project management in use is best to achieve project objectives.

Fig 2: Process monitoring is schematically indicated as follows.



Source: TBIWRDP-WME

MIS based input-output monitoring could give information on input-output related progresses and achievement of outputs and resulting impacts. But such M&E process will not provide adequate explanation or identifying mediating factors that affect the performance of the project or how input-output-result/impact conversions took place. Such aspects are best assessed through process monitoring. Process monitoring looks at both internal and external factors that affect the performance of the project. As a result, process monitoring is usually conducted in process oriented projects like the watershed or rural development project.

Well-designed process monitoring system provides regular information to project management on the key processes in the implementation of the project, such as how community development committees in a watershed development project are formed and operating in the day to day management of their watershed project.

How Can We Identify Project Processes? After having good understanding of the nature of the project, the next task will be identifying key processes taking place in the course of project implementation and their indicators relevant for conducting process monitoring together with the means of verifications.

- The first stage in process monitoring is identifying all the processes involved in the project. This will be done by assessing the nature of the project and its project document, M&E framework and other similar experiences.
- Then at the second stage the respective indicators and means of verifications for each project will be identified.
- This will be followed by the selection of key processes and their indicators ,
- Design appropriate data collection tools
- The agreed processes will then be used as the basis for information collection, discussion with stakeholders, subsequent tracking of changes, analysis and reporting.

Different components of a project can have different processes and their indicators. For example in the institutional and human capacity building component of the watershed development project examples of key processes could be;

- Recruitment and training of project team,
- Sensitization and awareness raising of the community,
- Participatory identification of the poor,

- Election of community leaders,
- organization of the poor into SHGs,
- Leadership pattern in the community watersheds and SHGs, etc.

Higher level processes refer the ways in which project outputs are converted into project outcomes and project outcomes into impacts. It may be noted that the project management may not have perfect control over the way in which project outputs are transformed into outcomes and impacts.

Identifying Process Indicators: Indicators are central to process monitoring. They facilitate collection of information on different processes. With the knowledge of the processes identified and monitored in similar projects and following a preliminary set of indicators identified in the project document, process indicators can be identified. First identify key processes related to the project as described above and then for each key process, indicators should be identified that help to monitor their progress.

Note that process monitoring can help the project's M&E/MIS systems to capture and communicate critical processes and outcomes. Process monitoring is not meant to be a substitute for routine project monitoring through MIS and internal systems of management monitoring and review.

Exercise

1. Identify key processes and their respective indicators in your watershed project. Give more emphasis to processes at the earlier stage of the project and present results to the participants. Note; Each group to do separately for each component of the project
2. What are the major advantages of identifying and monitoring of such processes to the project management?

Part II: Results Framework and Results Based M&E

2.1. Defining Result Based Management (RBM)

What is Result? A Result is a describable or Measurable Change resulting from a cause and effect relationship (CIDA 1999). Similarly Sida (2007) defined results as “The outputs, outcomes and impacts (intended or unintended, positive and/or negative) of a development intervention. In the project planning process, expected results are answers to problems identified and focus on changes that the project is expected to bring about. It often relates to the use of outputs by intended beneficiaries and is therefore usually not under full control of an implementation team.

Results Based Management (RBM) is therefore, a management strategy focusing on performance and achievement of outputs, outcomes and impacts (UNDP 2002). It is a management strategy aimed at achieving important changes in the way organizations operate, with improving performance in terms of results as the central orientation. The approach focuses on achieving outcomes, implementing performance measurement, learning, and adapting, as well as reporting performance. It is an orientation towards outcomes and an impact (rather than outputs) is often regarded as the distinctive feature of RBM.

Results Based Management is also said to be a management strategy that seeks to adopt a client and/ or target group perspective. Results-based management is a participatory and team-based approach to program/project planning and focuses on achieving defined and measurable results and impact. It is designed;

- to improve program/project delivery and strengthen management effectiveness, efficiency and accountability.
- RBM helps moving the focus of programming, managing and decision-making from inputs and processes to the objectives to be met.

It works at all stages of the project cycle. At the planning stage it ensures that there is a necessary and sufficient sum of the interventions to achieve expected result. During the implementation stage RBM helps to ensure and monitor that all available financial and human resources continue to support the intended results.

RBM can make a critical difference over past approaches in the way that development results are mutually defined and agreed upon with the community and stakeholders, employs a participatory approach. This ensures commitment and a common understanding of what the project or program is trying to achieve, flexibility is built into the project/program to allow for the adjusting of strategies to ensure development results. It adopts flexible management, involving the participation of key project stakeholders throughout the project cycle, in the planning, implementation, monitoring and reporting.

Dimensions of RBM: Results-based Management involves the following dimensions:

- i. Defining realistic results based on appropriate analysis;
- ii. Clearly identify program beneficiaries and designing programs that meet their needs and priorities;
- iii. Using results information to make effective management decisions;
- iv. Monitoring the progress of expected results and resources spent with the use of appropriate indicators;
- v. Increasing knowledge and improving practice through lessons learned;
- vi. Identifying and managing risks;
- vii. Reporting on results and resources used.

RBM seeks to overcome what is commonly called the “*activity trap*”, i.e. getting so involved in the day-to-day activities that the ultimate purpose or objectives are being forgotten. Therefore, RBM helps to clarify, early on, the purpose of a project or program and thus the expected results. It also helps

to manage more effectively for results by modifying project activities or approaches to better meet expected results rather than managing solely on the basis of activities.

RBM and participatory development approaches are not only complementary, but essential to one another. In RBM, programs/projects must be designed, planned, implemented and monitored using a participatory approach where all stakeholders are involved throughout the program/project life-cycle. Expected results must be mutually defined and agreed upon through a consensus building involving all major stakeholders. This enhances stakeholder's sense of ownership and subsequent commitment to continuous performance assessment, annual performance appraisal, program/project adjustments and annual work planning. Primary purpose is thus improving efficiency and effectiveness through organizational learning, and secondly to fulfill accountability obligations through performance reporting.

Special feature of RBM is its focus on clients: working with and being responsive to project beneficiaries or clients concerning their preferences and satisfaction with goods and services provided. It views that key to success is the involvement of stakeholders throughout the management lifecycle in defining realistic expected results assessing risks, monitoring progresses, reporting performance and integrating lessons learned into management decisions.

2.2. Results-Based Monitoring and Evaluation (RBME)

It is the core dimension in Results Based Management (RBM). It is an exercise to assess the performance of an institution and/or a program or a project, on the basis of impacts and benefits that the institution and/or the program/project is expected to produce. It introduces a monitoring approach designed to keep tracking the project expected results throughout the management process. That means at the heart of RBM is the tracking and assessment of performance, that is, monitoring and evaluation. It is so important that the terms RBM and Results Based Monitoring and Evaluation (RBME) are often used interchangeably.

In the results based approach, project planning, implementation, monitoring and evaluation processes should be geared towards ensuring that results are achieved—not towards ensuring that all activities and outputs get produced as planned.

Results-based monitoring is continuous process of collecting and analyzing information on key indicators and comparing actual results with expected results in order to measure how well a project, program, or policy is being implemented. It is a continuous process of measuring progress towards explicit short, intermediate, and long-term results through tracking of predetermined **targets** by using **indicators**. Results-based monitoring can provide feedback on progress (or the lack thereof) to staff and decision makers, who can use the information in various ways to improve performance.

Results-based evaluation is an assessment of planned, ongoing, or completed intervention to determine its relevance, efficiency, effectiveness, impact, and sustainability. The intention is to provide information that is credible and useful, enabling lessons learned to be incorporated into the decision-making. Evaluation takes a broader view of an intervention, asking if progress toward the target or explicit result is caused by the intervention or if there is some other explanation for the changes picked up by the monitoring system. Evaluation questions can include:

- Are the targets and outcomes relevant?
- How effectively and efficiently are they being achieved?
- What unanticipated effects have been caused by the intervention?
- Does the intervention represent the most cost-effective and sustainable strategy for addressing a particular set of needs?

Results monitoring measures whether the project is moving towards its objectives – that is, what results have been accomplished relative to what was planned? Information from results monitoring is important

not only for influencing medium-term project management decisions aimed at improving the project's performance but also for reporting to donors, partners and other stakeholders.

Monitoring project performance at the different levels in the results chain involves different data sources and methods, different frequencies of collection, and varying collection responsibilities. It is good practice to prepare a performance monitoring plan at the commencement of the project indicating who will collect what data when and how.

What are main characteristics of RBME? RBME is applicable to countries, sectors, programs/project and organizations. It is;

- Goal-oriented: setting clear goals and results provides targets for change, and opportunities to assess whether change has occurred.
- Causality (or “results chain”): various inputs and activities leading logically to outputs, outcomes, and impact.
- Continuous improvement: periodically measuring results provides the basis for adjustment to keep programs/projects on track and maximize their outcomes.

As a Summary;

- 1 *Monitoring should be done both at implementation progress and results achievement levels.* While the move to monitoring higher level results is positive, this should not be accomplished at the expense of traditional implementation monitoring. Both of these types of monitoring are needed, although for different uses and users. As a project matures, there may be a logical emphasis on monitoring results.
- 2 *Complement results based (performance) monitoring with evaluations to ensure appropriate decisions.* Performance monitoring and evaluation should both be viewed as important dimensions of an effective results based management system that can complement each other. Performance monitoring data alerts managers to performance problems but without further analysis it may not present solutions. Performance monitoring data alone are often not adequate for making wise decisions. Evaluations, which examine why performance is good or bad by exploring cause-effect relationships and which typically make action recommendations, are useful complements.

2.3. Why Results Based Management?

Historically, project monitoring system focus on inputs (what is spent and supplied), activities (what is done), and outputs (what is produced). Although accurate information at this level is important, it did not tell whether or not projects are making progress towards solving problems they had set out to resolve during designing projects, and that the problems often remained once projects were completed.

However, modern management requires looking beyond, supplying inputs, doing activities and producing outputs to focus on actual results: the changes created, and contributed by the projects. Project managers and staff can manage their projects in order to maximize achievement of development results that is a sustained improvement in the lives of the people in the project area by establishing clearly defined expected results, collecting information to assess progress on a regular basis, and taking timely corrective action.

Its primary purpose is, therefore, to improve efficiency and effectiveness through organizational learning, and secondly to fulfill accountability obligations through performance reporting. In the results based approach of project management, planning, monitoring and evaluation processes should be geared towards ensuring that results are achieved—not towards ensuring that all activities and outputs get produced as planned. The monitor's responsibility in RBM is to see whether the work has been done efficiently and effectively. Such kind of evaluation adopts a broader perspective than monitoring of input/output considering **‘Are we doing the correct project?’** Evaluations focus on progress towards realizing a project's purpose and goal.

How can we measure Result or Performance? Project performance is measured on the basis of **INDICATORS** – signs that show changes or progress that have been induced by an activity or a set of activities of the project implementation.

2.4. What are the Principles of RBM?

The implementation of RBM is based on six principles

i. Partnership

For RBM to be successful, expected results must be mutually defined and agreed upon by all major stakeholders through a consensus building process. Mutually agreed upon results enhances stakeholders sense of ownership and subsequent commitment to continuous performance monitoring and management. Participation improves the quality, effectiveness and sustainability.



Projects usually involve and affect a wide range of stakeholders. Involving only one stakeholder group in the definition of results will likely give only one perspective of what the project can hope to accomplish. Undertaking a stakeholder analysis early in the project and ensuring the participation of a cross-section of female and male stakeholders can contribute to more realistic development results. Every stakeholder has a stake to say and contribute to the development process.

- ii. **Accountability:** Sharing Responsibility is a key element of accountability in the implementation of a project. The stakeholders will accept to be accountable if decision and management authority is clearly defined and agreed upon.
- iii. **Transparency:** It is necessary that results reporting be transparent. Clearly identify the expected results and the corresponding indicators so that results are measurable. The implementation of a Measurement Performance Framework will generate data that will be used in the preparation of better-documented reports that will be used for efficient decision-making.
- iv. **Simplicity:** Make it simple. The RBM approach implemented must be easy to understand and simple to apply. Too much complexity in the data collection system and performance measurement is the major obstacle to the efficient implementation of RBM. It is better to start with a limited number of results statements and indicators in order to better measure and monitor the expected results.
- v. **Learning by doing:** Implement RBM on an iterative basis, refining approaches as we learn from experience. Practical experience through the implementation process, is a necessary exercise for capacity development and for improving the implementation of RBM methods and tools.
- vi. **Broad Application:** apply the RBM approach to all programs and projects. All new projects to be designed on the basis of a Performance Framework identifying results.

2.5. Traditional vs. Results-Based M&E

There are some key features of traditional implementation focused and results based M&E Systems. Traditional implementation focused M&E systems are designed to address compliance’ the “did they do it” question. Did they mobilize the needed inputs? Did they undertake and complete the agreed activities? Did they deliver the intended outputs (the products or services to be produced)? That means traditional M&E focuses on the monitoring and evaluation of inputs, activities, and outputs (on project or program implementation). The implementation approach focuses on monitoring and assessing how well a project, program, or policy is being executed, and it often links the implementation to a particular unit of

responsibility. However, this approach does not provide policy makers, managers, and stakeholders with an understanding of the success or failure of that project, program, or policy in terms of results.

Results based M&E, in contrast, combines the traditional approach of implementation monitoring with the assessment of results. It is this linking of implementation progress with progress in achieving the desired objectives or results of projects/programs that make results based M&E useful as a project management tool. Implementing this type of M&E system allows the organization to modify and make adjustments to the implementation processes in order to more directly support the achievement of desired objectives and outcomes.

Results based M&E systems are designed to address the “so what” question. So what about the fact that outputs have been generated? So what that activities have taken place? So what that the outputs from these activities have been counted? A results-based system provides feedback on the actual outcomes and goals of government actions.

Traditional focuses on; inputs, activities, outputs

Whereas Results-Based M&E;

- combines traditional with assessment of outcomes and impacts
- allows organization to modify and make adjustments to theory of change and/or implementation processes

2.6. Consideration of Cross-cutting issues in RBM

The purpose of any project/ program should be to ensure sustainable development, in order to reduce poverty and to contribute to a more secure, and equitable development. To achieve this purpose, poverty reduction, gender equality and environmental sustainability should be well considered in designing of projects.

The development of expected results must take into account the following elements:

- The project or program’s contribution to poverty reduction, along with gender equality and environmental issues at the design stage of any project or program;
- Adequate analysis on poverty, gender and environmental impacts assessment at the start of the project. Such analyses can provide a more holistic picture of the context in which the project is implemented and influence the type of strategies that can best contribute to addressing the issues.
- Baseline data and project performance indicators disaggregated by sex are critical to monitoring and management under RBM.
- Reporting regularly on cross-cutting themes is important to trace positive changes across these issues.

2.7. Monitoring of Risks and Assumptions

Analysis of factors called assumptions in the logframe that affect or are likely to affect the successful achievement of an intervention’s objectives is equally necessary as implementation/results monitoring. All projects face some types of *risks* that can hinder the ability of the project to achieve its objectives or expected results. These risks should therefore be identified and monitored and assessed closely by M&E to establish if any action is needed to mitigate against any internal or external threats to the project.

Four-point rating scale in the assessment or monitoring of project risks.

Criteria	Very low (1)	Low (2)	High (3)	Very high (4)
Likelihood of occurrence	Very unlikely	Unlikely	Likely	Very likely
Potential impact on the project ability to meet objectives	Routine procedures sufficient to deal with consequences	Could threaten goals and objectives, and thus may require monitoring	Would threaten goals and objectives, and thus may require review	Would prevent achievement of goals and objectives

Source: CIDA, 1999

Internal risks to a project refer to those that are within a project and its sphere of influence. Such risks may include delays in delivery of key results, slow release of funds to implementing partners, or staff turnover or late appointments. These types of risks needed to be managed if expected outputs and outcomes are to be achieved according to schedule.

External risks are those outside the project and are beyond its immediate control. Along with *Risk Analysis*, project M & E are responsible for monitoring and evaluating project assumptions. These are found in the far right hand column of the *Logical Framework*.

2.8. Reporting on Results

Reporting on results is much more than reporting on activities. It assesses the achievement in comparison to the plan. Reporting is also a communications tool among project partners. The overall purpose for reporting is to support the achievement of development results.

Reporting on Results should reflect as many of the following elements as possible:

- actual results achieved against planned results for the various levels of the results chain, if possible (i.e. at output, outcome and impact or long term);
- description of the key activities undertaken during the reporting period that have supported the achievement of results, and any variance of these activities from the approved work plan;
- identification and analysis of factors, risks, issues or challenges affecting the achievement of results and mitigation measures;
- describing how the project addresses gender equality or environmental issues;
- beneficiary reach;
- information on required modifications to planned project results and associated resource allocation;
- recommended modifications to the approved Annual Work plan;
- lessons learned on achievement of results; cost-effectiveness, relevance of results, partnership, appropriateness of design, appropriateness of resource utilization;
- degree of sustainability of results over a period of time;
- Recommendations for action;

For this, reporting formats must be designed and agreed upon to collect sufficient information at all levels of indicators and satisfy all level stakeholders needs and requirements.

2.9. Feedback mechanism

Performance measurement should yield good information that can be used during project implementation to adjust strategies. The Monitoring and Evaluation system should continuously deliver information on results to decision makers at all levels and provide feedback to project stakeholders.

The feedback mechanism should be set up at the beginning of the project design and belongs to the management process as a routine activity. If being used properly, feedback can act as a very helpful tool to decision making.

As a principle, feedback should flow from within the organization, at different management levels: field units, local stakeholders (implementers) and project management as well as donors. The implementing units provide data and information to higher levels of the organization about the progress, achievements, difficulties and recommendations.

There are some forms of sharing findings:

- Community feedback: findings can be communicated with the communities which the project targets. Most of the communities may not have access to information technology, thus alternative methods like meeting, pamphlets, and posters can be used to reach them.

- Presentations and workshops with staff: this approach allows local staff to review the findings to ensure that the data being collected and the information being provided to decision makers is still relevant, and of maximum utility.
- Multi-stakeholder workshops: these can involve beneficiaries, staff, donors, other NGOs, government and others.
- Dissemination of reports to different stakeholders, media, posting on web and other mean.

These methods are important in cross checking the findings, generating new insights, communicating results, disseminating experiences and in helping different stakeholders understand various opinions and views.

Discussion points

- 1) *Discuss your watershed project in terms of the Results Based M&E system establishment.*
- 2) *Identify and discuss major strengths and weaknesses of your watershed project in terms of implementation of RBME.*
- 3) *Does your watershed project have a performance measurement framework? Do you see any difference from the template shown in the training?*
- 4) *How do you evaluate your watershed development project in comparison to the key RBM principles? Did the key partners identified since the design phase along the monitoring and evaluation process? What are issues that could be further seen and strengthened?*

2.10. Results Based Frameworks

The Concepts

A results chain serves as a "roadmap" that leads from project activities to outputs and final outcomes (results). Activities are not results in themselves, but they should lead to the expected results.

A results chain clarifies the logical sequence of outputs and outcomes that are expected to flow from the project activities, and identifies the steps that will demonstrate progress toward their achievement.

The purposes of the results chain are:

- To clarify the linkages among inputs, activities, and results at various levels
- To communicate internally and externally about the rationale, activities, and expected results of the project
- To test whether the project makes sense from a logical perspective
- To provide the foundation for performance measurement and evaluation strategies (i.e., determining what constitutes success).

Helpful Definitions

Result: The output, outcome or impact (intended or unintended, positive and/or negative) of a development intervention

Results chain: The causal sequence for a development intervention that stipulates the necessary sequence to achieve desired objectives beginning with inputs, moving through activities and outputs, and culminating in outcomes, impacts. The results chain is sometimes called a logic model or result framework.

Impacts: Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended.

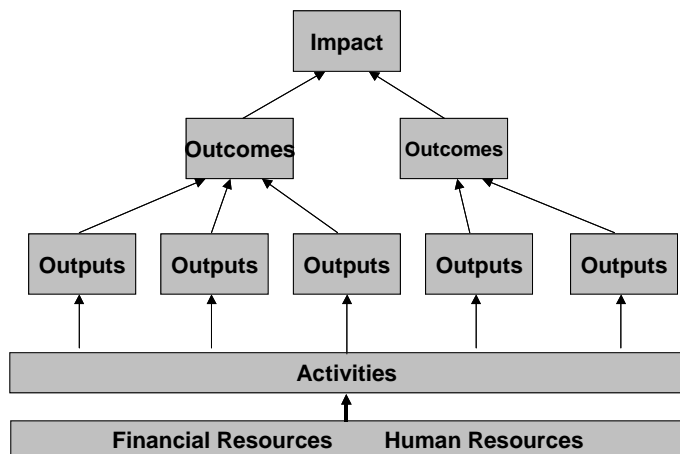
Outcomes: The likely or achieved short- to medium-term effects of an intervention's outputs.

Outputs: The products, capital goods and services which result from a development intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes.

Inputs: The financial, human, and material resources used for the development intervention.

Activities: Actions taken or work performed through which inputs (such as funds, technical assistance and other types of resources) are mobilized to produce specific outputs. Activities turn inputs (human and financial) into outputs.

(OECD DAC)



Logical Linkages

The results chain specifies the logical linkages among the inputs, activities, outputs, expected outcomes, and impacts of the project .

Overall, this means that:

- the inputs and activities should support the achievement of outputs
- the cumulative achievement of outputs should lead to the achievement of outcomes
- the achievement of outcomes should support the achievement of impact.

Focus on Change

Results should indicate the expected change or transformation that is expected at the end of an intervention. The wording should capture the desired state at the end of the project.

Outcomes in a logic model typically describe the consequences of the activities and outputs. They have an action word associated with them (e.g., "increased", "improved").

Outcome results
Use “action” words
Improved
Increased
Strengthened
Reduced
Enhanced

SMART Results

In the results chain, results statements should be designed so that it is easy to understand what situation will change, who will benefit, and where the change will occur. They should be relevant to the beneficiaries. They should be easy to measure and be achievable within the parameters of the project (time, resources available).

SMART Results

Specific

Measurable

Achievable

Relevant

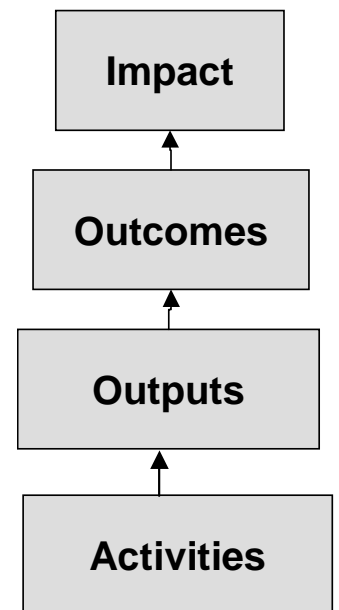
Time Bound

The framework to assess the appropriateness of results is often referred to as the SMART principle (see sidebar).

The Content

A results chain contains four result levels (impact, medium-term outcomes, short-term outcomes, and outputs) and one process level element (activities):

- **Impact** – The final intended result of the project. Impacts are effects that take a longer time period to be realized, are subject to influences beyond the intervention itself, and can also be at a more strategic level.
- **Outcomes** – The short and medium term results of outputs that will lead to achievement of the impact.
- **Outputs** – The results of the project activities, outputs are the products or services generated by the activities and provide evidence that the activity did occur.
- **Activities** – The actions that project staff engage in that are intended to contribute to the achievement of the outputs.



The Steps and Processes

A results chain for a project is designed through an inclusive process that involves stakeholders from various groups:

- stakeholders that will be affected by the project,
- those that will benefit from the project,
- those that will implement or deliver the project .

This is an iterative process that may involve several workshops with stakeholders, analysis of the proposed results statements, going back to stakeholders for feedback, etc.

Depending on the size of the project it may take several sessions to develop a good results chain.

Tip: Remember, the results chain will be the basis for monitoring and evaluating the project, so make sure it is appropriate!

Checklist for SMART Results

Specific

- What:** The result states the specific type of change that will occur (individual, organizational, institutional, societal) and/or the specific products or services that will be provided
- Who:** The result states the specific target group or beneficiary of the intervention
- Where:** The location or site where the result will occur is stated

Measurable

- The result can be measured by either quantitative or qualitative indicators
- The type of change is defined clearly enough that appropriate measures will be easily found

Achievable

- The result is within the scope of the project's control or sphere of influence
- The result is achievable within the project budget and time period
- The duration or timeframe given for the result is appropriate to the type of beneficiary targeted

Relevant

- The result addresses identified needs and/or problem(s)
- The beneficiaries or target groups were involved in designing this result and/or in giving input into the design of this result

Time-bound

- The timeframe when the result will happen is specified

Checklist for a Good NBI Results chain

Impact:

- The impact(s) can be realistically achieved 5-10 years after the intervention (5 years for an NBI project, 10 years for an NBI program)
- The impact links to one of NBI's medium-term results
- Long-term beneficiaries are clearly identified
- Long-term changes at the societal level clearly identified

Short-term Outcomes

- Proposed changes are realistic in the time frame (1-3 years for a project, 1-5 years for a program)
- There are a manageable number of short-term outcomes (3-4)
- Beneficiaries are clearly identified
- The types of expected change are clearly stated
- Achievement of the combination of outcomes will contribute to achievement of the impact

Outputs

- There are a reasonable number of outputs for each short-term outcome (4-5)
- Proposed changes are realistic in the time frame (continuously during the project)
- Outputs support achievement of the short-term outcome
- Deliverables (products) are clearly identified

Example of a Results Chain

Agricultural Products Trade Project

The long-term goal of the Agricultural Products Trade Project (AFTP) is to develop cross-boundary trade in agricultural products, thus enhancing food security in areas where yield is low due to drought, environmental problems or diversion of water resources.

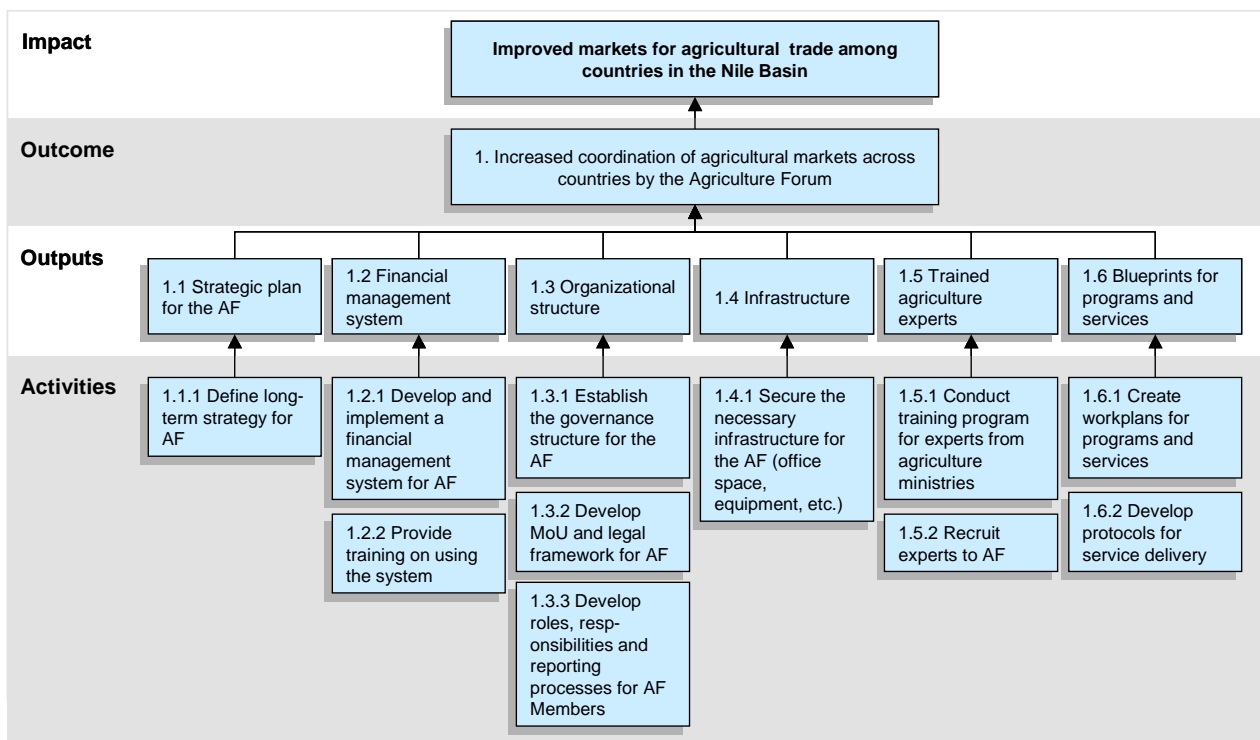
The purpose of the AFTP is to create the Nile Basin Agriculture Forum (AF), an institution that will coordinate the development of cross-boundary agricultural markets among the Nile Basin countries.

Once created, the Agriculture Forum will support dialogue and special studies to explore a range of policy-related issues, including institutional and regulatory frameworks for trade and mechanisms for poverty reduction.

In support of this purpose, the project activities for AFTP focus on the institutionalization and operation of the Agriculture Forum.

A needs assessment found that the following were required to establish an effective Forum: a long-term strategy, a financial management system, an appropriate organizational structure, an adequate infrastructure, and trained experts in agriculture to take part in the Forum.

The results chain below shows how the various activities of the project lead to its expected results.



Logframe

The Concepts

Over the last 30 years, logframes have been used to plan projects and to present them to inside and outside stakeholders.

A logframe is a management tool that summarizes the entire project:

- It captures the design of an intervention, most often at the program or project level
- It identifies results (inputs, outputs, outcomes, impact) and their causal relationships, performance indicators, and the challenges and constraints that may influence success
- It facilitates planning, management, monitoring and evaluation of an intervention.

The Content

A logframe is typically presented as a matrix with several columns and rows. While there are many different logframe formats, most organizations have 4-column matrix that captures the following:

- Results at all levels (impact, outcomes, outputs)
- Performance indicators to measure the progress of each result
- Means of verifications are sources to collect information
- Assumptions that may affect achievement of results.

For each of the outputs, the main groups of associated activities may be included (the activities do not require indicators).

Results	Indicators	MOV	Assumptions
Impact			
Outcomes			
1.1			
1.2			
2.1			
...			
Outputs (with main activities)			
1.1.1			
1.1.2			
1.2.1			

Column 1 of the Logframe: Results

Results	Indicators	Assumptions
---------	------------	-------------

In Column 1 of the Logframe enter the following results:

- Impact – the impact statement from the results chain, which should correspond to the goal of the project
- Enter the outcome statements from the results chain. Each outcome should be associated with one of the objectives.
- Outputs – identify the outputs required to achieve each outcome
- Activities – identify the main activities that will lead to each output. These activities do not need indicators associated with them

Column 2 of the Logframe: Performance Indicators

Results	Indicators	Assumptions and Challenges and constraints
---------	------------	--

Performance indicators are the ‘measuring sticks’ that are used to assess progress toward project results. They measure performance by noting changes over time.

There are two types of indicators:

- Qualitative indicators that show changes in attitudes, behaviors, skills, perceptions, quality, level of understanding, etc.

- Quantitative indicators that show changes in numbers, frequency, ratios, percentages, etc.

In Column 2 of the Logframe, enter the performance indicators for each level of results (output, outcome, impact).

Involve stakeholders in identifying several indicators for each of the results – perhaps in a group brainstorming session

Use the *Selection Criteria for Good Indicators Checklist* (below) to assess the appropriateness of the indicators. Select two to three indicators per result.

Try to mix qualitative and quantitative indicators to the extent possible.

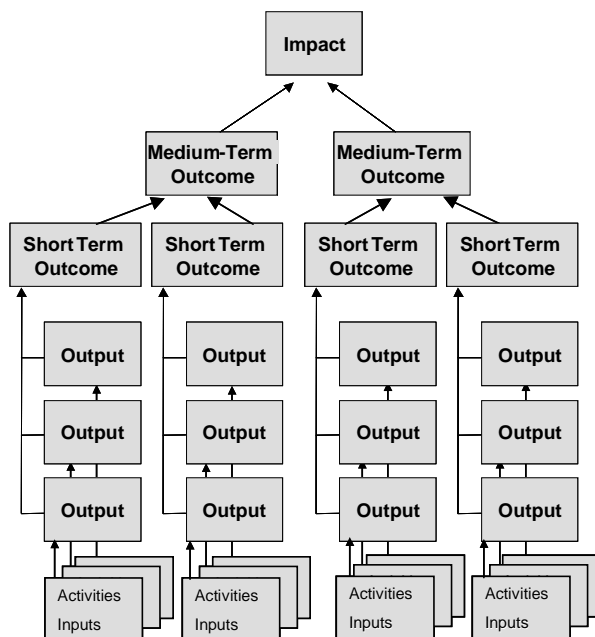
Helpful Definitions:

Performance: The degree to which a development intervention or a development partner operates according to specific criteria/standards/ guidelines or achieves results in accordance with stated goals or plans.

Performance measurement: A system for assessing performance of development interventions against stated goals.

Performance Indicator: A variable that allows the verification of changes in the development intervention or shows results relative to what was planned. Related terms: performance monitoring, performance measurement.

Note: Process indicators (which measure the delivery of activities) and input indicators (which measure the use of financial, human and technological inputs) are not included in the Logframe, but you may want to develop these for your own management purposes. They could be included in activity descriptions or in the management strategy sections.



Selection Criteria for Good Indicators

Validity - Does it measure what it is intended to measure?

- Will this indicator really measure the result?
- Could the indicator be affected by things other than the result?
- Will the data mean what it is thought to mean?
- Can you support, defend and justify the indicator in logical or scientific terms?

Affordability – Do you have the resources to collect data?

- Can you afford to measure this indicator, given the need for timely, accurate information?
- Is the potential cost worth the information you will get?
- Could these resources be better used to measure other types of change?
- Can it be done given the time considerations with respect to this result?

Reliability – Will it be consistent over time?

- Does this indicator permit you to measure the result over time?
- Will it consistently produce the same data if it is applied repeatedly to the same situation over time?

Simplicity – How easy will it be to collect the data?

- What are the data collection procedures related to this indicator?
- Are the sources of information easily accessible?
- Is the equipment and/or expertise needed to track the indicator readily available?
- Does this indicator allow a relatively easy analysis of the result?
- Is it clear and direct enough to be understood by all stakeholders?

Usability – Will the information collected be useful for decision-making?

- Will the information generated meet the needs of various stakeholders?
- Will knowing about this issue help you or other stakeholders to do things better or more effectively? Can you do what you need to do with the information?
- Will the information be presentable in a format that will resonate with the intended audience?
- Will the information generated illustrate efforts made and progress achieved?
- Does it make it easy to communicate the status of the result?
- If necessary, does this indicator allow you to compare this result to other results?
- Will this indicator provide the information in a time frame that allows it to be useful?

Neutrality – Will the indicator measure positive and negative changes?

- Will the indicator measure both improvements and declines of the situation?

Column 3 of the Logframe: Assumptions

Results	Indicators	Assumptions and Challenges and constraints

Definitions

Assumptions: Hypotheses about factors that could affect the progress or success of a development intervention. Assumptions are the conditions that would enable the project to take place and the project logic to work.

Performance Measurement Framework

The Concepts

Performance Measurement Framework (PMF) is a tool to organize results monitoring and evaluation processes. The PMF links what you will monitor with how you will do it. It is designed at the start of a project, may be updated annually, as required and is used for baseline collection and later for comparison with actual progress.

The Content

The elements of the PMF are presented in a 9-column matrix like the one shown below.

The sections that follow provide detailed guidance on completing the PMF.

The Steps and Processes

Completing the PMF involves the following steps:

- Start by entering the results statements and performance indicators from the logframe
- For each indicator, select data sources, data collection methodology, and frequency for data collection.
- Define roles and responsibilities for data collection, and what the data will be used for
- If baseline data are available, record this in the PMF. If baseline is not available, keep it in mind as one of the next steps to take in completing the PMF
- Once the baseline is established, you may wish to establish targets for the changes in status of each indicator

PMF Matrix

Level	Results	Performance Indicators	Data Source	Collection Methods	Frequency	Responsible	Data Use	Baseline	Target
Impact									
Medium Term Outcome 1									
Short-Term Outcome 1.1									
Output 1.1.1									
Repeat for all results									

Columns 1 and 2 of the PMF: Results and Performance Indicators

Results	Performance Indicators	Data Sources	Methods	Frequency	Responsible	Data Use	Baseline	Target
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Enter the results statements and performance indicators in columns 1 and 2 of the PMF.

In the process of defining methodology for data collection, you may need to adjust, change, or revise a results statement or indicator. If you do, remember to revise these on the Logframe for consistency.

Logframe

Objectives and Results	Performance Indicators	Assumptions and Challenges and constraints
Goal		
Impact	Performance indicator at impact level	Challenges and constraints from Outcome to Impact level
Objectives		
Medium-term and short term outcomes	Performance indicator at outcome level	Challenges and constraints from Output to Outcome levels
Outputs	Performance indicator at output level	Challenges and constraints from Activity to Output level

Results	Performance Indicators	Data Sources	Methods	Frequency	Responsible	Data Use	Baseline	Target
Impact								
Medium-term Outcomes								
Short-term Outcomes								
Outputs								

Column 3 of the PMF: Data Sources

Results	Performance Indicators	Data Sources	Methods	Frequency	Responsible	Data Use	Baseline	Target
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Once you have developed the performance indicators for each result, you will need to determine where you can access the data you will require.

Data sources may include people, documents, site visits, etc. Sources may be quantitative (surveys and statistical data, government report data) or qualitative (interviews, focus groups, reports).

- First, you should brainstorm with other internal stakeholders to identify up to three potential sources of data for each indicator.

- Then examine the data available from each source and try to establish which source will be able to provide the most consistent information throughout the project. (Over time, your sources may change.)
- Identify at least one source of data for each indicator.

Enter the data source(s) for each indicator in Column 3 of the PMF.

- People Sources**
- Government representatives
 - Beneficiaries: Individuals or groups
 - Internal stakeholders, donors, partners
 - External stakeholders
 - Media representatives

- Document Sources**
- Project documents
 - Donor documents (evaluations, monitoring missions)
 - Media articles
 - Records
 - Testing records
 - Organizational documents
 - Survey and statistical data, such as:
 - Weather data
 - Demand data
 - Habitat data
 - Census data
 - Household data

Column 4 of the PMF: Data Collection Methods

Results	Performance Indicators	Data Sources	Methods	Frequency	Responsible	Data Use	Baseline	Target
---------	------------------------	--------------	---------	-----------	-------------	----------	----------	--------

For each data source identified, select the most appropriate data collection method and record it in Column 4 of the PMF.

A good data collection methodology should allow you to systematically collect the information you require. The methods you use may vary, and you may decide to use a variety of techniques that complement each other.

Each method has its own advantages and disadvantages, as shown in the table below.

Another good resource is *Toolkits, a practical guide to planning, monitoring, evaluation and impact assessment*. (Save the Children, 2003) which is provided in Appendix 2.

Column 5 of the PMF: Frequency of Data Collection

Results	Performance Indicators	Data Sources	Methods	Frequency	Responsible	Data Use	Baseline	Target
---------	------------------------	--------------	---------	-----------	-------------	----------	----------	--------

The frequency of data collection for each result will depend on the duration of the project, the project context and effectiveness, and on the level of the result you are measuring.

Generally speaking, the lower the result level, the more frequently you will need to measure it.

For example:

- Outputs, which generally occur in shorter time frames, should be analyzed more frequently than outcomes, which take longer to achieve.
- Outcome indicators should be measured at the beginning of a project to establish a baseline – after that, they can be assessed annually or bi-annually.
- Impact indicators are usually measured several years after the project ends.

For each performance indicator, indicate how often data will be collected in Column 5 of the PMF.

For each indicator, look at the result level and decide what frequency is relevant.

- For outputs, consider more frequent assessments – semi-annually at least.
- For outcomes, the frequency should reflect the nature of the expected results – how often do you think there will be an observable change in the indicator? Can you expect to see changes after 1 year, 2 years?

Column 6 of the PMF: Roles and Responsibilities

Results	Performance Indicators	Data Sources	Methods	Frequency	Responsible	Data Use	Baseline	Target
---------	------------------------	--------------	---------	-----------	-------------	----------	----------	--------

For each indicator, who would be best suited to collect the data, analyze it, and report on a given indicator?

Consider the data sources – who is ‘closest’ to the sources identified?

Consider the result level:

- For project outputs, it will likely be project staff who will collect the data
- For outcomes, the project manager may be the most appropriate person to collect and analyze the data. (Program managers are also responsible for reviewing project level reports to assess the achievement of the program on a cumulative basis.)

While it is important that the Project Steering Committee (PSC) plays a role, that role will be limited to analysis of program level reports and approving the reports.

For each performance indicator, enter the name of the person or group responsible for data collection in

Column 6 of the PMF.

Possible Roles and Responsibilities

Team Members	Data Collection	Data Analysis	Data Validation	Reporting	Report Approval
Technical Assistance Committee (TAC)					√
Project Steering Committee (PSC)					√
Program Managers		√	√	√	
Lead Specialist	√	√		√	
National Representatives	√				
Project Partners	√				
Project Beneficiaries	√				

Column 7 of the PMF: Use of the Data

Results	Performance Indicators	Data Sources	Methods	Frequency	Responsible	Data Use	Baseline	Target
---------	------------------------	--------------	---------	-----------	-------------	----------	----------	--------

The performance data you collect will tell you whether intended results are being achieved, and you will use this information in your reports and subsequent workplans.

Performance information will also be used in a variety of other ways for different audiences. It may be used to support learning, decision-making, operational performance, and developmental performance. It may be used to inform stakeholders or share information.

In discussions with project stakeholders, discuss how information on each result will be used – and how it should be presented.

For each performance indicator, indicate how the data collected will be used in Column 7 of the PMF.

In the Use of Data column, enter one or more of the following

- Support decision-making at the NBI level, program level
- Monitoring performance at project level
- Work planning for project
- Reporting on project performance
- Reporting on NBI performance

Column 8 of the PMF: Baseline

Results	Performance Indicators	Data Sources	Methods	Frequency	Responsible	Data Use	Baseline	Target
---------	------------------------	--------------	---------	-----------	-------------	----------	----------	--------

Baseline data is basic information gathered before a project begins. It is used later as a basis for comparison in assessing project achievements.

Since it is difficult to judge the progress of a project without any baseline data, the status of each indicator should be examined at the beginning of a project.

Use the data sources and methods for data collection in the PMF to plan and conduct a baseline study for each indicator. Record the data in the PMF.

You may find at this point that collecting baseline information for a particular indicator is not feasible, for a number of reasons (cost, time, availability of data, etc.). If this is the case, you may need to consider other data sources or consider revising the indicator.

Record the baseline data for each indicator in Column 8 of the PMF.

Helpful Definitions

Baseline: Status of the context, project stakeholders, beneficiaries prior to development intervention for each of the indicators

Baseline study: An analysis describing the situation prior to a development intervention, against which progress can be assessed or comparisons made.

Column 9 of the PMF: Targets

Results	Performance Indicators	Data Sources	Methods	Frequency	Responsible	Data Use	Baseline	Target
---------	------------------------	--------------	---------	-----------	-------------	----------	----------	--------

Establishing performance targets for each performance indicator can provide useful guideposts to help you judge whether your project is progressing on schedule and achieving the results as originally envisioned.

A target identifies a specific, planned level of result to be achieved within an explicit timeframe.

- A final target is the planned status of a performance indicator at the end of the intervention.
- Interim targets are set for each year (or planning period) between the beginning and end of an intervention.

An example of final and interim targets is shown in the box at right.

The PMF describes only the *final* target. Parts 2 and 3 of this Toolbox, on workplans and reports respectively, show how interim targets are established and reported on.

A word of caution: It is almost impossible to establish realistic performance targets without some baseline information on the indicator. (You need to know where you are starting in order to plan how you will get to your destination.)

Targets can be either quantitative or qualitative, depending on the nature of the indicator (i.e., targets for quantitative indicators are numerical, targets for qualitative indicators are descriptive).

In setting realistic targets, it can be helpful to analyze trends to date, and to consult experts, staff, management, and beneficiaries about their previous experience and their expectations for each indicator.

Final and Interim Targets – An Example

A literacy program aims to increase the literacy rate among a certain population by 20%. Therefore, the expected result is increased literacy rate, and the **final target** is 20%.

In the program's third annual workplan, it states that, by the end of the year, the literacy rate is expected to increase to 5% above baseline levels. Therefore, 5% is the **interim target** for year 3.

Example of a Performance Measurement Framework

The following simplified PMF draws from the sample logframe for the Agricultural Products Trade Project (AFTP) in the previous section. It presents the indicators for the impact, outcome, and a selection of outputs, in addition to details on how these indicators will be measured. (Note that, for the sake of simplicity, only outputs 1.2, 1.3 and 1.5 appear on this PMF. In reality, all outputs must be listed.)

	Results	Indicators	Data Source	Collection Method	Frequency	Responsible	Data Use	Baseline (2006)	Target
Impact	Improved markets for agricultural trade among countries in the Nile Basin	Volume of agricultural trade among NB countries as a result of NBI	National agriculture and trade ministries, agricultural producers	Document review, interviews, surveys	Annual	Project Manager, Agriculture Forum	Evaluation, planning	US \$xx billion	US \$xx billion (50% increase) by 2012
Outcome	1. Increased coordination of agricultural markets across countries	Level of effectiveness of the AF in creating and disseminating information, facilitating dialogue, and establishing trade principles	Evaluations and other reviews of Agriculture Forum	Document review	In 2008, 2010 and 2011	Project Manager	Accountability	N/A	Evaluation finds AF to be highly effective
		Adoption of common agricultural policies in NB countries	National agriculture ministries	Document review, interviews	Annual	Project Manager, Agriculture Forum	Evaluation, planning	Zero	All nine countries by 2012
Output	1.2 Financial management system	Minimal instances of non-compliance	Audit of financial management system	Document review, interviews	In 2008	Project Manager	Accountability	N/A	Less than 3 instances of non-compliance noted in audit

1.3 Organizational Structure	Signature of MoU by participating countries	Nile-COM	Committee meetings	Once	Project Manager	Evaluation, planning, accountability	MoU not created	MoU developed and signed by 2008
	Implementation of reporting processes	Agriculture Forum members	Interviews Document review	Annual	Project Manager	Evaluation, planning, accountability	Reporting processes not implemented	Full functioning and compliance
1.5 Trained agricultural experts	Level of knowledge and awareness of trained experts	Surveys and telephone interviews of workshop participants	Paper survey after training, and surveys/ interviews 6 months after	After each workshop	Workshop facilitators	Evaluation, planning, accountability	Competency assessment to be completed prior to each workshop	To be set after competency assessment conducted for each workshop

PART III: Logical Framework Approach (LFA); Tool for Project Planning

3. Introduction:

3.4 Basic concepts

The Logical Framework Approach (LFA) is a systematic, analytical process for planning of projects, program as well as sector strategies. The approach helps to analyze an existing situation, including the identification of stakeholders' needs and the definition of related objectives, establish a causal link between inputs, processes, outputs, outcomes and objectives (vertical logic), define the assumptions on which the project logic builds, identify the potential risks for achieving objectives and outcomes, establish a system for monitoring and evaluating project performance, establish a communication and learning process among the stakeholders, clients/beneficiaries, planners, decision makers and implementers.

It is a planning or programming tool that creates a hierarchy of objectives, highlights external factors that may impact the implementation of the project, establishes criteria for M and E, clarifies how planned activities will help to achieve the objectives, and states the implications of carrying out the planned activities in terms of resources, assumptions and risks

In the ideal world this process of program planning should be a participatory one, involving a wide range of stakeholders to reach a consensus on a program of work; this may then be summarized in a logical framework that provides a **summary** of the key elements of a development initiative in a consistent and coherent way

It is best developed in a participatory way with key project stakeholders, although more often it is viewed as a box-filling exercise. Nevertheless, the time and effort it takes to engage local actors provides multiple returns for all major parties concerned. For example,

- improved understanding of the local context,
- better appreciation of local priorities,
- increased local ownership, and
- greater chance of the sustainability of the expected results of the project.

Logframes should address the WHO, WHY, WHAT/WHAT NOT, and WHO and HOW questions related to an intended project. This information is arranged in the Logframe in a four-by-four matrix in such a way as to provide both vertical and horizontal logic about the intended goal, objectives, and indicators, sources of evidence, and risks and assumptions of the proposed intervention.

The far-left vertical column of the LF is typically termed the Project Narrative column. It provides the story of what should occur in the project by identifying the links between the broad *goal* of a project (its expected impact), its intermediate objectives or *purpose* (expected outcomes), and its related activities (expected outputs or immediate objectives). These different levels of objectives are arranged from top to bottom in this column and should be able to be read from top to bottom and from bottom to top one as a check on the logic of what are planned.

The *LogFrame* also identifies how project progress and achievements will be measured, and as such helps to keep the project on-track. This information is placed in the column immediately to the right of the Narrative column and is commonly called *Objectively Verifiable Indicators* (OIVs) or simply *Indicators* column. In the third column from the far left, and to the immediate right of the indicator column, are the sources of data that will be used to measure and track the progress and achievements of a project's interventions in support of its objectives. This column is frequently referred to as the *Means of Verification* (MoV) or *Sources of Verification* (SoV) column. It references internal and external sources of data to the project that will be used to measure expected results.

Finally, in the far right-hand column of the LogFrame matrix the *Assumptions* and *Risks* associated with the proposed project are identified. Assumptions are implicit beliefs about what is expected to occur in the project, while risks are derived from these. Both should be assessed and managed to ensure project success.

Monitoring & Evaluation most often first become involved in Logical Framework when the project begins proper. Their task is typically first to review the LF and recommend how the agreed project proposal can be operationalized, in terms of the monitoring and evaluating of its expected results. This job involves often fine-tuning indicators, developing indicator definitions, and then designing an associated M&E Plan.

3.5 The Process of LF Construction

When to use it? LFA can be used throughout the project management cycle. That is, for identifying needs/problems, preparing project appraisal, implementing, monitoring and evaluating. If the LFA is used to conceptualize projects rather than as a standard mechanism to design projects, it has the potential for widespread and flexible application.

Where to start from? The conventional entry point is the problem analysis (image of the reality) followed by a stakeholder analysis (mapping of interests and potentials of relevant actors), an objective analysis (image of an improved situation in the future) and the selection of the preferred strategy intervention (comparison of the different chains of objectives).

Who should be Involved in the Preparation of the LFA? Project planning and management should always be considered as a team task. This requires giving key stakeholders the opportunity to provide inputs to the LFA process and products. Ideally the LFA is developed in a consultative process, involving the different sectors, implementing partners and preferably the clients /beneficiaries.

3.6 Components of the Logframe

- i. **Goal :** Broad welfare, health, and quality of life, aim towards which the project is expected to contribute
- ii. **Objective:** – the new situation which the project is expected to bring about
- iii. **Outputs:** an immediate result of doing project activities, the results which should be within the control of the project management,
- iv. **Activities:** the things which have to be done by the project to produce the outputs
- v. **Indicators:** Objective measures used to verify progress and achievement of the project
- vi. **Means of Verification:** Methods of collecting & assessing information with regard to the indicators (e.g. progress reports).
- vii. **Risks/Assumptions**
 - Events and conditions outside the control of planners and implementers that may impact the attainment of objectives of the project.

Project Description/ Narrative summary	Indicators	Means Of Verification (MOVs)	Assumptions/ Assumptions
Goal	Indicators	MOVs	
Purpose/Objective	Indicators	MOVs	Assumptions
Component Objectives	Indicators	MOVs	Assumptions
Outputs	Indicators	MOVs	Assumptions
Activities	Milestones specified in activity schedules and scope of services	Management reports on physical and financial progress	Assumptions

3.7 Steps involved in Developing LFA

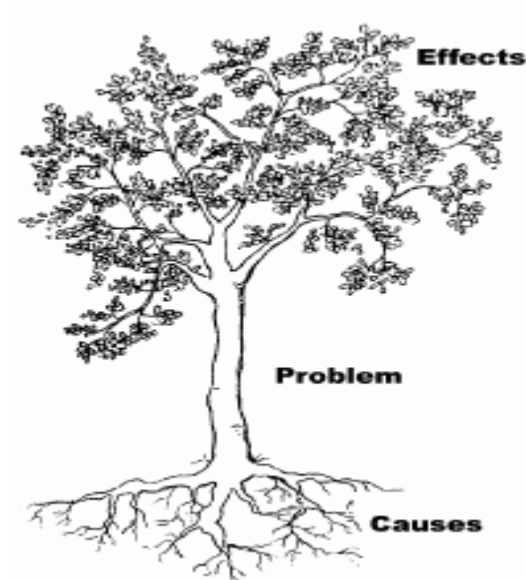
Designing an LFA has in principle two major phases, each step consisting a brief description, illustrated by a simple example.

- i. **Analysis Phase**
 - a. Situation/problem analysis,
 - b. Objective analysis,
 - c. Stakeholder analysis and,
 - d. Strategy analysis.
- ii. **Planning phase**
 - a. Logframe preparation,
 - b. Activity scheduling
 - c. Resource scheduling

3.7.1 Analysis of the situation (the problem)

The main purpose of analyzing the existing situations is to identify the root causes and the cause -effect relationship between problems which should be addressed in project design. A properly planned project addressing the real needs of target groups cannot be achieved without a full and accurate analysis of the existing situation. The existing situation has to be interpreted in the light of the interests and activities of stakeholders concerned who often see it in completely different ways.

There are different ways of analyzing a situation. Brainstorming exercises with stakeholders are best suited for the problem analysis. It is essential to ensure that “root causes” are identified and not just the symptoms of the problem. The problems identified are arranged in a ‘**problem tree**’ by establishing the ‘**cause-effect**’ relationships between the negative aspects of an existing situation.



The roots of the tree, in the lower part of the drawing, literally represent the causes of the main problem. The tree trunk at the centre of the drawing represents the main problem and the tree branches, on the upper side of the drawing, provide a visual representation of the effects of the main problem.

Problem tree is an effective tool for the identification and analysis of the relevant causes of the main problems, which will later form the bases for formulating solutions and objectives for the intended project. A discussion of the causes can help to identify the segments of the community who are most affected and who should be specifically interested in participating in activities aimed at removing the causes of the problem. Each cause of the problem is also a problem in its own right.

The starting point of the problem tree is the identification of the main problem. Identifying problems may seem a simple task but it is not. There are often a number of problems, or causes, resulting in adverse circumstances but not all of them carry the same weight. In most aspects of life there are usually few problems causing a large number of negative actors, while the vast majority of the problems are responsible for only a very small part of the situation. This is known as the 20/80 law.

Through the cause-effect analysis, identify the main problems and their most relevant causes. These are the focal problems, responsible for most of the adverse situation experienced by the community. The main problem can be identified with the community using brainstorming techniques, focus group discussions, ranking or scoring. A similar approach should be used later on for the selection and prioritization of focal problems. All the problems coming out of any of these exercises should be listed and prioritized.

A. Main Steps in Preparing the Problem Tree

i. Identifying and listing main problems

- Write each problem statement in clear language on a card and display this on some suitable wall space.

The first question when starting the problem identification process should always be WHOSE PROBLEM? This is to ensure that the problems to be addressed are really perceived by the community.

ii. Identifying Core Problem

- Through discussions, identify core problem - the one which appears to be linked to most negative statements.
- Write a precise definition of the core problem on a card (if the existing statement requires further clarification).
- Display the card on a wall (or on the floor) so that the whole group can clearly see it.

iii. Identifying cause and effect

- Begin to distribute the negative statement cards according to whether they are “causes” (i.e. leading to the core problem) or “effects” (i.e. resulting from the core problem) until all causes are below the core problem and all effects are above the core problem. At any stage in the exercise, those statements that are considered to be unclear should either be more clearly specified or discarded.
- Choose any negative statement written as a problem on the cards and ask “What leads to that? Then select from the cards the most likely cause of the problem, and place it below the chosen statement.
- If there are two or more causes combining to produce an effect, place them side by side below the resulting effect.
- After you have placed the card or cards for each relationship, pause to review. Then ask the group if there are more causes leading to that problem.
- Similarly you must ask if there are any more effects resulting from that problem.
- If there are multiple effects resulting from a cause, place them side by side and above the cause(s).

iv. Checking the logic

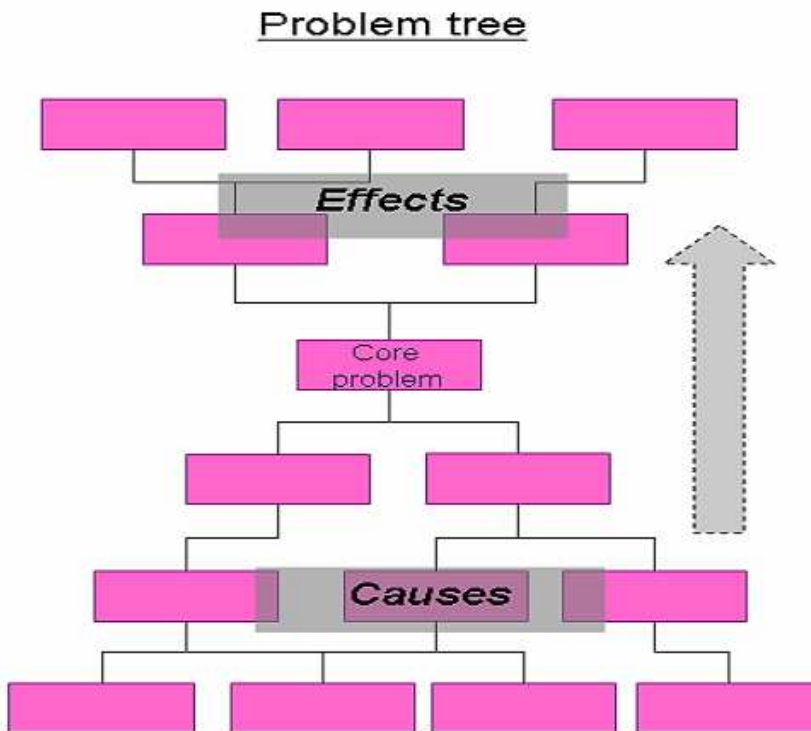
- At each stage you should invite participants to move the cards - that is to suggest or hypothesize other relationships.
- When you have placed all cards, review the structure to ensure that related streams of cause and effect are close to each other on the problem diagram.
- Choose one of the cards at the top line of your Problem Tree, then work back through the diagram according to the guiding question “What leads to, or causes, that?” in order to check the logic or completeness of your cause-effect structure.

v. Drafting the problem tree diagram

- Then draw in vertical links to show cause-effect relationships, and horizontal links to show joint causes and combined effects.
- Copy your diagram onto a sheet of paper and distribute it for further comment and variations within an appropriate time period.

The resulting structure will look like the following.

Fig 2.1: Diagram of Problem Tree (Example)



Discussion: what is the difference between the main problem and Root causes of the problem? Analyze it in terms of your own ongoing project,

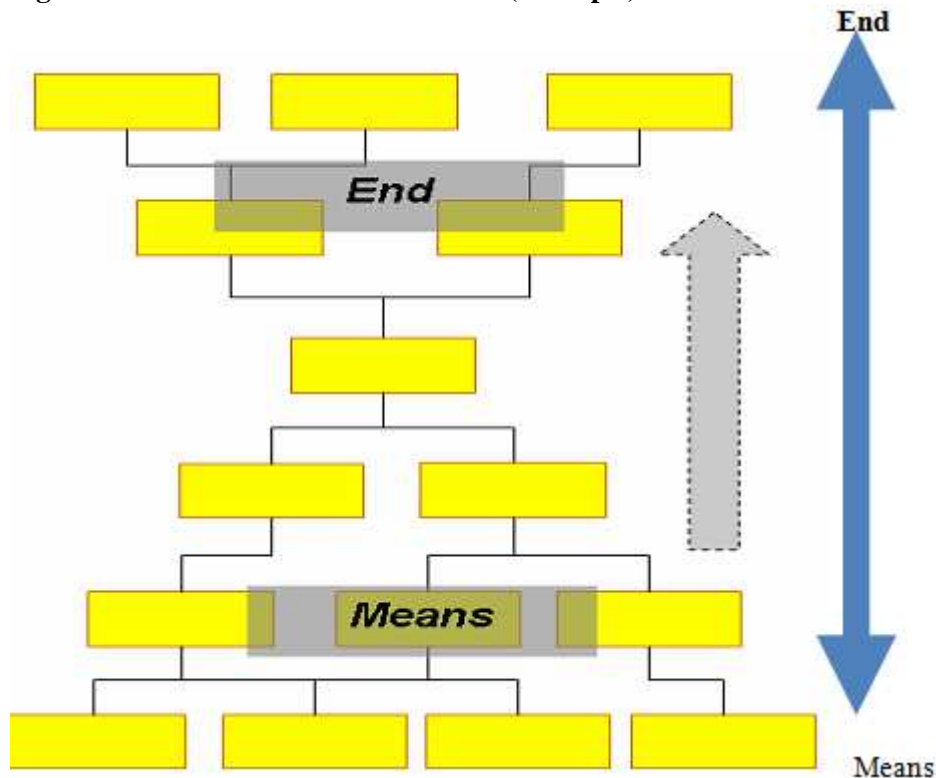
- What is the main problem identified in your project case?
- What are some of the causes of this problem? Indicate them in a hierarchical sequence
- Identify some of the effects prevailing as a result of this main problem

3.7.2 Objective Analysis (Image of an Improved Situation)

The Objective Analysis provides an overview of the desired future situation by translating problems into solutions. While problem analysis presents the negative aspects of an existing situation, analysis of objectives describes future situation that will be achieved by solving the problems identified. During analysis of objectives, potential solutions for a given situation are identified. This involves the reformulation of the negative aspects “problems” identified into positive ones (envisioned for the future) drawing up an “*objectives tree*”. In the objectives tree the former cause–effect relationships between the key problems are turned into means–end relationships. That is, between objectives (what needs to be done to achieve what?).

The negative situations’ of problems diagram are converted into positive achievements’. For example, low agricultural production in the problem tree will be converted into increased agricultural production. These positive statements are presented in a diagram of objectives showing a means-end hierarchy.

Fig 2.2: DIAGRAM OF OBJECTIVES (Example)



This diagram provides a clear overview of the desired future situation. Often such a diagram shows some objectives that cannot be achieved by the project envisaged and so a choice has to be made (see strategy analysis)

Once the negative statements from the problem tree have been re-worded to positive statements, we need to check:

- Are the statements clear and unambiguous?
- Are the links between each statement logical and reasonable? (Will the achievement of one help support the attainment of another that is above it in the hierarchy?)
- Is there a need to add any other positive actions and/or statements? More detail may be required,
- Are the positive actions at one level sufficient to lead to the result above?
- Do the risks to achieving the objectives and also having sustainable outcomes appear to be manageable?

Once these main points have been checked, the proposed objective tree structure can be circulated for further comment and feedback.

3.7.3 Strategy Analysis (Analysis of Alternatives)

The final stage of the analysis phase involves the identification of possible solutions that could form a project strategy and the selection of one or more strategies to be followed by the project. During strategy analysis (or “analysis of alternatives”) a decision is being taken on which objectives will and which objectives won’t be pursued within the frame of the project. The starting point for strategy analysis is the objectives tree. The choice of one or more strategies is made on the basis of criteria which have to be agreed upon and defined with the stakeholders, depending on the specific project context. Possible criteria could be: costs, urgency, resources available, social acceptability, gender aspects, time perspective of benefits, feasibility, development policy, etc. The information gained during stakeholder

analysis (potentials, support, resistance, etc.) and analysis of potentials should also be taken into consideration as a reference for decision taking.

The type of questions that might need to be asked (and answered) could include;

- Should all of the identified problems and/or objectives be tackled or select few?
- What is the combination of interventions that are most likely to bring about the desired results and promote sustainability of benefits?
- What are the likely capital and recurrent cost implications of different possible interventions, and what can be realistically afforded?
- Which strategy will best support participation of both women and men?
- Which strategy will most effectively support institutional strengthening objectives?
- How can negative environmental impacts be best mitigated?

Procedure:

- The team identifies a goal (which may or may not be the conversion of the core problem) or the high level objective to which many other lower level objectives contribute.
- Relate means-end branches in the objective trees are identified. (Draw a pencil circle around the means- end branches. The circle can overlap). These means - end branches constitute the alternative solution.
- The alternatives are marked with numbers or labeled with descriptors
- Summary of Steps in doing Alternative Analysis,
- Delete objectives which are unachievable due to resource limitation,
- Construct several means-end ladders as possible alternative strategies.
- Consider the following factors among others to come up with a possible project strategy
 - The importance for the target group
 - The chance of success
 - The link to government policy
 - The urgency and gravity
 - Institutional capacity
 - Time span
 - Political feasibility
 - Sustainability

However, it is important to emphasize again that activity planning is not a linear process. One does not move mechanically from one step to the next, always in a forward direction, and arrive automatically at the best solution. Planning is an iterative and creative process, and selecting a design option often involves significant jumps in thinking.

3.7.4 Stakeholder Analysis

Having identified the main problems and the cause and effect relationship between them, it is then important to give further consideration to *who* these problems actually impact on most, and what the roles and interests of different stakeholders might be in addressing the problems and reaching solutions.

The main purposes of stakeholder analysis are:

- To better address distributional and social impacts of projects, programs and policies; and
- To identify existing or potential conflicts, and factor appropriate mitigation strategies into activity design.

Stakeholder analysis is thus about asking the questions “Whose problem” and, if a project intervention strategy is proposed, “Who will benefit”.

The main steps in stakeholder analysis include:

- Identifying the principal stakeholders (these can be various levels: eg, local, regional, national);
- Investigating their roles, interests, relative power and capacity to participate;
- Identifying the extent of cooperation or conflict in the relationship between stakeholders; and;
- Interpreting the findings of the analysis and defining how this should be incorporated into project design.

When looking at who the stakeholders are, it is useful to distinguish between the ‘target group’ and the broader group of stakeholders (the target group being one of the principal stakeholders).

Stakeholder analysis matrix – How affected by the problem(s)

Name of Stakeholder (institution, groups, individuals)	stakeholders’ interest/need in the project	Project’s need from the stakeholders	impact of stakeholders on the project	potential strategies for obtaining support or reducing obstacles

It gives a clear picture of the stakeholders if you categorize them as shown below.

Participant categorization Matrix

Direct Participants	interest groups		
	Non targeted actors	targeted actors	targeted non-actors
Indirect /Non participants	Non-targeted beneficiaries	facilitators	by standards

The analysis will give the planning team the clear picture on the following issues;

- who is most affected,
- whose voice is usually listened
- whose voice is not usually heard
- who will be on our side
- who will we invite to help us
- whose views will be given priority to?

Target groups analysis

This analysis helps the planning team to examine and understand the different community groups (children, youths, women, old age and others) that have been affected by the problem and need to be addressed by the project. This could be analyzed by using the following table.

Target group	Main Problems	Main interest /need	Strength	Limitation	dependency with others
children					
Youths					
Women					
Disabilities					
HHs					

3.8 Phase II: Planning Phase

This is the second phase in the development of the Logical Framework. It has got three sub-components,

- a. Logframe preparation,
- b. Activity scheduling
- c. Resource scheduling

3.8.1 Logical Framework Preparation

The logical framework is a way of presenting the substance of the project. The overall objective, the project purpose, outputs, activities and their causal relationships are presented systematically (vertical logic). Establishing a logical framework is possible only after thorough analysis of available information (problems, objectives and opportunities). In addition to the logical relationship between activities, outputs, project purpose and overall objectives, there are external factors (assumptions) that influence the success of the project and they are also included in the logical framework.

The overall objectives, project purpose and outputs are described by the means of indicators and sources of verification necessary to obtain the information by which they are measured. Means and costs are detailed in the bottom row. The logical framework can be prepared and presented by a project preparation workshop. This gives a clearer view of what is under discussion. It is thus a tool for understanding the purpose of the project, the strategy to achieve it and the means deployed. The same logical framework is used as a point of reference during monitoring and evaluation, to analyze the operation's results and impact.

Table 2.1. Shows the structure of the matrix and indicates the general sequence for completing its component parts. The Project description is completed first, then the assumptions, then Indicators and finally the Means of Verification. However, completing the matrix must be approached as an iterative learning process. As one part of the matrix is completed, there is a need to look back at what has been said in previous parts to review and test whether or not the logic still holds. This process will often require the modification of previous descriptions.

Table 2.1. Logframe Matrix structure and sequence for completion

Project Description/ Narrative summary	Indicators	Means Of Verification (MOVs)	Assumptions/
Goal	Indicators	MOVs	
Purpose/Objective	Indicators	MOVs	Assumptions
Component Objectives	Indicators	MOVs	Assumptions
Outputs	Indicators	MOVs	Assumptions
Activities	Milestones specified in activity schedules and scope of services	Management reports on physical and financial progress	Assumptions

The option of whether or not to include both project purpose and component objectives should be left open to the project designers, depending on the scope and complexity of the project. It is also recommended that in most cases the matrix itself should *not* include a listing of the activities required to produce project outputs. The main reason for this is to keep the matrix as a concise summary of *what* the project aims to deliver, rather than specifying too much detail *how* it will be delivered. Where required, activities should be separately detailed in an activity schedule format, using reference numbers to link each group of activities to a specific output.

It is important to know that the Logframe matrix produced during design is essentially a draft. It will need to be reassessed, refined and updated on an ongoing basis once project implementation starts.

3.8.2 Description of the logical framework

First column (four rows): intervention logic

The first column sets out the intervention logic, which is the basic strategy underlying the project, covering all the steps to be taken within the project framework in order to contribute to the overall objective(s) namely:

- The availability of means by which activities can be undertaken (2nd column, 4th row).
- Through these activities, outputs are achieved,
- Outputs to achieve the project purpose
- This project purpose contributes to the overall objective(s).

Project Description provides a narrative summary of what the project intends to achieve and how. It describes the means by which desired ends are to be achieved (the vertical logic).

The overall objective/Goal: Objectives wider than that of the project itself (e.g. sub-sector objectives). Other projects and activities will also contribute to the achievement of these objectives. It refers to the sectoral or national objectives to which the project is designed to contribute (e.g. increased incomes, improved nutritional status, reduced crime). It can also be referred to as describing the expected impact of the project. The Goal is thus a statement of intention.

Project purpose/Objective: the objectives to be reached by implementing the project and which is likely to outlive the project. Sustainable benefits for the target groups are always the aim. It is what the project is expected to achieve in terms of development outcome. Examples might include: increased agricultural production, higher immunization coverage, cleaner water, or improved local management systems and capacity. There should generally be only one purpose statement

Outcome /component Objectives: Where the project or program is relatively large and has a number of components it is useful to give each component an objective statement. These statements should provide a logical link between the outputs of that component and the project purpose.

Outputs refer to the specific results and tangible products (goods and services) produced by undertaking a series of tasks or activities. The combination of these will achieve the project purpose, namely a start to enjoyment of sustainable benefits for the target groups. Examples might include: irrigation systems or water supplies constructed, areas planted/developed, children immunized, buildings or other infrastructure built, policy guidelines produced, and staff trained. Each component should have at least one contributing output, and will often have up to four or five. The delivery of project outputs should be largely under project management's control.

Activities: the things that must be done to achieve the outputs. It refers to the specific tasks undertaken to achieve the required outputs. In the Results Based Management (RBM) context, carrying out or completing a project activity does not constitute a development result. Activities related to the processes involved in generating tangible goods and services or outputs, which in turn contribute to outcomes and impacts.

Inputs refer to the resources required to undertake the activities and produce the outputs (such as personnel, equipment, and materials). Inputs should not, however, be included in the matrix format.

Assumptions: Assumptions refer to conditions which could affect the progress or success of the project, but over which the project manager has no direct control (e.g. price changes, rainfall, land reform policies, non-enforcement of supporting legislation).

The Diagram below should be read as follows;

- Once the preconditions are met, the activities start up,
- Once the activities been carried out and the assumptions at this level are fulfilled, there will be outputs,

- These outputs and fulfillment of assumptions at this level will accomplish the project purpose,
- Once the project purpose and the assumptions at this level are fulfilled, the overall objective will be achieved.

Project Structure	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Goal			
then			
Purpose			
if			and
then			
Outputs			
if			and
then			
Activities			
if			and

IF inputs are provided, THEN activities can be undertaken;
 IF activities are undertaken, THEN outputs will be produced;
 IF outputs are produced, THEN component objectives will be achieved;
 IF component objectives are achieved, THEN the project purpose will be supported;
 IF the project purpose is supported, this should then contribute towards the overall goal.

SECOND COLUMN: Objectively verifiable Indicators

Indicators refer to the information we need to help us determine progress towards meeting project objectives. An indicator should provide, where possible, a clearly defined unit of measurement and a target detailing the quantity, quality and timing of expected results.

Means of Verification (MOVs): Means of verification should clearly specify the expected source of the information we need to collect. We need to consider how the information will be collected (method), who will be responsible and the frequency with which the information should be provided.

The third column: sources of verification

The sources of verification indicate where and in what form information on the achievement of project purpose and outputs can be found (described by the objectively verifiable indicators).

The costs and sources of financing (e.g. government, other donors, like WB etc) are placed in the bottom row.

Fourth column: assumptions

These are external factors that are outside the direct control of the project, but crucial for the achievement of activities, outputs, the project purpose and the overall objectives.

3.8.3 Formulating Performance Indicators

Indicators are signposts of change along the path to development. They describe the way to track intended results and are critical for monitoring and evaluation of the progress of the project. Indicators specify how the achievement of project objectives will be measured and verified. They provide the basis for monitoring

project progress (completion of activities and the delivery of outputs) and evaluating the achievement of outcomes (component objectives and purpose).

There are no absolute principles about what makes a good indicator of physical achievement; however the **SMART** characteristics (Specific, Measurable, Attainable, Relevant, Timely) are useful.

Specific: Key indicators need to be specific and to relate to the conditions the project seeks to change. Cement delivered to a site is not a good indicator of the number of houses constructed. Likewise seedlings distributed from a nursery may not be a good indicator of community woodlots established.

Measurable: Quantifiable indicators are preferred because they are precise, can be aggregated and allow further statistical analysis of the data. However, development process indicators may be difficult to quantify, and qualitative indicators should also be used.

Attainable: The indicator (or information) must be attainable at reasonable cost using an appropriate collection method. Accurate and reliable information collection should be ensured to capture the progress of the indicator.

Relevant: Indicators should be relevant to the management information needs of the people who will use the data.

Timely: An indicator needs to be collected and reported at the right time to influence many management decisions. Information about agricultural based activities, for example, must often come within specific time periods if it is to be used to influence events in the whole cropping and processing cycle. There is also no point choosing indicators that can only tell you at the end of a project whether you succeeded or failed in meeting certain objectives. They may be lessons learned but the information comes too late for project personnel to act on.)

3.8.4 Activity (Implementation and Resource Scheduling)

Once the Logframe matrix is considered sound, the structure can then be used as a framework for preparing implementation, resource and cost schedules. Activities leading to outputs can be specified in more detail and scheduled on a Gantt chart format. A Gantt chart is a tool for planning project activities. The inputs required for each set of activities/output can then be specified and also scheduled over time. And finally, the cost of inputs can then be determined and a project budget estimate and cash flow calculated.

The implementation phase is the period ranging from the signature of the financing agreement to the completion of the project. During this phase, 'activities' are carried out and the 'results' are delivered to the beneficiaries. Monitoring and mid-term evaluations take place during this phase. Often the time lapse between the planning, formulation of the financing proposal and the actual take-off of the project may require a 'start-up' workshop to be held. Such a workshop ensures the alignment of the different stakeholders and enables a detailed work-plan and 'Plan of Operations' to be drawn up. The implementation phase is further characterized by the mobilization of resources in accordance with the 'Plan of Operations' and by the organization of the monitoring system aimed at introducing corrective action.

Name of the Project: -----																		
Duration of the Project: 2010 to 2012																		
Sr. No	Activities	Unit	Target for the project period	Budget	Responsible	Time schedule												
						2010				2011				2012				
						1	2	3	4	1	2	3	4	1	2	3	4	
I	Outcome 1																	
1.1	Activity 1																	
1.1.	sub activity																	
1.1.																		
1.1.																		
1.2	Activity 1.2																	
1.2.	Activity 1.3																	
1.2.																		
II	Outcome 2																	
2.1	Activity																	
2.2	sub activity																	
III	Outcome 3																	
3.1	Activity																	
3.1.1	sub activity																	
3.1.2	sub activity																	

Part IV: Building Results Based Monitoring and Evaluation System

4. Introduction

A results-based M&E system provides crucial information about project implementation performance. It can help decision makers, and other stakeholders answer the fundamental questions of whether they are according to their plan or objectives and goals achieved. If projects targeted to improved performance on their result area, monitoring and evaluation is the means by which improvements or a lack of improvements can be demonstrated.

In building a sound monitoring system needs a series of steps. The step starts from readiness assessment to sustaining a system within the organization. Each of these steps are discussed in detail as follows.

4.1 Conducting Readiness assessment

A readiness assessment is a first and most important assessment in the M&E system development, it leads to make a decision whether we can start to build the M&E system to the project or not. It is a way of determining the capacity and willingness of a project and its partners to construct a results-based M&E system. This assessment addresses such issues as the motivation, roles and responsibilities, organizational capacity, and barriers to getting started.

A readiness assessment also helps to clarify the design parameters for monitoring and evaluation system. In general this assessment helps to answer the following questions.

- What is the need for building an M&E system?
- Who are responsible for building and using an M&E system?
- Roles & responsibilities
- Organizational capacity
- Barriers to getting started

4.1.1 What is the need for building an M&E system

The overall purpose of monitoring and evaluation is the measurement and assessment of performance in order to more effectively manage the outcomes and outputs known as development results. It help an organization to extract, from past and ongoing activities, relevant information that can subsequently be used as the basis for future planning.

Results-based management (RBM) is a management strategy or approach by which an organization ensures that its processes, products and services contribute to the achievement of clearly stated results. It provides a coherent framework for strategic planning and management by improving learning and accountability. It is also a broad management strategy aimed at achieving important changes in the way organization operate, with improving performance and achieving results as the central orientation, by defining realistic expected results, monitoring progress toward the achievement of expected results, integrating lessons learned into management decisions and reporting on performance.

In general, we can say, without monitoring and evaluation, it would be impossible to decide if task performance is going in the right direction, whether progress and success could be claimed, and how future efforts might be improved.

To support this strategic shift toward results, an organization needs a strong and coherent monitoring and evaluation framework that promotes learning and performance measurement.

The project managers or program directors will be asked to actively apply the information gained through monitoring and evaluation to improve strategies, programs and other activities. This effort depends on

results-based management (RBM), a methodology in which performance at the level of development goals and outcomes is systematically measured and improved, and resources are strategically managed and put to the best possible use to enhance the organization's development effectiveness.

In conclusion, the monitoring and evaluation system help us to perform the following main issues.

- Helps establish key goals and outcomes for the project
- Provides crucial information about public sector performance
- Provides a view over time on the status of a project
- Promotes credibility and public confidence by reporting on the results of project
- Helps formulate and justify budget requests
- Identifies potentially promising programs or practices by studying pilots
- Focuses attention on achieving outcomes important to the project and its stakeholders
- Provides timely, frequent information to stakeholders
- Permits managers to identify and take action to correct weaknesses

4.1.2 Who are responsible for building and using M&E system?

The second concern in readiness assessment is who will be the developer and user for the system. By assessing the project or program staff capacity, identify the possible M&E system developer from the project staff or outsource to the outsider. The developer should have ample knowledge about the nature of the project or he should study in depth the project implementation manual. After having the system builder, the second step is to identify the system users or implementers.

List the possible information units for data collection, processing and reporting in different level. Here the issue of budget or means of motivation will be discussed clearly. Does the project have different incentive mechanism for the identified system developer and implementers? If so what is strategy for sustainability after the project? If there is no incentive mechanism what is the way for motivating the acting participant? These questions should be answer well for continuation and sustainability of the M&E system in the organization.

In the case of Tana Beles project, the project logical frame work has been developed by the international consultant with the collaboration of the project M&E team and the actual project implementers i.e. the bureau of Agriculture and its branch. The automated system for data management is developed by M&E team. The system users are the project management and all stakeholders.

4.1.3 Roles and Responsibilities

It is important to identify who is currently responsible for producing data in the organization and in other relevant organizations, and who are the main users of data. Assess the existing roles and responsibilities for all information units and stakeholders. Determine how data will be collected at what frequency by whom and where the data to be processed and distributed to data user.

Such questions and other related questions must be answered before going to the next step.

1. What is the role of the project management body in assessing performance?
2. What is the role of line ministries?
3. Do different stakeholders share information with one another?
4. Who in the project produces, manage and distribute data?
5. Who is responsible for system maintenance?

4.1.4 Assess current capacity of the project

Organizational or project capacity is a key issue for a results-based monitoring and evaluation system. It relates to the skills, resources, and experience the organization has.

Questions to ask when assessing organizational capacity include:

- Technical skills: Who in the organization has the technical skills to design and implement such a system?
- Managerial skills: Who has the skills to manage an M&E system?
- Existing data systems and their quality: What data systems currently exist within the organization, and in what quality level?
- Technology available: What technology is available to support the necessary data system? Include database capacity, availability of data analysis, reporting software, etc. in your assessment.
- Fiscal resources available: What fiscal resources are available to design and implement an M&E system?
- Institutional experience: What experience does the organization have with performance reporting systems?

4.1.5 Barriers/threats/ to getting started

Barriers are obstacles or threats for continuation of the system development. The stronger the barrier to build and implement the M&E system there will less attention for continuation. But there is always a means to confront /tackle/ these barriers through different mechanisms such as providing capacity building training and motivation strategies like incentives for staff.

As with any organizational change intervention, it is important to consider what could potentially stand in the way of effective implementation. Make serious analysis to check any of these immediate barriers now exist to getting started in building an M&E system?

- Lack of fiscal resources
- Lack of motivation in the project staff
- Lack of expertise & knowledge
- Lack of strategy
- Lack of prior experience
- How do we confront these barriers

At the end of the readiness assessment, the project management confronts the question of whether to move ahead with constructing a results-based M & E system or not. If the decision is to move forward, we are ready to work on step Two.

Some sample of barriers for M&E development in Tana Beles project.

:

1. Less motivation or commitment both from kebele and woreda level in collecting timely data.
2. Low capacity at different level
3. There was no counterpart for system development
4. There was no standard reporting format in the previous time
5. Problem in data quality /exaggerated figure, missing data/
6. High staff turnover both at kebele and woreda level
7. Lengthy procurement procedure eg. GPS, CDMA, Web server etc...
8. Reluctance on the use of GPS for data collection

The major task done to confront the above problems was:

1. Continuous follow up and capacity building both at kebele and woreda level in area of data collection, processing and quality issues.
2. On job training and assessment on the use M&E/MIS system for woreda experts.
3. Motivating kebele experts on the use of GPS for data collection.
4. To assign devoted project focal person at woreda level to look after the quality of the data, to coordinate kebele experts for timely data collection and to build capacity at kebele level.

4.2 Agreeing on Outcomes to Monitor and Evaluate

To agree on the required outcome, you can follow different mechanisms; these include brainstorming sessions, interviews, focus groups, stakeholder workshop and surveys. When using these methods, try to keep the focus on existing development partners to build uniformly agreed outcomes.

Outcomes should be **SMART** /Specific, Measurable, Appropriate, Realistic and Time-based/. If the expected outcomes of the intervention are not clearly stated, outcome monitoring cannot assess. I.e. interventions with unclear outcomes should not be selected for evaluation. SMART outcome specify the kind and amount of change you expect to achieve for a specific objectives within a given time frame for each intervention.

- Outcomes should be *specific*. Explicitly state what you want to happen, where and to whom as a result of your intervention.
- Outcomes should be *measurable*. This means you must identify the current, or baseline, value and the level or amount of change that is expected. Your funders will insist on measurements. Measurable objectives will guide evaluation design, allowing you to track progress, document success or know where interventions aren't progressing as planned.
- Outcomes should be *achievable* and realistic. Especially when you aim to change chronic, addictive behaviors (e.g., overeating, smoking), you may have to settle for small steps in a long process. If you overreach, your target audience may turn away completely. Besides, your realism reflects on your credibility. You cannot save the world with any intervention. But you can make the world a better place in a very concrete, albeit incremental, way.
- Outcomes must be *relevant*, i.e., logically related to your overall goals. Check with your target audience to ensure that what you hope to achieve in the short run will get you where you want to be in the long run.
- Outcomes should be *time-specific*. Your interventions are limited in time and space. While you always hope and plan for permanent change, you must be realistic about when to measure the effect that you can achieve. Your funders, partners, and policymakers will want a report within a realistic time frame. Identify the end point of your intervention and the points along the way at which you'll measure progress. If you have the resources, you could learn a lot about the permanency of your behavior change and the durability of your intervention by measuring change at a distant point in the future.

In evaluating the outcome, it is important to generate an interest in assessing the outcomes and impacts the project /program is trying to achieve, rather than simply focusing on implementation issues (inputs, activities, and outputs). After all, outcomes are what tell you whether or not the specific intended impact has been realized. Strategic outcomes and impacts focus and drive the resource allocation and activities of the project and its development partners.

Why an Emphasis is given for Outcomes in result based monitoring?

- Makes the case that program is effective
- Focus on activities toward project goals i.e. do not waste resources on activities not linked to outcomes

- Makes explicit the intended objectives of the project/program.
- Help to set realistic goals for the project to be accountable
- Specify where we are going before we get start moving
- Outcomes are the results project/program hope to achieve.
- Clearly setting outcomes is a key to design and build results-based M & E Systems.

Outcomes are usually not directly measured – only reported on. To monitor outcomes, it must be translated to a set of key indicators.

Table 4.2.1 Tana Beles project agreed outcomes

No	Outcome	Outcome Indicator	Base line	Target	status
1	Outcome 1: Enhanced sustainability of future agricultural development due to mitigation of land degradation and improved soil fertility and stabilised landscapes with greater fuelwood production from increased forestry and agro-forestry resources				
2	Outcome 2: Increased crop productivity, production and marketing of agricultural produce and improved pasture management, livestock productivity and veterinary services				
3	Outcome 3: Increased off-farm and agricultural incomes				
4	Outcome 4: Enhanced human and capital resources from improved access, water supply and economic / social infrastructure.				

4.3 Selecting Key Indicators to Monitor Outcomes

Outcome indicators are an 'indication' - they provide a snapshot of meaning that people can easily absorb. Outcome indicators are designed to collect information and provide results to answer the broad question of whether the issue of concern is achieving the desired results. In other words, it measures the broader results for which a project /program is responsible to achieve.

Choosing the most appropriate indicators can be difficult. Development of a successful accountability system requires that several stakeholders be involved in identifying indicators, including those who will collect the data, those who will use the data, and those who have the technical expertise to understand the strengths and limitations of specific measures.

Sometimes it is possible to minimize costs by using predesigned indicators. However, it is important to consider how relevant they are to the specific project context. Some may need to be adapted to fit, or supplemented with others that are more locally relevant. When selecting indicators, be sure to select more than one for each outcome /but it is better to use minimum number/

Indicator development is a core activity in building an M&E system and drives all subsequent data collection, analysis, and reporting. The methodological issues in creating credible and appropriate indicators are not to be underestimated. Good indicators should be CREAM:

- **Clear** (precise and unambiguous)
- **Relevant** (appropriate to the subject at hand)
- **Economic** (available at reasonable cost)
- **Adequate** (able to provide sufficient basis to assess performance)
- **Monitorable** (agreeable to independent validation).

There are some questions that may guide the selection of indicators. These are:

Does this indicator enable one to know about the expected result? Indicators should provide the most direct evidence of the result they are measuring. Proxy measures may sometimes be necessary due to data collection or time constraints. When using proxy measures, planners must acknowledge that they will not always provide the best evidence of conditions or results.

Is the indicator defined in the same way over time? /is it consistence? The definition of an indicator must therefore remain consistent each time it is measured. And also care must be taken to use the same measurement instrument or data collection protocol to ensure consistent data collection.

Will data be available for an indicator? Data on indicators must be collected frequently enough to be useful to decision-makers. Data on outcomes are often only available on an annual basis; those measuring outputs, processes, and inputs are typically available more frequently.

Will this indicator provide sufficient information about a result? Indicators which are publicly reported must have high credibility. They must provide information that will be both easily understood and accepted by important stakeholders. However, indicators that are highly technical or which require a lot of explanation may be necessary for those more intimately involved in programs.

Is the indicator quantitative? Numeric indicators often provide the most useful and understandable information to decision-makers. In some cases, however, qualitative information may be necessary to understand the measured phenomenon. Especially when you are using an automated data management system, numeric indicators are very suitable than the qualitative.

Table 4.3.1 Tana Beles Project Outcome indicator

No	Outcome	Outcome Indicator	Base line	Target	status
1	Outcome 1: Enhanced sustainability of future agricultural development due to mitigation of land degradation and improved soil fertility and stabilised landscapes with greater fuelwood production from increased forestry and agroforestry resources	Improved SWC practices adopted by 30,000 households in targeted kebeles by 2013			
		Dry season baseflow increased at mini- (1-10 ha) and micro-watershed (1-10 km ²) levels			
		10% households adopting renewable energy innovations by 2013			
		All community forests within the targeted watersheds are conserved in their entirety by 2013			
		Approp. modern and sust. forestry/agroforestry adopted by 75% of communities in watersheds			
2	Outcome 2: Increased crop productivity, production and marketing of agricultural produce and improved pasture management, livestock productivity and veterinary services	Increased production of fruits on 400 SSI sites covering a total of 1,500 ha and increases			
		Increased production of vegetables on 400 SSI sites of a total of 1,500 ha and increases			
		Income from crop production increased by 20% between 2008 and 2013			
		All farmers in targeted watersheds have access to effective agric. extension services by 2013			

		2100 farmers /a trained in FTC's in improved agricult. techniques and technologies by 2013			
		Incidence of preventable livestock diseases in the targeted watersheds reduced by 85% by 2013			
		Value of livestock & livestock products sales increased by 20% in targeted watersheds by 2013			
3	Outcome 3: Increased off-farm and agricultural incomes	20% households adopting more efficient and appropriate processing technologies by 2013			
		A group, or No of individual fuel efficient stove production enterprises established by 2013			
		No. households engaged in off-farm enterprises in targeted watersheds increased by 35% by 2013			
4	Outcome 4: Enhanced human and capital resources from improved access, water supply and economic / social infrastructure.	Reduced transport costs for markets and inputs in targeted kebeles by 2013			
		Improved access to markets, inputs and social services in targeted kebeles by 2013			
		Improved access to educational and health services / facilities in targeted kebeles by 2013			
		Access to potable water in targeted kebeles increased from 41% in 2008 to 80% by 2013			

4.4 Identifying specific activities for each Outputs /outcome indicators/

Activities should clearly state what is being measured in terms that are meaningful to the intended output /outcome indicator.

When define relevant activities, it is necessary to give a serious attention in the following issues:

- Refer to the outcome indicators that you defined in order to identify the activities.
- To identify the appropriate activities, identify the activities that are most closely related to the chosen outcome indicator(s) and most critical to achieving the intended target
- Which activities must always be performed correctly
- Which activities are most vulnerable to deterioration over time; and
- Which activities are performed most frequently?
- Define standard measurement units for each activity

During evaluation asking whether a change in the underlying activity is likely to create a change in the outcome. If not, the activity may be too far from the outcome.

Table 4.4.1 Sample of Tana beles activity list for some output

1.1. Soil and water conservation measures undertaken on cultivated lands	ha
Fanya-juu	ha
Stone bunds	ha
Soil bunds	ha
Stone faced soil bund	ha
Deep trenches	ha
Water-ways	km
Cut-off drains	km
1.2. Undertake Gully treatment or rehabilitation	ha

Gabion checkdam constructed	M3
Loose stone checkdam constructed	M3
Arc-weir checkdam constructed	M3
Brush-wood or live checkdam	m
Retention wall	km
Planting of seedlings in gully	no
Gully reshaping, and levelling	M ²
SS dams/bunds	M ³

4.5 Conducting survey for baseline Data for Indicators

A baseline is information qualitative or quantitative about the chosen indicators at the beginning of or immediately prior to the intervention. In fact, one consideration when choosing indicators is the availability of baseline data, which will allow indicators to be tracked relative to that baseline.

The measurement of progress or a lack of it towards outcomes begins with the description and measurement of initial conditions being addressed by the outcomes. Collecting baseline data essentially means taking the first measurements of the indicators to find out, “Where are we today?”

In relation to the program cycle, a baseline study should be conducted prior to the onset of operation activities in order to establish the pre-operation exposure conditions of the outcome and impact level indicators. However, it is not uncommon for baseline studies to be conducted after activities have already begun. But delays in conducting baseline studies, especially when an operation’s activities have already influenced the outcome and impact performance indicators, are costly and likely to lead to an underestimation of the operation’s overall impact.

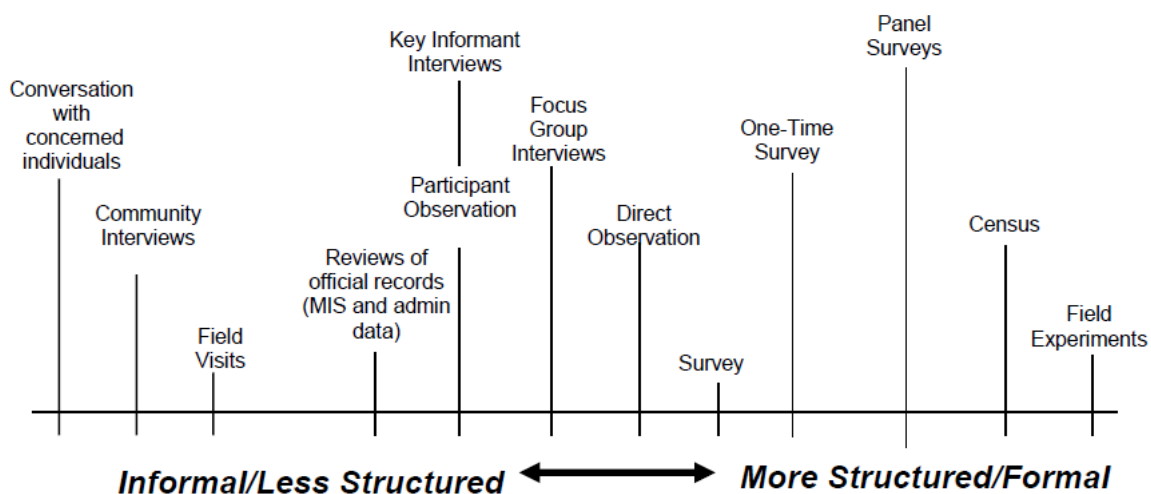
When compared with the condition of the same indicators at some point during implementation, mid-term evaluation and post-operation implementation /final evaluation/, the baseline study forms the basis for a before and after assessment or a change over time assessment. Without baseline data to establish pre-operation conditions for outcome and impact indicators it is difficult to establish whether change at the outcome level has in fact occurred.

Basically, there are two types of data sources for baseline data collection, these are Primary and Secondary data. Primary data is data that is collected through the use of surveys, meetings, focus group discussions, interviews or other methods that involve direct contact with the respondents. Whereas, secondary data is an existing data that has been collected by the project or by others for another purpose. Data collected by other organizations such as by the government, by the research organizations are exceptionally good sources of secondary data which could not be replicated by primary data collection without prohibitive expense.

The use of secondary data represents tremendous cost and time savings to the project, and every effort should be made to establish what secondary data exist and to assess whether or not they may be used for the baseline operations. Primary data is often collected unnecessarily and at great expense simply because the baseline surveyor had not been aware that the data were already available. It is critical to invest the initial time and resources to investigate what data exist, what data collection exercises are planned for the future, and how relevant the existing data are for the baseline operations.

Clear documentation of the methods to be used to collect primary and secondary data must be developed during the planning stage of an operation. As data is collected, any variations from the planned data collection methods must also be documented. This ensures that data is collected in the same way at different points in time and by different people. This is critical for ensuring that the data is comparable, and improves the accuracy of assessing the changes over time associated with the project operation.

. Fig 4.5.1 data source for baseline data



Once the sources is chosen, then decide who is going to collect the data, and how. Here you will need to develop data collection instruments such as forms for gathering information from files or records, interview protocols, surveys, and observational instruments. As you develop these collection instruments, keep in mind the practical issues:

- Are quality data currently available (or easily accessible)?
- Can data be procured on a regular and timely basis, to allow tracking of progress?
- Is the planned primary data collection feasible and cost effective?

Table 4.5.1 baseline data for the identified outcome indicators

No	Outcome	Outcome Indicator	Base line	Target	status
1	Outcome 1: Enhanced sustainability of future agricultural development due to mitigation of land degradation and improved soil fertility and stabilised landscapes with greater fuelwood production from increased forestry and agroforestry resources	Improved SWC practices adopted by 30,000 households in targeted kebeles by 2013	85.3 %		
		Dry season baseflow increased at mini- (1-10 ha) and micro-watershed (1-10 km ²) levels	0.04		
		10% households adopting renewable energy innovations by 2013	0		
		All community forests within the targeted watersheds are conserved in their entirety by 2013	4500		
		Approp. modern and sust. forestry/agroforestry adopted by 75% of communities in watersheds	0		
2	Outcome 2: Increased crop productivity, production and marketing of agricultural produce and improved pasture management, livestock productivity and veterinary services	Increased production of fruits on 400 SSI sites covering a total of 1,500 ha and increases	0		
		Increased production of vegetables on 400 SSI sites of a total of 1,500 ha and increases	56		
		Income from crop production increased by 20% between 2008 and 2013	1166		
		All farmers in targeted watersheds have access to effective agric. extension services by 2013	46.3		
		Livestock extension service improved in all targeted kebeles by 2013	51		

		Incidence of preventable livestock diseases in the targeted watersheds reduced by 85% by 2013	36%		
		Value of livestock & livestock products sales increased by 20% in targeted watersheds by 2013	582		
3	Outcome 3: Increased off-farm and agricultural incomes	A group, or No of individual fuel efficient stove production enterprises established by 2013	0		
		No. households engaged in off-farm enterprises in targeted watersheds increased by 35% by 2013	27%		
4	Outcome 4: Enhanced human and capital resources from improved access, water supply and economic / social infrastructure.	Improved access to markets, inputs and social services in targeted kebeles by 2013	1:41		
		Improved access to educational and health services / facilities in targeted kebeles by 2013	1:34		
		Access to potable water in targeted kebeles increased from 41% in 2008 to 80% by 2013	41%		

4.6 Setting Realistic Targets for each indicator

Once project outcomes and associated indicators have been developed, project management and M & E need to identify annual or end of project *targets* that are based on the expected final results of the project.

A target is a commitment to achieve a specific and better quality or level of service over a specified time frame. Targets help to define an agreed direction – they show more precisely where a project is trying to get to. It can then be made clear to staff members and the stakeholders what is expected. Focus attention and resources on achieving the target and give priority and motivate staff to create a sense of ownership.

Effective targets need to be realistic but challenging. While the whole point of targets is that they are effective because people try and achieve them, not meeting a target is not necessarily a sign of failure may be it will be a sign of unrealistic target was set or less attention was given for this particular target. If targets are not met, there is still an opportunity to focus on what has been achieved, to make a rich assessment of that and share the learning where possible.

There are a series of strategies to set realistic target some of these are:

1. *Know what outcome you are trying to achieve.*

- Be clear in articulating the outcome that you are trying to achieve and be clear about the purpose of the target and the type of target you need.
- Consider any constraints for your performance.
- Be clear about the time period for achieving the objective.

2. *Clearly define where you are now and where you want to get to.*

- Review trends and history./ e.g., average of last three years, last year, average trend/
- Consider variations in performance, e.g. peaks, troughs and seasonal factors
- Project forward taking account of known changes ahead.
- Use experience from different stakeholders to help build up an idea of what is feasible.

3. *Identify measurements*

- Check if there are indicators already in existence, to specify the measurement unit of the target
- Consider what type of target is most appropriate (e.g. number or percentage, etc..). There are not hard and fast rules for which is most appropriate but it can be an indication to start from the size of the target. If the target is too small it is better to use number than percentage and vice versa.

4. *Set targets by discussing with project staff, implementers and stakeholders.*

- Involve those who will have to deliver the target and who will be held to account right from the beginning. You will need their knowledge, experience, ownership and understanding.
- Be clear how they will be held collectively or individually accountable, and who will drive achievement of the target in practice.
- Consider, and ideally plot, the path by which you will reach it.

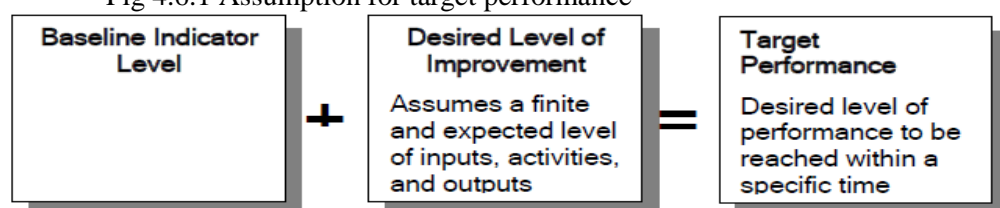
5. *Action plan to achieve the target.*

- Identify what action plan would you need to be taken to achieve the target in the given time period.
- Give responsibility, accountabilities, costs and timescales for the prepared action plan. Give serious attention for the following issues: the levels of funding and human resources over the timeframe for the target, the amount of outside resources expected to supplement the programs and organizational experience in delivering projects and programs in this substantive area.

6. *Final checks*

- Ensure project staff, implementers and stakeholders understand and are happy with the targets.
- Check that the target is specific, measurable, achievable, relevant and time bound. /SMART/
- Ensure that an action plan is in place to deliver the agreed target
- Do a risk assessment: plan preventive action for any threat.
- Are the targets fair, legal, honest and ethical?
- Ensure that performance is monitored on a regular basis.

Fig 4.6.1 Assumption for target performance



Be sure to set only one target for each indicator. If the indicator has never been used before, be cautious about setting a specific target set a range instead. Targets can be set for the intermediate or long term; the important thing is to be realistic about how long it will take to achieve the target and whether it is achievable or not therefore, be realistic when setting targets.

Table 4.6.1 Tana Beles project targets

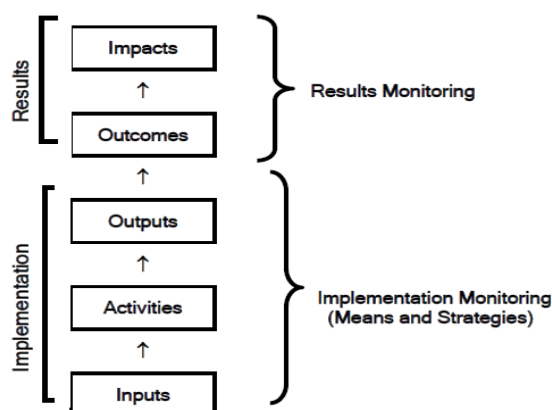
No	Outcome	Outcome Indicator	Baseline	Target	status
1	Outcome 1: Enhanced sustainability of future agricultural development due to mitigation of land degradation and improved soil fertility and stabilised landscapes with greater fuelwood production from increased forestry and agroforestry resources	Improved SWC practices adopted by 30,000 households in targeted kebeles by 2013		100%	
		Dry season baseflow increased at mini- (1-10 ha) and micro-watershed (1-10 km ²) levels			
		10% households adopting renewable energy innovations by 2013		10%	
		All community forests within the targeted watersheds are conserved in their entirety by 2013		5000	
		Approp. modern and sust. forestry/agroforestry adopted by 75% of communities in watersheds		75%	
2	Outcome 2: Increased crop	Increased production of fruits on 400 SSI sites		150	

	productivity, production and marketing of agricultural produce and improved pasture management, livestock productivity and veterinary services	covering a total of 1,500 ha and increases		0 ha	
		Increased production of vegetables on 400 SSI sites of a total of 1,500 ha and increases		150 0 ha	
		Income from crop production increased by 20% between 2008 and 2013		20%	
		All farmers in targeted watersheds have access to effective agric. extension services by 2013		100 %	
		Livestock extension service improved in all targeted kebeles by 2013		100 %	
		Incidence of preventable livestock diseases in the targeted watersheds reduced by 85% by 2013		5.4%	
		Value of livestock & livestock products sales increased by 20% in targeted watersheds by 2013		20%	
3	Outcome 3: Increased off-farm and agricultural incomes	A group, or No of individual fuel efficient stove production enterprises established by 2013			
		No. households engaged in off-farm enterprises in targeted watersheds increased by 35% by 2013		35%	
4	Outcome 4: Enhanced human and capital resources from improved access, water supply and economic / social infrastructure.	Improved access to markets, inputs and social services in targeted kebeles by 2013			
		Improved access to educational and health services / facilities in targeted kebeles by 2013			
		Access to potable water in targeted kebeles increased from 41% in 2008 to 80% by 2013		80%	

4.7 MIS Based Monitoring & Evaluation

A results-based monitoring system tracks both implementation /inputs, activities, outputs/ and results /outcomes and impacts/. The following figure shows the result based monitoring model and its chain.

Fig 4.7.1 Monitoring chain



A strong M&E system must be supported by some types of management tools such as MIS. By building an effective MIS you can consider the following administrative and institutional tasks such as:

- Establishing data collection, analysis, and reporting guidelines
- Assign responsibilities for implementers and development partner /stakeholders.
- Establishing means of quality control
- Establishing timelines and costs
- Prepare guidelines for information dissemination and transparency.

What is management information system: MIS is a system or a tool that helps you to provide consistence and timely information about your implementation. It helps to monitor implementation and also to link to results. MIS is an important input at every level in the organization for decision making, planning, implementing, monitoring and controlling.

The MIS system utilizes computers, manual procedures and a database. Now a day internet and other application development environment facilitate the use of MIS in web based environment, i.e. people can enter, update and view their implementation from remote.

Building MIS needs a series of logical steps and assumptions. These are:

1. *Establish management information needs /why we need the information system? Briefly elaborate the need of MIS system for your project. In general the need of MIS is to capture data about activity and output achievement to monitor implementation and to link the implementation to outcome which is a result.*
2. *List the possible information units for data collection and processing in different level.*
 - Decide your planning and data collection procedure.
 - Determine your source of data.
 - Analyze the different actors in planning and data collection process. Then
 - Identify different information units within this process.

In case of Tana Beles project, four information units are identified for data collection, management and process. These are:

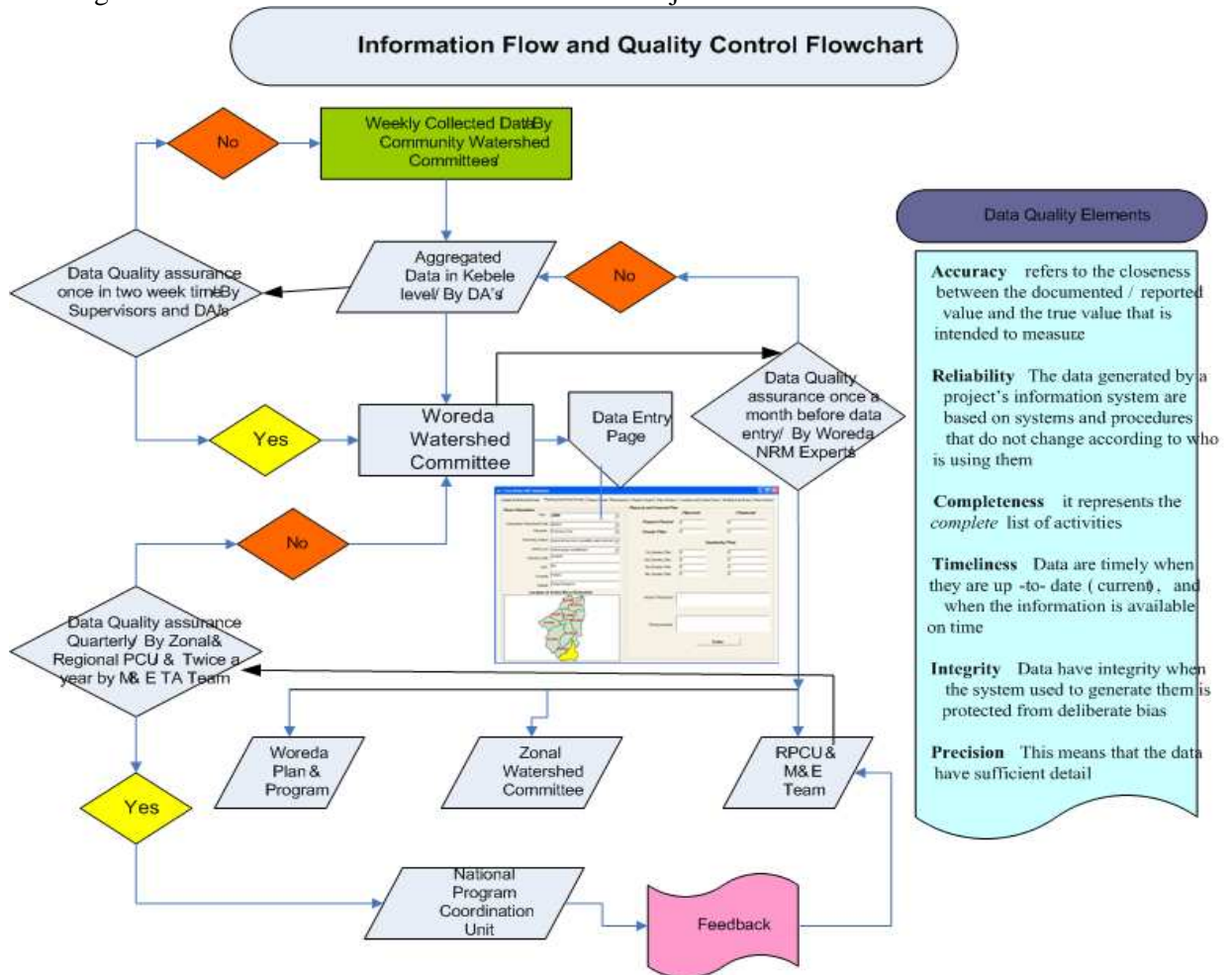
1. Community Watershed Team
 2. DA or Community Facilitator
 3. Woreda NRM /Woreda Watershed Team/
 4. RPCU
3. *Positions and responsibility will be allocated for the identified information units./*
 - Decide who will collect data in what time interval,
 - By whom and where the data to be managed and disseminated,
 - Who will be after data quality at different stage / The data quality issue at this stage should be discussed seriously/
 - Show the flow and quality assurance method in flow chart.

The experience in Tana Beles is:

- A weekly data will be collected by watershed community team member
- DA/ Community facilitator/ aggregate the weekly data into monthly and submit to the woreda agricultural office
- The woreda expert enter the monthly data into the system and copy the database to RPCU by CD /previous practice/. Now we are using an email and online data transfer using CDMA.

- RPCU /TA/ update the regional database by import and export method in the stand alone application and in the web server.

Fig 4.7.2 Information flow chart for Tana Beles Project



4. Identify stakeholders and discuss the type and importance of this information for them. Identify your development partners by doing stakeholder analysis and define what type of data is relevant for them and also discuss the importance of the information for your partners.

In Tana Beles project we summarized this step by defining our stakeholders and by attaching the importance of the information for them. The process is summarized as follows:

- String committees at different level /National, Regional and Woreda/ and Bureau of Water Development: these committees are coordinators and decision makers for the project. Therefore all information related to the project implementation is important for these groups for decision making.
 - Agriculture office at woreda and zonal level
 - Bureau of Agriculture
 - The World Bank
 - MFA etc.
- These are implementers. They need the data for planning and to monitoring their
- These are the source of the money and decision makers. These stakeholders especially need information related to results not the routine activity

5. Develop a general system description for MIS design. /identify software requirement, database development etc.../

- Decide about the type of access for different information units or stakeholders. Apply password for data manipulation /data entry, management etc../ And uniform or no password for report generation.
 - Decide the type of database at the back ends. Software selection depends on the size, security level and budget you have. In Tana Beles MS Access is used for standalone and MySQL for web application.
 - Decide software for application development. There are different programming software for application development on the shelf. The selection depends on the budget, developer's skill and sustainability. For Tana Beles Microsoft visual basic 6 for interface development, MapObject 2 to embedded GIS application and Crystal report designer 8 for report format development is used for standalone system. Whereas, Dreamweaver, Apache web server, PHP application server, MySQL database which is an open source are used for web based monitoring application.
 - Design Database and identify the basic data needed for the database /to be store/. Database design is a challenging step the development of MIS. The developer should follows the design steps such as identifying user requirement, preparing conceptual, logical and physical model. Then identify the data for the database, in most cases these are the planning and achievement data for each activity.. In Tana Beles project, based on the identified indicators 173 possible activities are listed. All the necessary data such as planning, achievement, required budget, community contribution in labor and in kind for each activity in community watershed level is stored in the database.
 - Design the planning and achievement report formats. There are different applications /software that uses for designing reporting formats one of the mainly used is Crystal report designer for standalone and a dynamic record set for web-based application. In designing the reporting format first asses the existing formats in the organization and try to customize and standardize it.
6. *Testing the system:* Before implementing the system there should be a serious checkup from the designer's side by putting some data in to the system.
 7. *Launching the management information system and conduct training:* After a number of checkups you will reach in the required level. Then conduct a training session for system users. If all system users are familiar to the developed system, it is time to launch the system and start to use it.
 8. *Monitoring actual implementation of the MIS and its functioning from time to time:* after launching the system there must be a continuous on job assessment and system upgrading by incorporating different comments from system users and stakeholders. A continuous training programs must be available for the users because of system upgrade, staff turnover and sometimes to refresh.

4.8 Sustaining the M&E System within the Organization.

As we have seen, building M&E system is a time taking but essential task for the project. Therefore, ensuring its sustainability for long period of time even after the project is a serious business.

To sustain the system, there should be a demand for the system, clear roles and responsibilities with accountability would be given to the development partner, the information collected through the system must reflect the reality /trustworthy/and capacity must be build to the partner to run and maintain the system.

One way of building demand for M&E information is to build a formal structure that requires regular reporting of performance results. Another strategy is by publicizing the availability of the information you can generate demand on government bodies, other development partner, donors, and communities.

Clear responsibilities and accountability should be set for data collection, analyzing, and reporting. Also there must be a clear guidance on who is responsible for which components of the system and build this into their performance reviews /to their job description/.

To be sustainable, the system must able to produce correct and quality information. If the data is not the reflection of the real world it misleads decision makers. And all the information should be transparent, and subject to independent verification.

Sound technical skills in primary and secondary data collection method, in data analysis, managerial skills in strategic goal setting and organization development, the availability of financial resources, and institutional experience with monitoring and evaluation should be the most integral part of organizational capacity to sustain the M&E system.

Part V: Participatory Integrated Watershed Work Plan and Reports Preparation

What is watershed management and what is its importance for the community? Watershed management is the integrated use of land, vegetation, water and other socio economic infrastructures in a geographically discrete drainage area for the benefit of the community.

Negative or positive changes in watersheds have resulted from natural and manmade soil erosion, changes in farming systems, overgrazing, deforestation, and pollution. Due to these factors, degradation of watersheds has brought the long-term reduction of the quantity and quality of land and water resources. Therefore proper management of the resource in the watershed, benefits the community with in that watershed and also the downstream communities. That is why now a day, these problems has prompted investment in watershed management in many developing countries.

Through proper watershed management, the management of land and water, and their interactions can improve and also there can be an increase in the intensity and productivity of resource use in the upland area. The final objective of proper watershed management is reducing poverty, improving livelihoods, improve environmental services and reducing negative externalities for downstream areas.

5.1 participatory watershed plan preparation based on Tana Beles Project Experience.

The watershed approach for planning follows series iterative steps to characterize existing conditions, identify and prioritize problems, define objectives, develop strategies, and implement and adapt selected actions as necessary. In other word, A watershed plan is a strategy that provides assessment and management information for a geographically-defined watershed, including the analyses, actions, participants, and resources for developing and implementing the plan. The outcomes of this process are documented in a watershed plan.

The main objective of participatory watershed management plan is that it results into an improved livelihood and social life style in harmony with nature based on the community vision. All watershed plans will vary, as different communities will emphasize issues, goals, and management strategies that are unique to their particular watersheds.

Watershed plan preparation in Tana Beles project follow the national watershed management guideline. In the guideline there are eight steps. Each of these steps are discussed briefly.

1. Woreda/District /Office/ level preparation

1.1 Forming woreda watershed team:

For a watershed plan to be effective, involvement of stakeholders should be encouraged early, and should continue throughout the process. Participants to consider for involvement include:

- Responsible for the watershed plan's implementation; those who will be affected by the watershed plan's implementation;
- Different sectors or existing programs or plans that integrated into the watershed plan
- Those who can provide technical and financial assistance in the development and implementation of the watershed plan.

As we have seen from the meaning of watershed development, it is a multi discipline intervention. Therefore the team should contain different disciplines and experiences. According to the national watershed development guideline, the composition of the *wereda* core team should contain the following 10 field of studies at the maximum level and the first four at minimum level.

Soil Conservation
Agronomist /plant management, IPM/
Water harvesting /Irrigation/
Livestock
Forestry/Agro-forestry
Home Agent
Land Use and Administration
Economist/Socio-economist/Agro-economist/
Cooperative/Marketing and Inputs/
Rural Road Construction

The above listed experts can be pulled out from different sector with the woreda but the main responsibility for the plan preparation and group formation is in the office of agriculture/ specially the Natural Resource Process/

1.2 Delineate community and critical watershed and prepare all formats for planning: watershed boundary must be delineated from 1:50,000 topo map and all the necessary format and designed questions for interview, for focus group discussion should be prepared. In addition to this one day overview meeting at woreda level is necessary to discuss about the objective of the project and also about the task.

1.3 Forming kebele Watershed team: kebele is the lowest administrative structure in the country and it has a number of community watersheds under it. The kebele watershed plays a coordination role between different community watersheds within the kebele.

According to the guideline composition of the KWT will include:

- Kebele Chairman
- Kebele Rural Development Head
- Three DAs
- One male representative/leader of each community
- One female representative/leader of each community
- One respected and influential person from each community
- Representative of the youth.

2. Start at the community level

2.1 Visit each community watershed: based on the delineated boundary the woreda and kebele watershed team will identify the boundary on the ground and identify communities within this specific watershed.

2.2 Awareness creation and forming community watershed team: by calling a general assembly meeting the woreda and kebele team clarify the purpose of participatory plan preparation, about the project objectives and about the role of different teams.

After a brief discussion on the objectives, ask the community about the interactions between their community and others located in the upstream, downstream and adjacent to their community and try to overview the social and wealth status of the community. Next ask the general assembly to delegate 10 - 12 community watershed team members to represent the community and to prepare the community plan.

The community watershed team should represent all the community within that specific watershed. Therefore, the team member should be from different social groups such as women, poor, rich, youth, elders etc. According to the national guideline the community watershed team composed of:

- The Community leader (who will represent the community at kebele level)
- Four male-headed households representing different social groups (including vulnerable) and living in different parts of the community

- Four female-headed households representing different social groups (including vulnerable) and living in different strata of the community (down to top)
- One youth representative
- One religious representative
- Others as required by the community (innovative farmers, respected people, women's group, and others).

Fig 5.1.2.2.1 Participatory discussion on the preparation of CAP in Tana Beles Project



3. *Biophysical and Socio-economic Survey*

All the natural and socio economic data for specific watershed has to be collected through different data collection methods. Data gathering should be focused, and communities should determine the types and amount of data needed to complete the watershed plan. After the type of data needed is established, sources of that information and optimal data collection methods must be identified.

3.1 *understanding the watershed people interactions.*

Collect the bio-physical and socio-economic data by implementing different data collection methods such as participatory mapping, transect walk, focus group discussion, interview and by reviewing the existing data /secondary data/.

Bio-physical and socio-economic data usually depend on both primary and secondary data. Primary data are generated and compiled by administering an original study, such as interviews, surveys, or focus groups. This type of data is designed to address a specific issue or information need that is not found in existing sources.

Secondary data comes from information sources that already exist, such as statistical abstracts, woreda reports and other published materials. Secondary data are usually available at minimal cost and effort.

Participatory mapping: Participants prepared maps of the community territory, the village, which highlighted important environmental, social or agricultural features. This tool was especially useful in identifying common property resources, in describing land use at the farm level and the existing social infrastructures in this specific community.

Fig 5.1.3.1.1 Participatory mapping exercise with the CWT in Tana Beles project



Transect walk: Observational walks were made along a significant route and significant environmental and agricultural features were plotted on a transect representation. This tool generally was used to describe land use patterns at the community level.

Focus group discussions: based on a list of topics or on an open-ended questionnaire, try to get as much as information about the bio-physical and socio economic profile of the community.

Time-line analysis: Interviews with participants in the thematic group discussions provided a summary of significant environmental, social and institutional events in the community's history. To collect information on events occurring in the far past, project staff often asked community elders to take part in the exercise or interviewed them separately.

3.2 Identification, ranking and analysis of problems by participants.

Ask participants to identify their problem, that affecting different aspects of their life. During this identification do not lead the community when you ask and do not ask them to prioritize the problem. The problems identified through this brainstorming were grouped into categories and prioritized later.

During problem identification, use participatory planning matrix to identify the major problems and its cause and solution.

Table 5.1.3.2.1 participatory planning matrix

No	Major problem	Cause	Solution	Rank
1	Land degradation	<ul style="list-style-type: none"> • Less /No/ attention is given for conservation • Overgrazing 	<ul style="list-style-type: none"> • To construct soil and water conservation measures • Area closure and stall feeding 	1
2	Low productivity	<ul style="list-style-type: none"> • Lack of improved seeds • Lack /un proper use/ of/ fertilizers 	<ul style="list-style-type: none"> • Improved seeds must be available • Demonstration on improved farming system 	2

In problem identification session you can get a list of identified problems which is listed in the cause column or vice versa, so the cause problem relation analysis will help you to pick or to concentrate on the main problems only.

4. Identification of interventions that bring change

Participants separated into small groups according to individual interests and were asked to analyze the prioritized problems in order to identify solutions that could be implemented given the existing assets and constraints. Here the issue of feasibility of intervention should be raised. Through participatory feasibility analysis, WWT and KWT review the ideas for action that were developed during the identification of solution.

The aim of assessing the feasibility of the proposed actions will help to materialize the activity in light of the existing conditions or the available resource. In most cases, this required an intensive discussion with community members on technical aspects of the proposed activities. During this stage, the project role shifted from that of facilitator of a community-driven appraisal and planning process to that of a technical adviser and/or a partner with which the community had to negotiate

Table 5.1.4.1 Identification of intervention for the problem

Problem	Solution	When to do	How we are going to do	Who is the main actor	Support from the project
The identified problem according to its rank	The recommended /feasible/ solution	Tentative timetable for implementing activities	The resources to be made available by the community (labour, local materials, etc.);	Which members of the community were to be entrusted with the responsibility for implementation (i.e. the actual interest group);	The type and nature of the external support needed for implementation (money, materials, skilled labour, technical assistance, training, etc.);

Based on the above table prepare community action plan and developmental map for the community. The community action plan should be carefully and accurately developed on the basis of what has been agreed upon with the community for the implementation of the proposed measures. It should show a multi-year plan with first year plan being prepared in detail quarterly

The CWT must be able to locate on the ground where the various watershed development interventions are to be implemented. The development map is an essential instrument that shows the actual placement of sites of development interventions in type with respect to landuse types. This map will be used during implementation of the plan.

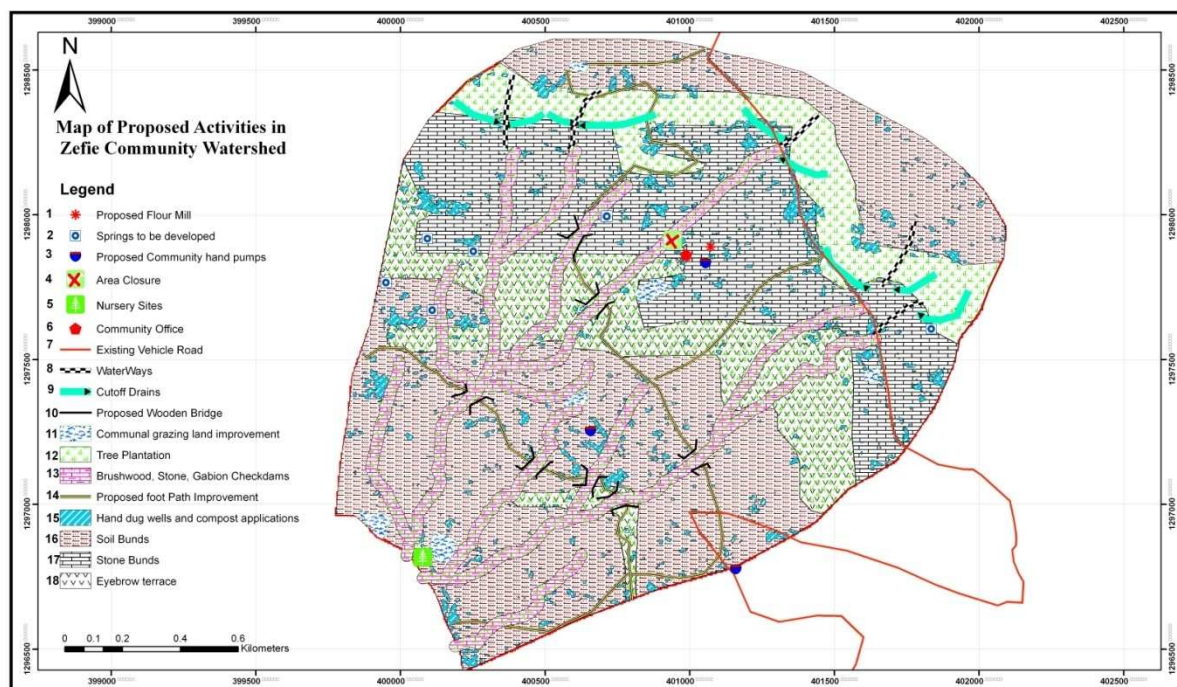
Table 5.1.4.2 sample of community action plan aggregated at woreda level

TBIWSDP Yearly Physical Planning Report For 2003
Woreda 'Dera'

9/24/2009

No.	Activity List	Unit	Plan of the project Period	Plan for the year	Quarterly Distribution of Physical Plan				Community Contribution	
					1st	2nd	3rd	4th	Input Required	Responsible
<i>Outcome 1: Natural Resources Development</i>										
Output 1.1 Community Based Participatory Watershed Development Plans (CBPWPDP) and Annual Action Plans										
1	1.1.0 Community Watershed plans prepared	No	64.00	19.00	3.00	16.00	0.00	0.00	stationary	com.DA's/woreda expert
2	1.1.1 Community Action plans prepared	No	67.00	20.00	4.00	16.00	0.00	0.00	stationary	woreda expert, comm.u, DA's
Output 1.2 Soil and water conservation measures undertaken on cultivated lands										
3	1.2.0 Stone bunds	Km	1,138.00	566.46	0.00	0.00	532.49	0.00	hand tool	comm.u, DA's
4	1.2.1 Soil bunds	Km	3,103.09	1,336.79	0.00	0.00	1,314.45	21.38	hand tool	comm.u, woreda expert, DA's
5	1.2.2 Stone faced soil bund	Km	1,427.86	583.84	0.00	0.00	578.37	5.46	hand tool, stone	comm.u, DA's, community fa
6	1.2.3 Fanya-juu	Km	421.07	203.23	0.00	0.00	200.53	2.70	hand tool	comm.u, DA's
7	1.2.5 Trenches	No	0.00	0.00	0.00	0.00	0.00	0.00		
8	1.2.6 Waterways	Km	29.36	11.88	0.00	0.00	10.88	1.00	hand tools	comm.u, DA's
9	1.2.7 Cut-off drains	Km	54.21	23.98	0.00	0.00	23.48	0.50	hand tools	comm.u, woreda expert, DA's
10	1.2.8 Maintenance of Bunds	Km	0.00	0.00	0.00	0.00	0.00	0.00		
Output 1.3 Gully Treatment and Rehabilitation										
11	1.3.0 Gabion checkdam constructed	M3	25,515.67	10,395.06	0.00	0.00	10,390.21	14.85	hand tool, gabion	comm.u, project, woreda
12	1.3.1 Stone checkdam constructed	M3	125,949.59	62,522.59	0.00	0.00	62,419.59	105.00	stone, hand tool	comm.u, DA's, woreda expe
13	1.3.2 Sack checkdam constructed	M3	0.00	0.00	0.00	0.00	0.00	0.00		
14	1.3.3 Brush-wood checkdam constructed	Km	38.49	16.92	0.00	0.00	16.92	0.00	wood, nail, hand tool,	comm.um., project
15	1.3.4 Gully reshaping and leveling	M	1,680.00	590.00	0.00	0.00	490.00	100.00	hand tool	comm.u, DA's
16	1.3.6 Checkdam Maintenance	M3	0.00	0.00	0.00	0.00	0.00	0.00		
17	1.3.8 Replanting	Ha	8,252,445.00	3,248,814.00	0.00	0.00	0.00	3,248,814.00	seedling, hand tool	woreda, comm.u, DA's
Output 1.4 Degraded land (hillside, grazing and forestry land) treated										
18	1.4.0 Area closure	Ha	55.27	31.82	0.00	0.00	6.89	24.93	wood, human labour, nail	project, comm.u

Fig. 5.1.4.1 sample of developmental map for Zefie community watershed in Tana Beles Project



5. Approval of the identified interventions and tentative action plan by the general assembly

The general assembly discusses on the result of step 4 and improves by amending the draft action plan.

6. Implementation strategies

Once the approved action plan by the general assembly completed, the WWT consolidate at woreda level and submit the action plan for woreda string committee for approval this approval procedure will continue up to regional string committee. . Then the final action plan back to the community and start implementation.

Different implementation strategies can be applied to motivate the community and to speed up implementation. Strategies like training, experience sharing, demonstration, providing the necessary hand tools etc... will be applied.

7. Participatory monitoring and evaluation

What is Participatory Monitoring & Evaluation? Participatory monitoring & evaluation (PM&E) is a process through which stakeholders at various levels engage in monitoring or evaluating a particular project, program or policy, share control over the content, the process and the results of the M&E activity and engage in taking or identifying corrective actions. PM&E focuses on the active engagement of primary stakeholders (WORLD BANK 2010a).

Participatory monitoring involves local beneficiaries in measuring, recording, collecting, processing and communicating information to assist development project in decision making. And *Participatory evaluation* assists in adjusting and redefining objectives, reorganizing institutional arrangements or re-allocating resources as necessary.

What are the principles of Participatory Monitoring & Evaluation? Conventionally, monitoring and evaluation has involved outside experts coming in to measure performance against pre-set indicators, using standardized procedures and tools. PM&E differs from more conventional approaches in that it seeks to engage key project stakeholders more actively in reflecting and assessing the progress of their project and in particular the achievement of results. PM&E is geared towards not only measuring the effectiveness of a project, but also towards building ownership and empowering beneficiaries; building accountability and transparency; and taking corrective actions to improve performance and outcomes.

Core principles of PM&E are:

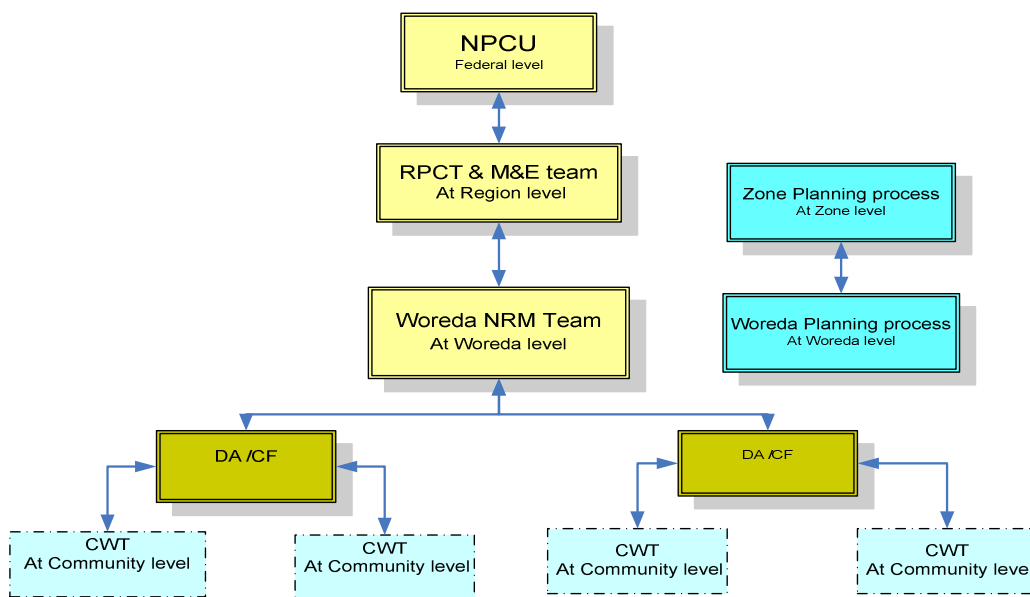
- Primary stakeholders are active participants – not just sources of information
- Building capacity of local people to analyze, reflect and take action
- Joint learning of stakeholders at various levels
- Catalyzes commitment to taking corrective actions

During PM&E, the planned list of activities, targets, technical designs, reasons for selection, maps, and others, should be considered as benchmarks, which allow field staff to compare achievements and their impact against original purposes.

People, who participate, are investing time and effort in an activity from which they hope to benefit, will need to be part of a continuing process of investigating how things are going, whether changes are needed, whether expected results are still realistic, whether new alternatives have become available, and the like.

I this stage define regular time for data collection, dissemination to the next level and meeting to discuss what is already achieved, what is remained, to see whether they are in a right track or not to perform the intended task etc., In case of Tana Beles data will be collected weekly at community level and disseminate to the zone and region monthly, the CWT meet monthly to discuss in different development issues and take corrective measures.

Fig. 5.1.7.1 Diagram for participatory monitoring process in Tana Beles Project



5.2 Data Quality Assessment and Responsibilities

Data said to be quality, if they fit for their intended uses in operations, decision making and planning or if they correctly represent the real-world to which they refer. But data accuracy problems can occur anywhere in the data collection, data entry and aggregation in different level and reporting process. The quality of reported data is dependent on the underlying data management and reporting systems from the grassroots to the higher level. Well established and strong system would produce better quality data. In other words, for good quality data to be produced by and flow through a data-management system, key functional components /actors in data manipulation and system developers/ need to be in place and strengthened at all levels of the system and a data verification tools must be used.

Data verification refers to the tools and processes that result in the creation of correct, complete and valid data that is required to support sound decision-making. The overall goal of data verification is to ensure and document that the data are what they claim to be, that means the reported results reflect what was actually done. When deficiencies in the data are identified, then those deficiencies should be documented for the data user's review and, where possible, resolved by corrective action. Therefore, data quality verification should be a part of what the project staff and implementers routinely do to ensure that they are collecting and disseminating quality data for stakeholders.

Data quality is not linear and has many dimensions like Accuracy, Consistency, Completeness, and Timeliness. Understanding the key data quality dimensions is the first step to data quality improvement.

- *Accuracy*: Do data objects accurately represent the “real-world” values they are expected to model? Accurate data are considered correct when the data measure what they are intended to measure. Accuracy refers to the closeness between the documented/reported value and the true value that is intended to measure. The data should be conceded with the existing norms and standards.
- *Consistency*: Do distinct data instances provide conflicting information about the same underlying data object? Are values consistent across data sets? Do interdependent attributes always appropriately reflect their expected consistency? The data generated by a project information system are based on systems and procedures that do not change according to who is using them and when or how often they are used. That means there should be a well established data collection, reporting, storing system which will not vary when the people doing the task are changing.

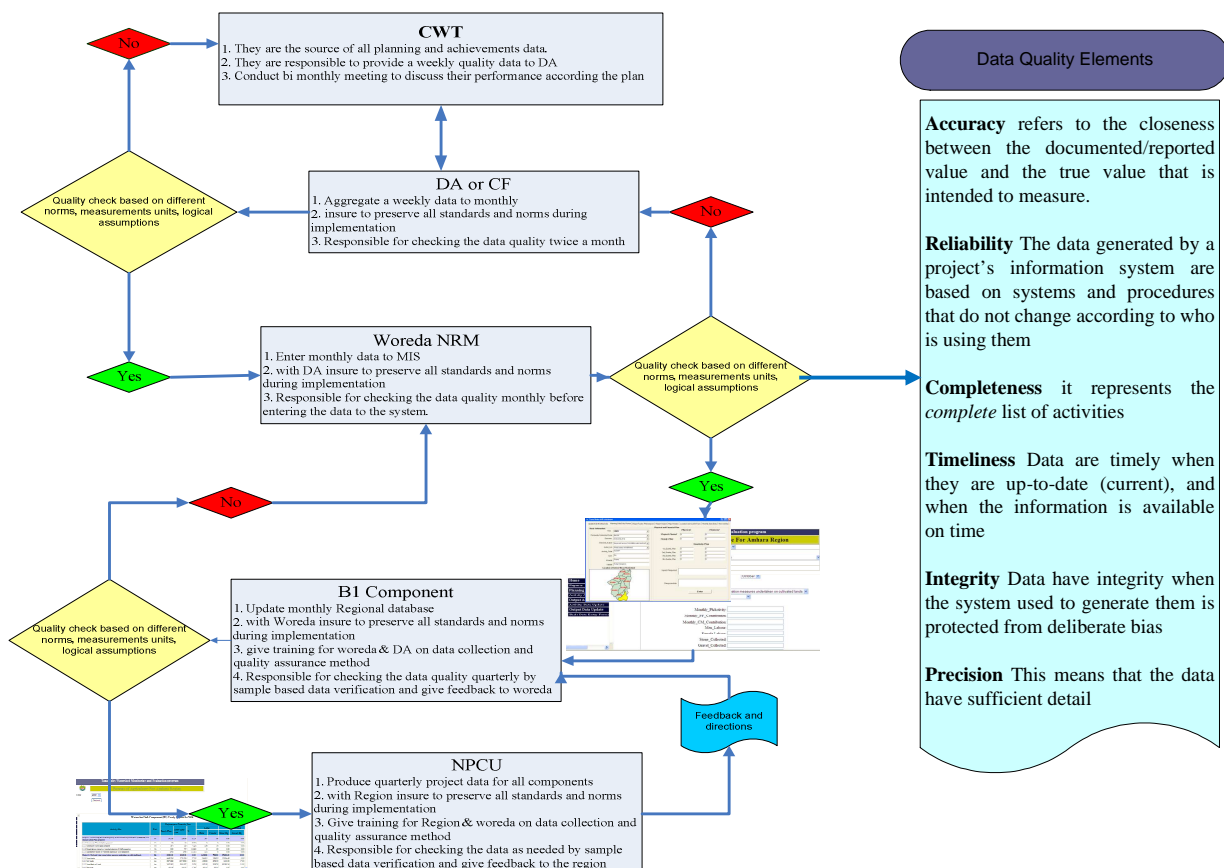
- **Completeness:** Is all the necessary information available? Are data values missing, or in an unusable state? In watershed management system, completeness means that an information system is appropriately inclusive: it represents the complete list of activities, persons participated, the inputs distributed/used etc
- **Timeliness:** Data are timely when they are up-to-date or current, and when the information is available on time. Timeliness is affected by: (1) the rate at which the project's information system is updated; (2) the rate of change of actual program activities; and (3) when the information is actually used or required.

During data quality assessment, all the above quality dimensions would be assessed in different data generation and manipulation level. The data quality will be defective at different level: it will start from grass root level in data collection, in data entry phase in the middle level and interpretation analysis of the data for reporting at higher level. So there is always a need to check /verify/ its quality in different level.

5.2.1 Data Quality Assessment and Responsibilities in Tana Beles project

In Tana Beles project, quality of data should be checked at each level routinely starting immediately from the CWTs to all other levels. That means, in all project implementation levels, the quality of project data should be checked before reporting to the next level. A clear responsibility was given for data quality assurance for different level. Figure ___ shows the information units in different level and their responsibility in data manipulation and data quality assurance.

Fig 5.2.1.1 Quality assurance process in Tana Beles Project



The data assessment tools, for the project, are therefore designed to:

- Verify the quality of the data,
- Assess the system that produces that data, and
- Develop action plans to improve both the data collection and reporting formats.

The purpose of verifying the reported data is to assess if the collected, aggregated and reported data enable to measure the progresses in key indicator(s) of the project and to cross-check the reported results with other data sources like field level observations.

Table 5.2.1.1 General Quality Control Procedures for the project

No.	Quality Control Activities	Procedures
1	Overview all the data collected and reported	Cross-check all the reports from different level.
2	Put an assumptions and criteria for the selection of activity for quality control	By cross-checking the activity done and its plan try to pick out those activities you assume overvalued, or undermined, or important activity.
3	Check for data collection, reporting, aggregation errors	<ul style="list-style-type: none"> • Check a sample of data at field level for data collection error. • Check reports at different level and observe errors. • Check the difference between community watershed report and the aggregated report at kebele or sub watershed level to see the aggregation error.
4	Check all the data units are correct	<ul style="list-style-type: none"> • Check all the units are correct for all reported activity for different level. • Check the aggregated value based on its unit • Check the unit conversion method used in kebele and woreda level.
5	Check for consistency in data between source Categories.	<ul style="list-style-type: none"> • The MIS system cumulates all the monthly data to get quarterly, yearly and project period achievement data. Therefore, all the data should be consistent all the time. So check the consistency of the data especially units of measurements, level of precision etc. • Check reporting time. Report should be in fixed time interval and it should not mix monthly activity with other months.
6	Check data integrity of database files.	<ul style="list-style-type: none"> • Check all the data type based on the database structure. All numeric data should be entered into the database as number and text also should enter as text, they should not mix up. • Check for unrealistic data. For example there will report showing achievement more than the area of micro watershed or other related errors.
7	Check that the movement of data among different data handler is correct.	<ul style="list-style-type: none"> • Check the difference b/n the source data and the next level data/data on the hands DA's/ . • Check the difference b/n DA's report and report from woreda.
8	Check the achieved activities against the standard	<ul style="list-style-type: none"> • At the field check the performance of selected activities based on the given work norm and standard specification in the watershed

		<p>guideline.</p> <ul style="list-style-type: none"> • Check other activities outside of soils and water conservation based on their work norm. • Ensure that these activities are in correct/suitable location and they are used for their intended propose.
9	Undertake completeness checks.	<ul style="list-style-type: none"> • Observe on the field if any activity is not reported. • Observe on the field if activity is reported without being implemented
10	Check the location of spatial data	<ul style="list-style-type: none"> • Check the X and Y coordinate of the selected activity using GPS. • Check the attribute of selected spatial data.
11	Discuss with community and woreda experts	<ul style="list-style-type: none"> • Check for any compliance • Give feedback at field level on quality issue

Table 5.2.1.1 *Data Management and Reporting System Assessment* /questions to be followed/

Functional Areas		Questions	
I	M&E capabilities, roles & responsibilities	1	Are key M&E and data-management staff identified with clearly assigned responsibilities?
II	Training	2	Have the majority of key M&E and data management staff received the required training?
III	Indicator Definitions	3	Are there operational indicator definitions meeting relevant standards that are systematically followed by all structures?
IV	Data Reporting Requirements	4	Has the project clearly Documented what is reported to whom, and how and when reporting is required?
V	Data Collection & Reporting forms & tools	5	Are there standard data-collection and reporting forms that are systematically used?
		6	Are data recorded with sufficient precision/detail to measure relevant indicators?
		7	Are data maintained in the way that cannot easily be damaged/deleted or misplaced to assure its accessibility to others?
		8	Are source documents kept and made available as source document?
VI	Data Management Processes and Data Quality Controls	9	Does clear documentation of collection, aggregation and manipulation steps exist?
		10	Are data quality challenges identified and are mechanisms in place for addressing them?
		11	Are there clearly defined and followed procedures to identify and reconcile discrepancies in reports?
		12	Are there clearly defined and followed procedures to periodically verify source data?

All the above questions should assess and answer briefly. Based on the answer all corrective measures must be taken such as adjusting reporting formats, redefining the indicators, give training for project staffs for data collection and handling and update the MIS system.

5.3. M&E Data Types, Collection Methods and Tools

5.3.1 Determining M&E information needs and sources

Once the monitoring and evaluation purposes, objectives, questions and indicators for assessing the project/program have been selected, type and adequacy of information to provide answers to the monitoring and evaluation questions which meet the selected indicator should be reviewed.

In order to conduct M&E activities, data needs to be collected, collated, analyzed, and communicated to project stakeholders.

Two main categories of data sources; (a) routine and, (b) non-routine. These categories may include secondary (desk) data, as well as primary data that has been gathered specifically for the purposes of M&E.

Routine data should be collected as part of project monitoring by project team members, as well as by implementing partners. For example, regular data collection from community watershed teams' and/or development agents', reports of project activities. Such information is usually collated monthly by M&E then analyzed and forwarded to project management for their monthly reports. Appropriate reporting formats for different level structures, including for the communities should be prepared and given with adequate explanations.

Non-routine data is collected periodically, often annually, at project mid-term or at the end of a project.

5.3.2 Types of Monitoring and Evaluation Data

One of the first decisions that M & E management have to make is *what type of data needs to be collected in order to track the progress of the project and later evaluate its achievements?* This knowledge is important as it will guide decisions about what data types and what data collection methods are most appropriate to use.

There are two general types of data; quantitative and qualitative. While quantitative data are more of objective in nature, qualitative data are subjective.

Quantitative data deals with numbers, data which can be measured (Length, height, area, volume, weight, speed, time, temperature, humidity, sound levels, cost, members, ages, etc).

Qualitative data deals with descriptions; data can be observed but not measured (Colors, textures, smells, tastes, appearance, beauty, etc).

As qualitative and quantitative data complement each other, both should be used.

Characteristics of Quantitative Data:

- Use measurement techniques (e.g. measuring SWC activities implemented area; number of people participated for SWC activities, crop yield, number of cattle, etc),
- Seek to quantify the experiences or conditions,

- Use closed-ended questions with limited potential responses,

Characteristics of Qualitative Data

- Qualitative data seek to uncover the context, perceptions and quality about a particular experience or condition.
- Data collection methods are more likely to employ a more participatory approach through the use of open-ended questions that allow respondents to expand on their initial answers and lead the discussion towards issues that they find important.
- Participatory methods will commonly be used in qualitative data collection.

Both qualitative and quantitative data have a role to play in monitoring and evaluation of projects. If project indicators need information about how and why issues then clearly qualitative data will be needed.

Because of the different characteristics of quantitative and qualitative data different data gathering methods and techniques need to be employed. Typically, quantitative data is gathered using formal *surveys* of large groups of individuals to provide the counts of numbers required for these types of project indicators.

Table---: When to use Quantitative and Qualitative Approach

If you	Then use this Approach
Want to conduct statistical analysis	
Want to be precise	Quantitative
Know you want to measure	
Want to cover large group	
Want narrative or in depth information	
Are not sure what you are able to measure	Qualitative
Do not need to quantify the results	

5.3.3 What kind of Data should be collected?

The information to be collected is the evidence available to answer the monitoring evaluation questions. Poor evidence is information which cannot be trusted, or simply is not relevant to the project decision making. Good evidence is information that comes from reliable sources and through trustworthy methods that address important questions. The data we are reporting should ensure for its validity. That means the extent to which the data collection strategies and instruments measure what they are supposed to measure. Therefore, particular to the natural resource rehabilitation and development, the following key data are required for timely M&E result.

- a) *Inputs*: The financial, human, and material resources used for the development intervention. The main inputs could be summarized as the budget required for running of the development process, the materials required (hand tools, gabions, meters, water levels, poles, forest seeds, etc) and the human power required (both skilled and unskilled)
- b) *Training* given (number of participants by type of training),
- c) Detail SWC activities identified by land use (farm land, degraded communal lands, gully treatment activities as indicated in the reporting format,
- d) Forestry/agro-forestry details
- e) The output size in each type of land use (e.g. area of cultivated land, degraded land and gullies affected area) treated with different SWC activities,

- f) Number of people participated,
- g) Local material contribution,
- h) Challenges encountered in the course of implementation
- i) Lessons learnt should be identified and reported for future learning and improvement,
- j) Other basic data related to the watershed area-like land size, population size, livestock population, annual yield data, etc.

5.3.4 Data Collection Methods

a) Focus Groups

A Focus Group (*Focus Group Discussion or FGD*) is a qualitative research technique that consists of an open semi-structured interview of a group of between 6-10 people that is led by a skilled facilitator. In the development sector Focus Groups are often used in project evaluations and assessments to confirm and/or explain quantitative survey data. They are also adopted as a stand-alone technique to gather rich data to develop more effective project proposals, activities, and/or to monitor and evaluate behavioral, attitudinal, and other types of qualitative indicators or questions related to an intervention.

To ensure FGD yield useful information they need to be very well prepared, facilitated, and followed-up. The following steps are recommended.

1. Preparation

- Identify the major purpose or objective of the Focus Group. Then develop six to eight associated key questions that you want address.
- Identify potential FG members and invite them to the discussion. Make sure they have a common interest or experience in relation to the discussion topic or have some characteristics in common that will enable them to hold meaningful dialogue.
- Contact each participant just before the FG to ensure they are aware of the topic of the Forum, its timing and where it will be held.
- Prepare guidelines and an agenda for the facilitator to enable them to achieve the FGD objectives.
- Timing and location – ideally a FG should last approximately 1-1.5 hours, just long enough to generate rich data but not too long to ensure participants' other commitments are not compromised.
- Record responses – this will need to be done by either manual means or by using an audio or audio-video recorder. Selection of the recording method should be based on the question

2. During the FGD

- The main aim of a facilitator is collecting useful information to meet the goal of the FG. To achieve this the facilitator should;-
 - Start by introducing themselves and the recorder,
 - then explain the FG objective and the importance of recording the FG data in an acceptable manner to participants
- The facilitator should then follow the prep-prepared agenda, carefully asking the group the pre-prepared

questions, using words that they understand.

- All group members should be given a few minutes to provide answers to each question. The facilitator should also encourage those that have not spoken to speak, as well as ask more participative to give others opportunities to express their thoughts.
- After each question is answered by the group the facilitator should carefully reflect back a summary of what has been said and ask for further clarification if it is needed.
- When closing, the facilitator should tell participants that they will receive a copy of their answers in a report, then thank them for coming and close the session.

b) Interviews

Primary or field data collection often involves stakeholder interviews. These may be direct person to person, or indirect telephone, email, or postal services surveys. In most cases these all involve a survey or questionnaire form of prepared questions that address issues related to the expected outputs, outcomes, and impact of a project.

In data collection for development personal interviews are used to gather in-depth and descriptive data about the qualitative indicators.

c) Surveys

The terms *survey* and *questionnaire* are often used interchangeably in M&E. *Surveys* refer to large scale data collection using a standard data collection form, while *questionnaires* are the forms that are used to collect survey data. Surveys are conducted periodically, rather than regularly because of the time and costs associated with them, for instance for baseline studies, mid-term reviews, and during evaluation.

Surveys are a tool that can be used for both the monitoring and the evaluation of projects. They can include surveys for in-depth personal interviewing survey methods. A survey form should be as short as possible and written in a manner that is easily understood by respondents. This will help to enhance response and completion rates.

Writing good survey or interview questions is no easy task. Start by identifying the specific purpose of data gathering, that enable to clearly capture the progress of the project indicator in question and then develop a number of possible questions. This will help to encourage a higher response and completion rate.

What is a good question? Good questions should:-

- be in understandable language to the target group,
- devoid of jargon and abbreviations as these can confuse

- use simple, common words rather than complex words
- avoid biasing responses
- not use too many choices in multiple choice questions so as to avoid confusion
- be close-ended for surveys rather than open-ended, as too many of the latter take time to answer and thus are likely to reduce survey completion rates. Many open questions are also difficult to analyze if used in large surveys
- Ensure sensitive or difficult questions are asked well into the interview or survey to give the interviewer time to build a relationship with a respondent.

5.3.5 Data Analysis

To enhance organizational decision-making and learning, M&E need to gather raw data, enter it into a database, then analyse it and provide the information that is useful to project management. This transformation process is called *data analysis*.

Data analysis should not be complicated and involve sophisticated statistical analysis packages. The type of analysis that is required will depend on what program/project related questions that management have to answer. This typically relates to the objectives, indicators, and targets in a project *Logical Framework*.

Broadly speaking, there are two main types of analysis – *quantitative* and *qualitative*. The former provides counts of the numbers, percentages, frequencies, means and medians, and rating measures to answer ‘how many?’ type of questions. The latter provides a descriptive analysis to answer ‘why and how’ questions.

Many project *indicators* are expressed in percentages. This will mean M&E will need to quantify the progress of change associated with that indicator against need to be established in the baseline study, as well as a comparison of the identified change against the Logframe target indicators.

For project milestone studies, such as Mid-term and Final *Evaluations*, analysis will also need to include measures of the coverage, degree of overall change. M&E also should ensure that data is captured and analyzed to address about the relevance, efficiency, effectiveness, and sustainability of the project.