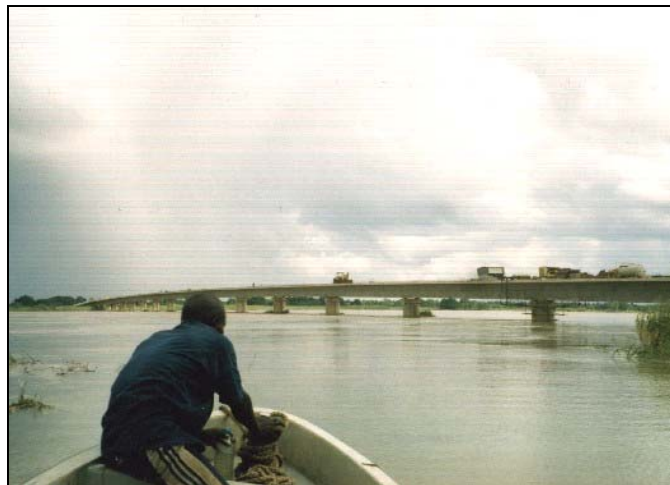**Environmental Management and Biodiversity Conservation of Forests, Woodlands, and Wetlands of the Rufiji Delta and Floodplain**

A Socio-Economic Monitoring and Evaluation System for the Rufiji Environment Management Project

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Rufiji Environment Management Project - REMP

Project Goal

To promote the long-term conservation through 'wise use' of the lower Rufiji forests, woodlands and wetlands, such that biodiversity is conserved, critical ecological functions are maintained, renewable natural resources are used sustainably and the livelihoods of the area's inhabitants are secured and enhanced.

Objectives

- To promote the integration of environmental conservation and sustainable development through environmental planning within the Rufiji Delta and Floodplain.

- To promote the sustainable use of natural resources and enhance the livelihoods of local communities by implementing sustainable pilot development activities based on wise use principles.

- To promote awareness of the values of forests, woodlands and wetlands and the importance of wise use at village, district, regional and central government levels, and to influence national policies on natural resource management.

Project Area

The project area is within Rufiji District in the ecosystems affected by the flooding of the river (floodplain and delta), downstream of the Selous Game Reserve and also including several upland forests of special importance.

Project Implementation

The project is run from the district Headquarters in Utete by the Rufiji District Administration through a district Environmental Management Team coordinated by the District Executive Director. The Project Manager is employed by the project and two Technical Advisers are employed by IUCN.

Project partners, particularly NEMC, the Coast Region, RUBADA, The Royal Netherlands Embassy and the Ministry of Natural Resources and Tourism, collaborate formally through their participation in the Project Steering Committee and also informally.

Project Outputs

At the end of the first five –year phase (1998-2003) of the project the expected outputs are:

An Environmental Management Plan: an integrated plan for the management of the ecosystems (forests, woodlands and wetlands) and natural resources of the project area that has been tested and revised so that it can be assured of success - especially through development hand-in-hand with the District council and the people of Rufiji.

Village (or community) Natural Resource Management Plans: These will be produced in pilot villages to facilitate village planning for natural resource management. The project will support the implementation of these plans by researching the legislation, providing training and some support for zoning, mapping and gazettement of reserves.

Established Wise Use Activities: These will consist of the successful sustainable development activities that are being tried and tested with pilot village and communities and are shown to be sustainable

Executive Summary

Introduction

Monitoring and Evaluation (M&E) is a valuable tool for better planning and implementation of projects and programs. However a tool is only as good as its user. The Rufiji Environment Management Project (REMP) proposal indicated the importance of M&E as a component in the project although an M&E system was not incorporated right at the beginning. The project envisaged the design of an M&E system after completion of part one of the first phase of the project. This study was therefore commissioned to fulfill part of the tasks involved in designing an M&E system needed to strengthen project implementation. In this study major emphasis was placed on socio-economic aspects of the project.

The approach taken in this work has been a step-by-step build up of the M&E system, starting with a review of the crucial ingredients of the project. A review of the project objective structure and its logical framework was the initial task. This was followed by a review of the project's existing information system in order to indicate additional data needs that are required to fill into the M&E system. Further activities in the study included the development of propositions on data collection, analysis, reporting and feedback mechanisms. After all this was developed, a proposal for the organization and positioning of the M&E system including cost considerations was made.

It is noted that the project proposal was well designed with the exception that an M&E system was not instituted right from the beginning of the project. This however is a matter for discussion with regard to the most convenient timing to institute an M&E system in a project. An overview of the project is presented in Section 2. Two alternative presentations are used - the project objective structure and the project logical framework. An understanding of this logic was the basis for the design of subsequent M&E system activities.

Section 3 is an overview of the management and administrative structure of the project. The project policy-making body is the Steering Committee (SC). The Environment Management Team (EMT) reports to the SC and the Full Council. The management structure involves full participation of the Rufiji District Council and for that matter it can be concluded that the project has tried as much as possible to integrate into the local government structure. Participation in project activities takes place from the village level upwards. It is observed that the M&E system will enhance the effectiveness of the EMT through the improvement of the flow and content of information to it and hence its decision making ability. This is expected to lead to well articulated strategies and work plans.

Critical External factors and Unplanned Effects:

It is proposed that the exogenous impact of the project on the physical and socio-economic environment be included in the M&E system (Section s 4). The M&E system will include a provision for the surveillance of unplanned project effects (both positive and negative effects). The M&E system will also take into account exogenous factors that can affect the implementation and success of the project.

Functional analysis of the main agents and their information needs:

The project logic and the administrative and management structure provide the basic information to identify project main agents and their associated activities (Section 5). After this, the next step is to identify the information needs of each agent (Section 6).

Section 7 is a review of the existing information system to establish the current situation as a basis for deciding on the additional information needs as a result of adapting the M&E system.

Sections 9 - 12 dwell on the implementation aspects of the M&E system: data collection and processing; data analysis; reporting and feedback, organization of the M&E system and finally cost implications in implementation the M&E system.

It is generally recommended that the M&E system being proposed should be implemented within and by the present management and administrative structure rather than creating a separate M&E unit or department. Such an approach is expected to minimize costs, and will be a basis for ensuring a sustainable environment management program in the flood plain and delta. It is further proposed that right at an early stage the M&E system be tested for its relevance, accuracy, usability and timeliness. There will be a need therefore to conduct workshops on the M&E system so that the main agents can get the chance to test it and adopt it.

Preface

In March 2000 Drs Emmanuel R. Mbiha and Ephraim M. M. Senkondo of the Department of Agricultural Economics and Agribusiness of Sokoine University of Agriculture entered into an agreement with the World Conservation Union (IUCN) Eastern Africa Regional Office. The agreement required them to conduct a socio-economic profile of Rufiji Flood Plain and the Delta, selection of additional project villages and to design a monitoring and evaluation system for the project. The above tasks were implemented with close supervision of the Rufiji Environment Management Project (REMP/MUMARU) of the Rufiji District.

Acknowledgement

Glossary and Abbreviations

Glossary

<u>Monitoring</u> is a continuous and periodic surveillance of the implementation of a project to ensure that input deliveries, work schedules, targeted outputs and other required actions are proceeding according to plan.

<u>Evaluation</u> is a systematic process that attempts to assess as objectively as possible the relevance, effectiveness and impact of a project in the context of the project objectives.

<u>On-going evaluation</u> involves a continuous analysis and assessment of the inputs, outputs, effects, impact and relevance of a project.

<u>Ex-post evaluation</u> assesses the achievement of **long-term** project objectives and their impact on the intended beneficiaries and the project environment. It assesses the overall achievements of a project, in terms of its outputs, effects and impact, and provides lessons to assist the planning of future projects.

Abbreviations

MUMARU	*Mradi wa Usimamizi wa Mazingira Rufiji*
REMP	The Rufiji Environment Management Project
M&E	Monitoring and Evaluation
TOR	Terms of Reference
NR	Natural Resources
NRM&C	Natural Resource Management and Conservation
EMP	Environment Management Plan
EMT	Environment Management Team
SC	Steering Committee
RAS	Regional Administrative Secretary
DC	District Commissioner
DED	District Executive Director
IUCN	The World Conservation Union
PM	Project Manager
CTA	Chief Technical Advisor
TA	Technical Advisor
WWF	World Wildlife Fund
TEHIP	Tanzania Essential Health Interventions Project
DALDO	District Agriculture and Livestock Development Officer
DCDO	District Community Development Officer
DNREO	District Natural Resources and Environmental Officer

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1   Introduction

The Rufiji Environment Management Project proposal recognises the importance of M&E and envisaged the institution of the system in the project within the first part of phase one of the project. It was planned that an M&E system would be instituted during the second year of the project. Some assignments have been given to consultants to develop various aspects of the M&E system. The present assignment concentrates on the socio-economic aspects of the project. The results of the M&E assignments that have been undertaken by a number of consultants will be the basis for the discussion and implementation of the system by the project. This report provides a framework for institutionalisation of the M&E approach into the project with special reference to social economic issues.

Purpose of the consultancy and Terms of Reference (TOR)
The overall study has three main objectives:
- Produce a socio-economic profile of the flood plain and delta
- Select additional villages for project intervention, and
- Design a system for monitoring the socio-economic impact of the project.

The detailed TORs are presented in appendix 2 of the socio-economic report.

This report addresses the third objective 'i.e. Design a Monitoring System for the project impact on target population livelihoods', which has the following sub-objectives:
- Identify indicators of project impact that are within the capacity of the district council to monitor.
- Develop and describe in detail a proposed system for monitoring which includes a schedule of action (what, who, when), means, costs and will have the following characteristics; simple, within the responsibility of the district council, involves local communities, includes a feedback mechanism for future planning at all levels

Methodology for the design of the monitoring system:
In order to develop the M& E system the consultants used the following tools:
- discussions with project management and staff of the district council and other development projects operating in the flood plain and delta.
- Review of project documents.

The report provides a step-by-step build up of the M&E system, starting with a review of the crucial ingredients of the project. First a review of the project including the management structure and functions is undertaken. Second the existing project information system is reviewed as a prerequisite for any specification of additional data needs. Further steps include design for data collection methods, data analysis, reporting and feedback mechanisms, and finally decisions on the organisation and plan of implementation of the M&E system including cost considerations.

2   Analysis of the Project Logic

This section is based on the study and review of project documents. In the M&E exercise the first step is to understand the project logic and the identification of project elements which have to be monitored. Two alternative approaches have been used to review the project logic. First is the project objective structure, and second is the project logical framework. This review indicates that the initial project design was carefully done. The project objectives are clearly stated and the assumptions and linkages are explicit and clear. Section 2.1 presents the project objective structure (Table 1) and section 2.2 presents the project logical framework (Table 2) as derived from the project documents.

2.1   Objective Structure of Rufiji Environment Management Project (REMP)

Table 1 is REMP objective structure, which is a visual representation of the project logic.

Table 1:Project objective structure

Goal	Conservation of the lower Rufiji forests, woodlands and wetlands leading to sustainable development with enhanced living standards of inhabitants

Purpose	Improved Natural Resource Management by district administration, resource users and other stakeholders

Outputs	Knowledge base developed	Environmental awareness enhanced	Capacity built	Environmental plans produced	Wise use of resources promoted	Project management

Activities and Outputs	Resource assessment Socio-economic assessment Environment assessment Information centre	Informed decision makers Informed local people Lessons conveyed internationally	Professional skills development Equipment and facilities provision Institutional development Skilled resource users Second phase proposal	District environment plan Pilot village environment plan Monitoring system Legislation and policy development Integrated planning and development	Wise use research and development Enabling environment	Management systems Strategic work planning Monitoring and evaluation Facilities and equipment

2.2 Logical Framework of the REMP

Another technique for analysing the inherent logic of a project is the logical framework analysis. This is a more comprehensive approach to the understanding of a project than the project objective structure.

Table 2: The Project Logical Framework

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
GOAL: Conservation of the lower Rufiji forests and woodlands and wetlands leading to sustainable development with enhanced living standards of inhabitants	**Indicators:** • Increased incomes • Environment conserved and bio-diversity maintained	• Incomes of households increased by a certain percentage • Current rates of environment degradation and loss of bio-diversity reduced	Supportive and conducive national, regional and district policies are in place
PURPOSE: Improved natural resource management by district administration, resource users and other stakeholders	**Indicators:** • Strategies and work plans in place at district, village levels • Adoption of strategies by all resource users and other stakeholders	• Environment management plans • Annual reports	Integration of the project into district administrative and management plans Coordination and collaboration with other stakeholders
OUTPUTS 1. A knowledge base developed to support environmental planning and sustainable development established 2. Key stakeholders aware of environmental values, lessons learned and using information to improve management 3. Improved capacity of key stakeholders and local institutions for NRM&C 4. Environmental planning and monitoring processes established and initial environmental plan developed 5. Wise use activities researched, developed, piloted and adopted 6. Project effectively managed, monitored and evaluated	**Indicators** **Output 1** • Natural resources assessments • Socio-economic and cultural assessments • Land use and environment assessments • Information resource centre in use **Output 2:** • NRM&C information used by key stakeholders • Local community action on NRM&C • Reports and publications on NRM&C **Output 3:** • Key government staff incorporating NRM&C strategies	**Output 1:** • Number of maps specimens and parameters • Number of reports on socio-economic and cultural aspects • Number of land use and environment plans • Library space • Library materials • No. of Library staff **Output 2:** • Environment and conservation reading materials • No. of awareness events/tools used • No. of women participants • No. of personnel from key stakeholders and institutions trained in NRM&C	Project staff will carry out their tasks and activities correctly and efficiently. Timely and quality production of consultancy assignments Willingness and co-operation by villagers thus making the project logic a reality

	• Formation of local institutions involved in NRM&C Key resource users demonstrating knowledge and skills in improved environmental management **Output 4:** • District and village environmental management plans. • Monitoring system in place **Output 5:** • Tested wise use pilot activities/methods **Output 6:** • Project management system in place • M&E system in place • Project strategic plans	• Weather monitoring reports • Flood and river assessment reports • Flood warning data and analytical reports • Number of professional publications read at international level **Output 3:** • No. of personnel trained in NRM&C • Equipment and facilities acquired • Environment Management Team formed at district level • Proposal to have phase two of the project made **Output 4:** • District Environment Plan produced by year 3 of the project • Number of village environment plans • Number of seminar participants **Output 5:** • Number of wise use activities implemented **Output 6:** • Management system • Annual work plans • Workshops on M&E • Number and types of equipment and facilities	

ACTIVITIES:
1. Natural resource assessments and surveys
2. To conduct awareness programs for key stakeholders and local institutions
3. To establish an information centre
4. Training of policy/decision makers at district, ward and village level
5. Training of farmers and villagers
6. Weather and flood monitoring
7. To produce international reports and publications
8. To train counterpart staff and key government staff on NRM&C
9. To support local institutions to develop and adapt NRM&C approaches
10. To conduct study tours for villagers
11. To develop an environmental plan for the delta and flood plain
12. To develop village environment management plans
13. To integrate the environment plan with national, regional and district plans
14. To carry out wise use pilot activities
15. To purchase key equipment and facilities
16. To implement a well elaborated project management system
17. To make project strategic plans and annual work plans
18. To write a second phase project proposal

3 An overview of the management and administrative structure of the project

The supreme policy making body is the Steering Committee (SC). The SC is composed of the following members:

The Regional Administrative Secretary (RAS), Coast Region who is also the Chair of the SC,

Other members of the SC are from:
- Ministry of Finance/Planning Commission
- National Environment Management Council
- Ministry of Local Government, Prime Minister's Office
- Forest and Bee-keeping Division, Ministry of Natural Resources and Tourism
- Rufiji District Commissioner (DC)
- Rufiji District Executive Director (DED)
- Royal Netherlands Embassy, Tanzania
- IUCN - The World Conservation Union

The role of the Steering Committee is to:

- approve annual work-plans and budget;
- approve annual reports;
- approve any proposed changes in objectives, activities and other project arrangements;
- advise on issues related to national policies;
- facilitate linkages with central government and with other regions and district;
- approve senior project appointments.

The Environment Management Team (Committee) overseas the implementation of the project and reports to the steering committee. The EMT is composed of the following members:

- District Executive Director (DED) - Co-ordinates all project activities and is chair of EMT
- District Lands, Natural Resources and Environment Officer (DLNREO)- Assistant co-ordinator and secretary to EMT
- District Logistical and Planning Officer (DLPO)
- Project Manager (PM)
- Chief Technical Advisor (CTA) - position vacant
- Technical Advisor, Socio-economics
- District Agricultural and Livestock Development Officer (DALDO)
- District Education Officer (DEO)
- District Medical Officer (DMO)
- District Community Development Officer (DCDO)

The Environment Management Team (EMT) is the next decision-making body below the SC. The EMT is very important decision making body and implementing tool for the project. They receive and act on reports on all activities of the project. The M&E system will enhance the effectiveness of the EMT by improving the flow and content of information useful for decision-making and subsequently the development of strategic and work plans.

The EMT meeting is the point for receiving feedback and reports from various agents involved in the project.

4   Analysis of critical external factors and unplanned effects

4.1   Unplanned effects

The exogenous impact of a project on the physical and socio-economic environment (which is not contained in the project logic) must also be included in the M&E system. Unplanned effects can be positive or negative in nature. For this reason provision must be made for the surveillance of these unplanned project effects - the form they take and who or what they will affect. This Section suggests a procedure to make sure that these effects are satisfactorily monitored   (Table 3).

This particular project's success hinges on the support and conducive environment provided for by the policy making and regulatory institutions related to the environment and natural resource conservation. These institutions are at the national, regional and district levels as well as at the village government level. There is need for the project to be aware of developments in the policy and legal front. Furthermore the project is expected to strive to integrate project activities to fit into the management structure at all levels. At the national level the project may come into conflict with national polices and priorities. It is realised at the outset that while the major goal of the project is to promote sustainable and wise natural resource use, there are at the moment laws and regulations and other factors that are in conflict with these ideals. An understanding and realization of this situation is crucial for project success.

Table 3: Project effects and responsibilities (to identify project effects)

Activity ⟋ Agents	NR assessments, surveys and plans	Awareness programs	Knowledge base & Information centre	Training and capacity building	Wise use pilot activities	Project Management
Partners, e.g. WWF, TEHIP, UNICEF, Steering Committee			Differences in awareness programs	Differences in approaches		
Environment Management Team	Limited human resource capacity at district level			Limited human resource capacity at district level	➢ Attitude of officials towards villages to accrue license incomes ➢ Attitude of officials on village control of NR	
Village/Ward level			Surveillance of harmful exploitation of NR		Conflicts on NR and land use among the villagers, private exploiters, nearby national reserves and natural resource officers	Increased village government income from levies and licenses
Household level			Increased household incomes from NR			Conflict on wise use concept between village and individual households

4.2   Critical external factors

Exogenous factors can affect the implementation and success of a project. For the project under consideration the exogenous factors identified include new projects, policy and management system changes. These may have an influence on the overall goal and purpose of the project. Table 4 is a suggestion for monitoring external factors that may have a bearing on the project.

Table 4: Monitoring critical external factors

Description	Type of information required	Form of information or indicators	Purpose of information (what decisions)
Village boundaries	Mapping of village boundaries	Maps, Boundary demarcations	Inventory of village natural resource base
New projects , e.g. Infrastructure, Prawn farming, Stigler's Gorge etc.	Planned infrastructure improvements and studies on impacts	Expected impact on NR and Environment, changes in socio-economic activities related to NR use	To influence planning for infrastructure improvements
Policy changes	New policies on natural resources and the environment	Expected effects at district and village level	Adjust to and influence implementation
Management systems	New local government laws and regulations	Documents	Adjust to and influence implementation
Tourism (Western Flood Plain)	-Capacity of tourist activities in the area -Boundary demarcations with Selous and other game reserves	Possibility for village participation in running tourist camp sites	Reduce conflicts by clear definition of ownership of NR

5   Analysis of the functions of main agents involved

The project logic enables us to identify project activities while the administrative and management structure of the project enables us to derive the main agents involved. In this section this information is brought together in a two-way table in which the agents are listed vertically and the activities horizontally (Table 5). In this case therefore it is possible to assign activities to agents. It is obvious that almost each agent is involved in more than one activity and that each activity requires the involvement and decisions of more than one agent. This arises because an activity comprises several elements such as, the preparation of decisions concerning the activity; the decision-making; the preparation of the activity; the execution and the supervision of the activity. Reading the table vertically shows for each activity the agents involved and the way they contribute to the completion of the activity.

Table 5: Functions and Main Agents

Activity / Agents	NR assessments, surveys and plans	Awareness programs	Knowledge base & Information centre	Training and capacity building	Wise use pilot activities	Project Management
Steering Committee (SC)	Receive and approve reports and proposals					
Full Council (FC)	Receive, consider and recommend, reports and proposals to the SC					
Environment Management Team	Receive, consider and recommend, reports and proposals to the FC					
Co-ordinator (DED)	➢ Chair of the Environment Management Team ➢ Read materials and reports from district departments and REMP ➢ Co-ordinate district council departments and oversee performance					
Assistant co-ordinator (DLNREO)	➢ Support to the Co-ordinator ➢ Secretary of the EMT ➢ NR assessments and surveys, maps, flood and weather measurements					
REMP Project manager	Facilitation	Facilitate production, development and dissemination	Establish library room and supervise library staff Support acquisition of library materials	Facilitation	Facilitation	Reports to the Co-ordinator REMP office administration and financial management
Chief Technical Advisor	Plan and implement projects and activities in the project villages	Planning and design of programs	Contribute materials, acquire and deposit reading materials	Planning and design of materials and programs	Planning and design of programs	REMP financial management Acquisition of project assets Oversee and supervise technical staff Reports to IUCN
Technical Advisor (socio-economics)	Organise socio-economic surveys				Planning, design & implementation	Reports to the CTA
District Planning Officer	Records and data assembly at national, regional and district levels		Contribute materials, acquire and deposit reading materials			Reports to the Co-ordinator
DALDO	Produce natural resource and socio-economic information	Play part in design and implementation	Submit relevant literature to library through the CTA/Project manager	Facilitate, design and implement	Facilitate design and implement	Reports to the Co-ordinator In charge of agriculture and livestock extension staff and programs at district, ward and village level
District Community Development Officer	Community participation in Natural Resource	Play part in design and implementation	Submit relevant literature to library through the CTA/ Project manager	Facilitate, design and implement	Facilitate design and implement	Reports to the Co-ordinator In charge of district extension staff and programs

District Education Officer			Submit relevant literature to library through the CTA/Project manager			Reports to the Co-ordinator In charge of education programs
District Medical Officer			Submit relevant literature to library through the CTA/Project manager			Reports to the Co-ordinator In charge of health programs

6 Analysis of users and their information needs

This section identifies information that is needed by each agent so that he/she can fulfil his/her functions adequately.

The management and administrative structure and the identified project functions at each level of activity and decision making imply information needs. For example field staff will require basic data for day-to-day action and project operation. Whereas a project management will, in addition, be interested in overall project achievements, deviations from project targets, special difficulties and problems that arise from project implementation. Table 6 presents a suggested format for identifying users and their information needs. A complete table can only be generated by the participation of all the users.

Table 6: Information users and their needs

Activity / Users	NR assessments surveys and plans	Awareness programs	Information centre	Training	Wise use pilot activities	Project Management
Steering Committee	Reports and proposals as approved by Full Council					
Full Council	Reports and proposals as approved by the EMT					
Environment Management Team	Reports and proposals submitted by district departments to the co-ordinator					
Co-ordinator, (DED)	Work plans and progress reports	Work plans and progress reports	Material and literature requirements	Work plans and progress reports	Work plans and progress reports	
Assistant co-ordinator and Secretary, (DLNREO)	Work plans and progress reports	Work plans and progress reports	Material and literature requirements	Work plans and progress reports	Work plans and progress reports	Project management changes
Project manager	Work plans and progress reports	Work plans and progress reports	Material and literature requirements	Work plans and progress reports	Work plans and progress reports	Project management changes
Chief Technical Advisor	Work plans and progress reports	Work plans and progress reports	Material and literature requirements	Work plans and progress reports	Work plans and progress reports	Project management changes
Technical Advisors	Work Plans and progress reports at district and village level	Work Plans and progress reports at district and village level	Material and literature requirements	Work Plans and progress reports at district and village level	Work Plans and progress reports at district and village level	Project management changes
District Planning Officer	➢ Feedback from EMT ➢ Reports and Publications from national, regional and district levels	➢ Feedback from EMT ➢ Reports and Publications from national, regional and district levels	Material and literature requirements and acquisitions	➢ Feedback from EMT ➢ Reports and Publications from national, regional and district levels	➢ Feedback from EMT ➢ Reports and Publications from national, regional and district levels	Project management changes
Other district departments and units	Collection of relevant data	Planned activities				
Village Government	Current and forthcoming interventions	Planned interventions	Focused literature			

7 Review of the existing information system

This section is a review of the existing flow of information within and between the institutions responsible for the project. As mentioned above the SC is the supreme policy making body for the project. Information flow is directed towards the SC through the EMT and the full council. Ideally, members of the EMT must present reports of their activities at the regular meetings of the committee that are conducted monthly. The Co-ordinator of the EMT presents a combined report to the SC. Other reports presented to the SC include the Project Manager's Report and the Chief Technical Advisor's report The SC meets twice a year.

In this report the existing sources of information are reviewed in order to answer the questions as posed below:

7.1 What data are available?

The project has undertaken a baseline study of the ten villages, which was the basis for the selection of the four pilot project villages. This data has been stored in Micro-Soft Access and provides a detailed description of each village. The project has a collection of reading materials related to the objectives of the project. These are kept in the project library.

7.2 What information is periodically collected?

    (i)   Consultancy reports. Provision is given for the hire of consultants to undertake various assignments for the project. A number of these have been undertaken so far such as socio-economic profiles,

    (ii)   Information that feeds into the annual work plans and annual reports

    (iii)   Pilot village activity reports

7.3 Are data categories relevant to the M&E system being proposed

The data above are relevant to the M&E system being proposed. The M&E system being proposed is cognisant of the project's efforts to generate relevant decision-making and planning information. It is proposed that, rather than overhauling the present system, it should be strengthened. Specification of additional data needs and creation of a conducive environment for the motivation of district staff to contribute to the project objectives is key to an efficient M&E system.

7.4 Which would be a cost effective data collection system

The M&E system being proposed will be institutionalised within the administrative system of the district council. This is expected to be less costly than establishing a separate M&E department.

7.5 Are existing data accurate/reliable

There are a number of data types available. Secondary data published by the government, department reports and data from special surveys. In the Tanzanian context data from government statistical publications and department reports is less reliable than data from special surveys. Secondary data must be used with caution, mainly being of use for an analysis of key issues and probable trends.

7.6 What are other sources of information that could be used or adapted

Although it has been pointed out that secondary data sources are less reliable these can be made use of by the identification of key issues underlying the data. It is recommended therefore that the project encourage collection of secondary data documents that will be kept in the library.

8 Additional information needs

This section outlines the expected detail and type of information required by users at each level of management. It must be indicated what users want to know about the project, purpose of the information, when and where the information is needed. This calls for a selection of appropriate monitoring indicators - indicators that are relevant locally, are valid, objective and simple

8.1 Monitoring socio-economic and environmental effects in Rufiji District.

The district council must take a proactive role to capture data using the present set-up, human capacity and resource constraints. The socio-economic baseline study provides a base for the future evaluation of changes in the socio-economic and environmental variables of the flood plain and delta.

Table 7 provides some variables to be monitored, indicators, and responsibilities within the district council and baseline data gaps that need to be filled. The gaps need to be filled and became part of the available database.

Table 7: Monitoring socio-economic and environmental effects in Rufiji district

ITEMS TO BE MONITORED	Indicators	Responsibility within district council	Baseline Data gaps
Access to education	• Total enrolment/school • Number of teachers • Number of schools/village/ward • Number pupils supposed to be enrolled versus the positions available/village • Class attendance • Student teacher ratio	District Education Officer	*Madrasa* enrolment, systematic data collection in education
Health and Nutrition	• Number of health centres • Distribution of major diseases • Number of safe water sources • Number of latrines/household/village • Number of mosquito nets /household • Distribution of major diseases • Calorie intake • Mortality rates by causative agent	District Medical/Health officers District Community Development Officers	**Calorie intake** Number of latrines Number of mosquito nets Systematic collection
Economic activities	• Changes in sources of income • Changes in gross value of output • Changes in asset ownership • Changes in yields/household (Including yields of natural resources) • Changes in expenditure patterns	District Planning Officer District Agricultural Officer District Community Development Officer District Natural Resources Officer	NIL Systematic collection
Population and ethnic characteristics	• Migration and out migration • Monitor population changes • Household sizes	District Planning Officer (set up population record/data in villages)	Village census data required Systematic collection
Dependence and access to resources	• Number of license given (Timber, hunting, fishing) • Increases in new farm size • Monitor changes in NR yields	District Natural Resources Officer District Agricultural Officer	Baseline data from District Natural Resources Officer required on licensing

	• Monitor changes in sources of fuel wood		
Attitude to the environment	• Collect data to measure attitude towards the environment (use questions in the socio-economic report)	District Natural Resources Officer District Community Development Officer	NIL
Environmental management initiatives and activities	• Monitor changes in tree planting • Number of village environmental committee/subcommittee • In-field soil and water conservation structures	District Natural Resources Officer	Data on infield soil and water conservation structures
Trading and marketing characteristics	• Monitor changes in the amount of goods sold by household (including environmental goods)	District Trade Officer	Systematic collection

In this report Table 8 gives a summary of the additional information needs. Once the table is completed it reveals whether and to what extent the data needs of the various users are distinct or overlapping. The table also assists in deciding on methods of data acquisition and types of studies required.

Table 8: Sources and methods of information collection, selected examples

Description (Activity)	Type of information required	Form of information or indicators	Purpose of information (what decisions)	Information collection			Freq. And method of reporting	User of information
				Source	Method	Frequency		
Socio-economic and cultural assessments for the flood plain and delta	-Population and migration patterns	Within and outside village	Understand stability of population	Village records	Village counts	Seasonally and annually	Village reports	Project and pilot villages
	- Consumption of timber and non-timber forest products	Quantities, types, license incomes,						
	-Mangrove exploitation data							
	-Asset ownership							
	-Food security and food production							
	-Fishing activities and output data							
	-Education status of the population							
	Health status of the population							

9   Design for data collection and processing

Data collection and processing should inevitably take a number of forms although it is necessary to devise methods of how particular kinds of data should be obtained. There are a number of methods and sources for data collection. These include:
- Reports (monthly, quarterly, annual or occasional)
- Permanent statistics systems
- Direct measurements (crop cutting, anthropomorphic measures, nutrition)
- Special surveys - interviews or questionnaires, open ended directive dialogues
- Permanent informants - resident investigators, local leaders, project staff
- Meetings - of staff, of beneficiaries, joint (staff, institutions, beneficiaries)

Decisions must be made on desirable quantity and quality of data and the cost implications for their collection. This report will advance the different kinds of data to be collected and will suggest data collection formats. However, each agent in the project will fine-tune their data collection formats to suit their specific fields. For example, data collection formats for agricultural data may not necessarily be the same as fish sector data or forestry and wildlife data.

9.1   Reports (monthly, quarterly, annual or occasional)

(i)   Reports by the PM, CTA, TAs, heads of relevant district departments that are eventually presented to the EMT meetings

(ii)   Specific reports made on pilot project villages and correspondence from them

(iii)   Reports made at ward and village level by leaders and technical staff such as school heads and medical personnel

(iv)   Reports from other projects and NGOs in the district and elsewhere collected by the library

The monthly, quarterly and annual reports can be provided in standardised formats as agreed upon by consultation with the district council.

9.2   Permanent statistics systems

Such statistics are usually compiled at the national level. Collection of published statistics of relevance to the project and the district economy is essential to inform district personnel on overall changes in the national economy and how this relates to the district and the project in particular. These include reports from the Bureau of Statistics and relevant ministry reports. These reports should be kept in the project library. The project manager and the Planning officer should collect the relevant reports and publications and place them in the library for reference.

9.3   Direct measurements/Data collection

These measurements will be made from pilot villages and/or the wider project area. The aim of these measurements is to monitor changes in certain important socio-economic indicators that can be useful for indicating project impact (see table 7 above). Appendix 1 gives examples of data collection forms and the responsible persons (summaries) with respect to demographic, education, health and natural resources.

9.4   Special surveys - interviews or questionnaires, open ended directive dialogues

These surveys are usually conducted by consultants and are carried out with a specific purpose. The project proposal has identified the type of surveys that will be carried out by the consultants at least in Phase I of this project. The M&E system once in place may suggest other special surveys.

9.5   Permanent informants - resident investigators, local leaders, project staff

There are a number of possibilities for using permanent informants. Resident investigators can be selected from village members who have received some form of training under the project. These can be supported to collect village level data and provide reports of relevance. Local leaders can also be supported to collect village data.

9.6   Meetings - of staff, of beneficiaries, joint (staff, institutions, beneficiaries)

Proceedings of meetings should always be documented and disseminated to relevant people.

10 Data analysis, reporting and feedback

This section assumes that the requirements of each user have been identified, sources and methods of data collection and recording known. There after a number of decisions need to be made as outlined below.

10.1 Who should analyse the raw data

Those who will report to the EMT should do data analysis. It is proposed therefore that all those who report to the EMT be responsible for organising data collection, storage and analysis. The project will explore the implications for this kind of data handling arrangements and on human resource capacity and facilities. There may for example be the need to upgrade computing skills of heads of departments and sections and consequently to supply computing facilities for data analysis and report preparation. The project may also wish to explore possibility to acquire and use other robust computer software packages apart from the data base software, Microsoft Access. Heads of departments could attend computer courses to learn some basic spreadsheet and statistical packages.

10.2 Who should report it, how and to whom

Information can be communicated orally (by telephone or at meetings, formally or informally), in written notes or reports, or through updating of wall charts, maps, etc. that remain permanently available for consultation. The guiding principle for reports is *"it is not enough to provide information, it must reach the right person, at the right time, in a way that he/she can make rapid use of it for decision making"*

Therefore reports should be:
- Standardised, so that the information received can easily be compared to previous reports and those of other sections of the project,
- Short (synthesised) and made shorter as they travel up through the management hierarchy;
- Easy and interesting to read.

They should also:
- Point out problems, exceptions, deviations from the plan, and special achievements, so that managers can "manage by exception" without having to check whether the activities for which their subordinates are responsible have been achieved as planned;
- Indicate data reliability, state known explanations of deviations, mention other causes of "exceptions"
- Suggest (and compare) alternative actions and decisions to be taken;
- And of course, be timely. This is in relation to scheduled meetings of the SC, EMT and the Full Council.

11 Organisation and plan of implementation of the M&E system

Table 9 is a summary of the advantages and disadvantages of M&E system organisation types. The project must decide which implementation plan is the most suitable for success. The project logic and administrative structure indicates that there is a streamlined information flow to the steering committee. This, at the same time allows close participation of district council staff. It is felt that the close participation by district staff is important for sustainability. As far as the consultants are concerned this aspect should be strengthened. As pointed out in Table 9, any particular approach will have advantages and disadvantages. The main reason recommending positioning of the M&E system within the present administrative structure rather than making M&E a separate department or unit is the fact that the project being donor driven will eventually be handed over to the district council. It is proper therefore that the integration process starts now.

It is notable also that some of the disadvantages of the proposed M&E system can be overcome through staff training and motivation.

Table 9: Advantages and disadvantages of alternative M&E systems

	Advantages	Disadvantages
Separate M&E unit implementing the system	• More likely to expose management or planning deficiencies • Guarantees higher degree of objectivity • Can collect, process, and analyse information for strategic planning decision	• Additional costs for M&E staff and equipment. • Recruitment difficulties aggravated by missing established career pattern • M&E staff's position in the management/administrative hierarchy unclear which may lead to conflicts • M&E results are easily disregarded by project management as they are not directly involved in M&E activities
M&E system implemented by project staff and district council	• Ensure that M&E system will be kept as simple as possible • Only information indeed useful and relevant for project management decisions is collected • Tendency that collected information is delivered to the right place in a form which guarantees its operational use	• Extra burden for project management staff in addition to their other duties • At best limited professional competence • Conflicts of competence and risks of lack of responsibilities-high probability that only information is corrected which is relevant for day to day decisions • Unfeasible in large and complex projects

12 Implementation and cost implications of the M&E system

The proposed M&E system inevitably has cost implications, which will have to be taken into, account. Before its adoption the activities of M&E system will have to be included in the budget and accounted for in the project plans. The additional costs envisaged as a result of introduction of the M&E system are summarised as follows:

- Documentation costs
- Additional equipment and facilities
- Data collection costs
- Training

A M&E system implies increased documentation in order to supply needed information to the EMT, Full Council and the SC. District departments may need to get project support to do that by giving them capacity to access stationery and secretarial services. Related to the above is the need to strengthen report production facilities and it is recommended that district staff related to the project be supplied with computing facilities for not only secretarial work but also for data analysis. The collection of additional data to feed into the M&E system may necessitate some increased costs to support the activity. Training of staff for example in the use of data storage and analysis equipment will also add to the costs of adopting an M&E system.

At an early stage the M&E system will be tested by assessing relevance, accuracy, usability and timeliness. It is recommended that a workshop be held as soon as possible to bring together agents and users. At the outset an M&E system must remain flexible just as is the case for the project plan. The M&E system will evolve during the project life to accommodate unplanned effects, external factors and lessons obtained from the M&E system itself.

13 Appendices

Appendix 1: Suggestions for project monitoring forms and reporting formats

A proposed list of monitoring forms
- Demographic data at village level collected annually

The form should be able to capture - total population dis-aggregated by gender, age, marital status etc. For example:

Demographic data collection for ……………….Village

Sub-village	Male adults		Female adults		Children 12-17 yrs	Children<12 yrs	Disabled and old		Total
	Married	Not married	Married	Not married			Male	Female	
Total									

- Education records from schools

Government formal education and *madrasa*
Number of children in school
Attendance records and dropouts
Student/teacher ratio
Each head teacher will be required to have the following example of forms to fill

Government formal school (monthly report)
School name ……………..Village ……………Ward……………..Division………..

Month	Average No. of Males pupils	Average No. of Females pupils	Average number of dropout	Student teacher ratio
January				

Informal schools *Madrasa* (Similar forms can be used when assessing adult education).

Village …………...Ward………...Division

Month/*Madrasa* name		Average No. of Males pupils	Average No. of Females pupils	Average number of dropout	Student teacher ratio
January	1				
	2				
	3				
February					

- Health statistics from village and district levels

Prevalent diseases
Mortality rates by causative agent
Incidences of malnutrition
Number of latrines per household
Number of mosquito nets per household

These information are to be collected by health centres located in project areas or serving project villages. The health centres are to provide monthly reports. However, at the health centre's level the data is to be collected on daily basis. The following are examples of the record sheets

Name of health centre/dispensary………..Village…………Ward…………..Division………..

Month	January	February	March etc.
Number of latrines per household			
Number of mosquito nets per household			
Average calorie intake			
Nutrition status for under five			
Mortality rates by causing agent			
Number of clean water sources per village			
Rank major diseases[1]			

[1] Use codes e.g. Malaria =1 and rank them separated by a coma, 3,2,1 etc.

- Records on exploitation of NR

Types of resources being exploited

Quantification of exploitation

- Village and district government incomes from NR

Income from licenses and fees. The DNREO will have a record on various revenues collected as a result of utilisation of NR. What is needed is separate recording and dis-aggregating data to specific NR products for example:

Type of NR product	Income from license	Income from fees	Other income sources	Total
Timber				
Logs				
Charcoal				
Fishing etc				
Total				

- Monitor environmental management initiatives: for example tree planting, monitor formation of village environmental committees and soil and water conservation initiatives. For instance in tree planting the following data can be collected:

Village name:……………….Season…………………

Tree species planted	Number	Number survived	Reasons for poor survival

Monitoring changes in the use of fuel wood will show an indication of dependence on natural resources for fuel wood

- Monitor economic activities: Questionnaires need to be designed/or use the already designed questionnaire of the socio-economic profile. These will be used to obtain data on changes in the sources of income (% distribution of respondents depending on a particular income source over time), changes in gross value of output, changes in asset ownership, changes in yields of various crops including natural resources.

Appendix 2: The documented M&E system of the project

Monitoring project activities and expected results
Monitoring project impact (i.e. achievement of project objectives)
Monitoring unplanned effects
Monitoring critical external factors

Table format for monitoring project activities, expected results, impact, unplanned effects and critical external factors

Description (Activity)	Type of information required	Form of information or indicators	Purpose of information (what decisions)	Information collection			Freq. And method of reporting	User of information
				Source	Method	Frequency		

A summary of the information system of the project

Table format to summarise the information system of the project

Source of information	Type of information required	Collection frequency	Monitoring component	Reporting Frequency	User (s)