Guidelines to integrate participatory forest management, land use planning and water management in local development.

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How to Use this Guide (A Guideline, Not an Order)

For ease of reading the Guideline has been divided into four chapters:

Chapter 1:.Introduction which gives the historical background and why the guidelines have been developed.

Chapter 2: Integration of the sectors in Natural Resources Management where an initial stepwise approach is suggested, existing organization structure is explained along with the proposal for an efficient institutional collaboration.

Chapter 3: Existing regulations, in which the natural resources actions in each existent sector single document (policies, acts and so on…) are narrated and summarized.

Chapter 4: Implementing the guidelines. In this chapter, a harmonized prioritization of actions in each sector description and the methods to implement some of the recommendations are given. These methods are derived from site visits, personal experience and documents review.

Notes:

(1) For those villages which are starting a process of natural resources management process from the beginning we recommend strongly revision of chapter 2.

(2) In the case of communities where committees are already formed, chapter 3 and 4 are the most relevant ones.

(3) Note that these are revised guidelines and are subject to continuous review as new lessons are learnt.

LIST OF ACRONYMS

DC – District Council

CNR – Chome Nature Reserve

CNRO – Chome Nature Reserve Office

EMA – Environmental Management Act

IFRM – Integrated Forest Resources Management

IWRM – Integrated Water Resources Management

JFM – Joint Forest Management

LUP – Land Use Plan

NGO – Non-Governmental Organisation

ONGAWA–Engineering for Human Development.

PFM – Participatory Forest Management

TFCG – Tanzania Forest Conservation Group

TFS – Tanzania Forest Service

VFMA –Village Forest Management Area

VG – Village Government

VLUPC – Village Land Use Planning Committee

VNRC –Village Nature Reserve Committee

WCA – Water Consumers Association

WRA – Water Resources Assessment

WRM – Water Resources Management

WUA – Water User Association

1. INTRODUCTION

1.1 Background

This document has been developed in the framework of the Action "Sustainable Management of Chome Nature Reserve in Same District" (Reference: EuropeAid/131346/L/ACT/TZ) performed in Same District, Kilimanjaro Region, Tanzania 2013-2017 by the main implementer, an international NGO known as ONGAWA-Engineering For Human Development. The partners of ONGAWA involved in the program were:

- Tanzanian Forest Conservation Group (TFCG);
- Same District Council ;
- Chome Nature Reserve Office (CNRO), and,
- Tanzania Forest Service (Ministry of Natural Resources and Tourism).

The program focused on five (5) results, amongst is the result number four (4) which stated that 'Policy and governance linkages between participatory forest management and integrated water management are analyzed, disseminated and integrated in participatory natural resources management in Same District'. In fulfillment of this result it was agreed that the guidelines to integrate Participatory Forest Management, Land Use Planning and Water Management in local development are developed, and disseminated.

In the framework of the same component, a previous policy brief, titled *"The neglected conflict in natural resources management at the grass root level (communities adjacent to Chome Nature Reserve)"*, was elaborated which it´s the precedent on which this document build (http://www.ongawa.org/wp-content/uploads/2016/12/Policy-Brief-revised-oct-16-DEF-1.pdf).

This document analyses the experience of the program which comprises the work in different sectors in the same communities and the lessons learnt extracted from it which might be applied in many similar initiatives nationwide. According to the policy brief, the existing underlying frameworks such as policy and laws in the sectors referred (land, forest and water) are good and have no serious contradiction at higher levels. Duties and responsibilities of each stakeholder are clearly defined and there is institution for conserving and managing a particular resource. The contradiction starts when these legal frameworks are translated into operative structure such as by laws and plans to be used in community level. This is because in the local or community level, where these guidelines and policy are translated and put into implementation, every sector implementer has its own way of doing things with different local sector guidelines, plans and by laws, although all the local implementers are sharing the same motives of resources conservation.

These joint guidelines contribute to the effort of ensuring that these policies and laws are practically implemented at lower level in the context of local development.

1.2 Problem statement

The management of natural resources (land, forest and water) is one of the most critical challenges facing developing countries today, Tanzania being among them. Despite the fact that Integrated Forest Resource Management (IFRM), Land Use Planning (LUP) and Integrated Water Resources Management (IWRM) provide new paradigms for development approaches, still there has been inadequate knowledge base in understanding the integration process at the catchment or community level in Tanzania.

The coordination and coherence among different sectors are already highlighted in the different sectorial policies:

i) forest policy statement (2002) insists on involvement of local communities and other stakeholders in water shed management and soil conservation that will be encouraged through joint management agreements;
ii) Land use planning act. (2007) insists on ensuring security and equity in access to land resources and provide for inter-sectoral co-ordination at all levels;
iii) Tanzanian water policy (2002) that insists on the use of integrated approach which addresses participatory, multi-sectoral, multidisciplinary river basin management, which, recognizes that water is a scarce resource and integrates the linkage between land use and water use.

But this coordination is not reflected in the reality and implementation has generally been lacking coordination in local context. A too narrow sectorial focus creates lack of information exchange and communication at village, district and sub national/basin levels, creating confusion and ultimately negative impacts for the natural resources conservation. This improper coordination of natural resources is contributing to new conflicts and obstructing the peaceful resolution of existing ones in the community level.

Among the problems of not coordinating natural resources sectors are conflict related to water uses in terms of quantity i.e. rationing and quality due to pollution, land ownership as well as over exploitation of forest resources. Additional challenges facing uncoordinated inter related sectors is overlapping of activities by actors or stakeholders that can be found to work in the same area, plan and do the same set of activities. These challenges necessitated the development of user friend, local and practical implementable guidelines.

This document try to strengthen community awareness on the integration of the water resources management, land and forest management, identify the areas of integration and prioritize the activities that should be done to enhance the natural resources management.

1.3 Rationally about the Guideline

The main purpose of this guideline is to give answer to the problems above described, providing guidance to community and other local stakeholders in all sectors mentioned on how they can integrate land use, forest, and water resource management in their planning and development processes, in a coordinated and integrated way. It aims specifically at:

- guiding Local Government Authorities and communities to adhere to land, water and natural resources polices' and laws as well as its management, avoiding overlapping and inefficiency;
- guiding development stakeholders and actors in the definition and implementation of natural resources management actions;
- identifying and providing guidelines on natural resources management issues of high concern to the community;
- identifying priority actions that can be integrated into the natural resources; and,
- acting as a self assessment tool for all natural resources management issues in local context.

2. INTEGRATING SECTORS UNDER NATURAL RESOURCES MANAGEMENT

2.1 Integrated Natural Resources Management approach

The guidelines use Integrated Natural Resources Management approach as orientation in its recommendations and priority actions, recognizing it´s global and integral way of looking at and considering resources which are closely inter-related. This approach targets are that communities living in poor local conditions understand and being able to manage their natural resources. It normally needs a multidisciplinary team to work with local stakeholders resources. The old top-down programs done by government assisted by stakeholders ended up with poor management and eventually environmental degradation. The Participatory programs involving more stakeholders but mostly localized is seemed to produce results even for small investment and single activity.

2.2 Advantages and successes of integrating natural resources sectors

- Help to improve coordination between different sectors and develop harmonized plans which will reduce overlapping of activities between the sectors.
- Help to avoid possible confusion to the community in implementation of these three sectors plans, strategies and by laws.
- Promote common understanding amongst stakeholders from different sectors.
- Enhance knowledge exchange, experience sharing and participatory learning for effective formulation and implementation of activities as well as regulations.

2.3 Risk and difficulties in integrating natural resources

- Manipulation of Acts, by laws and regulation may arise from the conflict of interest of implementation actors from different said sectors.
- There might be a failure to link the required by laws, and regulations that govern the implementation of the said sectors.
- There is a cost as it will have implication (time and money) and confusion in decision making as it involves more actors at the same time.

2.4 Mitigation process

- Awareness creation from the start.
- Mandatory meetings involving all sectors' committees for reaching consensus on how to solve the emerged challenges.
- Adoption of the stepwise harmonized 8 steps below suggested.

2.5 Step by step approach

The procedures have been presented in 8 basic steps that summarize the PFM, LUP or WRM processes. These steps do not always have to be followed in a progressive manner due to the iterative nature of the processes and they should be adapted to each specific situation and context. The key steps are:

- *Step 1: Identify community and natural resources*

Identify the natural resources that are to be managed. Make initial contact and create awareness within the main stakeholders from the area – those who may be using or benefiting from these resources. These stakeholders may be formally organised into a group, company or association, but equally they may simply be forest adjacent households or household within water sources catchment or land users. Form a local planning team and agree on tasks.

- *Step 2: Facilitate formation/strengthening of relevant community structures*

Provide capacity development support to the local level natural resources committees which should be formed according to the specific sectorial policy/act. In this step it will be also crucial to ensure the establishment of the different mechanisms of coordination among these entities.
In the case of existing local organization structures, this step would imply the facilitation of its revision and adaptation or modification, if needed.

- *Step 3: Assessing the area and community*

Conduct a socio-economic survey and participatory natural resource assessment in the proposed area, analyse the data and present the results to the stakeholders.

- *Step 4: Prepare and approve management plans.*

The plan must balance local needs with conservation measures and national priorities. It should be well harmonized plans in order to avoid confusions**.** Negotiate and agree the overriding objectives for the management of the respective sector. Discuss openly about the potential costs and benefits involved in developing the plan, identifying and negotiating around stakeholder expectations and assumptions, this should be done in line with elaboration of sectors' by-laws.

When required, and the implementation of land use, water resources and forest management plans at villages level are not developed yet, the land use plan should start as the prime sector incorporating necessary legal and institution arrangements of other sectors. The village Land Use Planning will act as a "hosting" and umbrella document, where the rest of the plans will be accommodated.

In those cases where plans have been already developed, the harmonization process of bylaws, strategies and working arrangements of the committees responsible in managing the respective three sectors should be facilitated. This will be achieved by the agreement of both committees to make changes to any contradicting by laws and strategies to have the same meaning, magnitude and effects. The institutions responsible for implementation at the community level should have a general agreement, including a MoU showing how they are going to work together in collaboration without confusing the beneficiary.

❖ *Step 5: Negotiating and signing management agreement.*

This is a legally binding document and must explicitly address the costs, benefits, expectations and assumptions of the parties involved as per existing legal framework. This agreement must be publicly presented and discussed in the local area.

❖ *Step 6: Implementing the plan*

Implementation begins using the management mechanisms which have been agreed upon. Regular progress and review meetings are held. Technical back-stopping support is likely to be required for local level.

❖ *Step 7: Review and Revision of the plan on the basis of experience*

At the end of each year of implementation the local level management committee (of each sector) together with the Community & other stakeholders, will review and report on progress vis-à-vis the objectives of the operational plan.

❖ *Step 8: Impact monitoring of natural resources:*

The initial experiences from the first areas will offer important lessons for subsequent applications of the approach in other areas. Outcomes from the initial natural resources management agreement areas should be documented and publicised through appropriate media channels. Based upon these experiences, it may be necessary to revise the process outlined here, with some of these revisions being specific to certain resources.

2.6 Organization structure: existing and proposed coordination

2.6.1 Existing structure

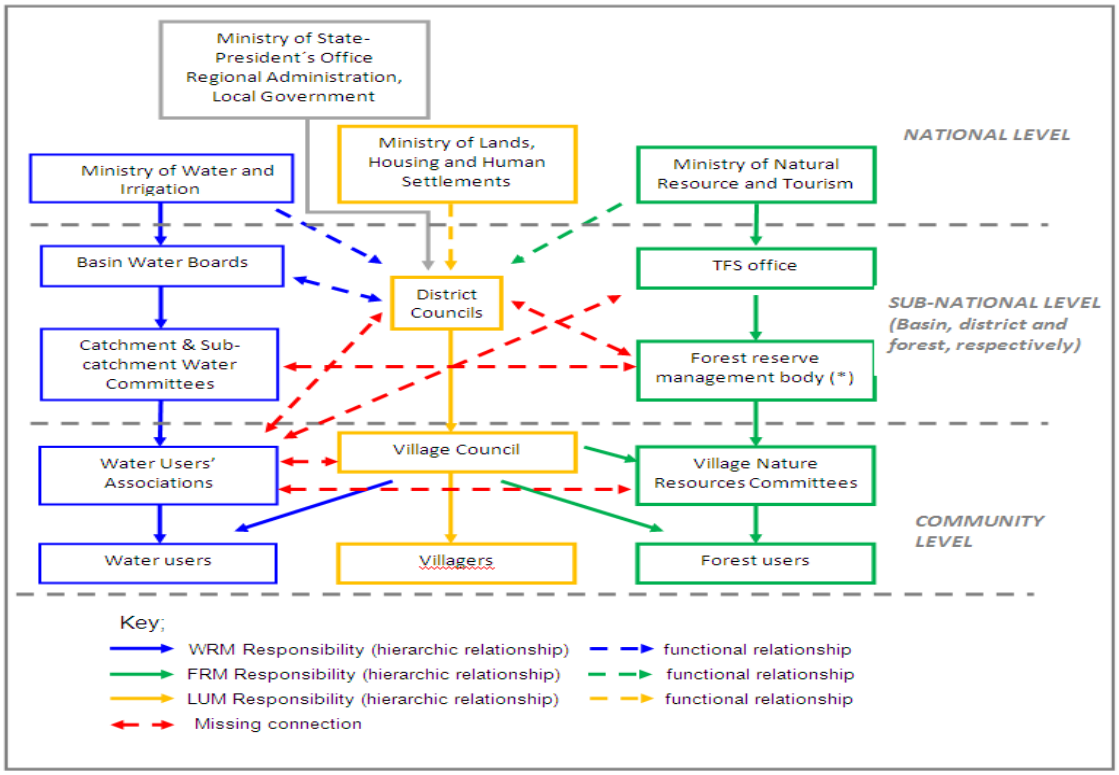
Natural resources development and management efforts are typically compartmentalized along different political and administrative lines and implementation remains at the sectorial level, as shown in the figure 1. Every sector organizes development and management of the resources considering a different unit:

- In the water sector, the unit considered is the basin and later catchments and sub-catchments.
- In forest sector, the management units are depending on the owner of the forest established, that will have different management structures. In the case of national and local government forest reserves, management depends on the Tanzania Forest Services (TFS), a semi-autonomous government Executive Agency, which appoints specific offices and extension services for managing each forest under its jurisdiction. At community level a Village Natural Resources Committee (VNRC) is normally formed, which is the principal body concerned with the management of the Village Forest Management Area (VFMA).
- In land sector, management is directly under Village Council, although in the process of development land used plans a specific committee is formed and trained (Village Land Use Planning, VLUPC).

2.6.2 Missing implementation lines and their proposed coordination

There are three different committees namely VNRC, WUA and VLUPC working within same areas and issues and sharing the same goal, but performing separately without knowing each other and without coordinating among different sectors operating within the communities. This lack of information sharing among different sectorial group (VLUPC, VNRC and WUAs) causes some contradictions in the final documents and local rules developed by each of them.

Figure 1: Institutional Framework for Water, Land and Forest Resources Management



Source –Adapted from policy document-ONGAWA-2016

The missing connection or red dotted line connection (indicated by doubled red arrows line) in figure 1 is referring to a situation where there is no proper established interconnection between two institutions. The situation suggests that there must be a formal exchange of information and communication between two institutions that are currently missing as follows:

- **Between District council and Basin boards**

It is among the obligations of the Basin Boards to integrate the district plans into their plans (Water Resources Act of 2009). The District Council is represented by water department; of which among its duty is to make sure that water sources are protected for its sustainability. This

is also the function of Basin Boards; to construct, guide, monitor and evaluate water sources. With all these overlapping of responsibilities, there is no proper communication and interconnection. The only remaining interaction is on issuing of water permits, where the Board is always asking District authority on whether there is an objection regarding on processing a water right. The other limited interaction has been observed on few seminars and workshops that are conducted by Basins in which District Councils are invited.

The proposal here is to adhere to water resources act of 2009, making sure that there is interchange of plans and budget of these organizations. The Basin boards must be invited to the DCC budget approval meetings of District council. The District Council must be supplied with a draft copy of basin budget especially on the issue of water resources management. With these practices, it is expected that the communication gap will be filled.

- **District Council and Water User Associations (WUA)**

Water users associations are recently established as per Tanzania water resources act of 2009. It has been practically observed that these entities are only interacting with the basins and catchments, not with District Councils. There is confusion with existing water consumer associations (WCA) that are directly under DC on their responsibilities, though it is clear that WCA is like the costumer of WUA, and its responsibility is framed to the management of a certain water system. The proposal for overpassing this break of communication is as follows:

-The WUA meeting must include at least one WCA members and a representative from the respective village.
-WUA must have a reporting responsibility to the DC, at least quarterly reports.

- **Village councils and Water User Associations**

The copy of the report from WUA recommended above, should be supplied to the village authority.

- **Water User Associations and Village Natural Resources Committee**

The proposed umbrella committee that is proposed in this document is likely to remove the gap existing between WUA and VNRC. Moreover, the copy of report from WUA to DC that is proposed to be given to the village authority, must also seen by VNRC.

- **District Council and Tanzania Forest Services office**

One of the functions of TFS is the collection of forestry and bee keeping revenue. The collection can be made easy by collaborating with DC as both collect this revenue using different law. District council has more experience in collecting the revenue and they have experienced accountants. By collaborating, the efficiency of the collection will be improved. It is proposed that TFS should invite the DC revenue collection staff and make sure that they are getting techniques of fund collection and apply in their areas.

The remaining misses of communication will automatically improve when the above proposals will be practically implemented. For example the Basin Boards are currently well connected

with Catchment and sub catchment committees. WUA is under these committees; therefore VNRC will be connected under umbrella committee. This means TFS and Forest management board will be interconnected automatically.

-Forest Management board are well connected with TFS, that is from the above proposal of interconnection of DC and TFS, they will be indirectly connected with District Council.

3 EXISTING REGULATIONS

The proposals narrated in this part can as well be found in the respective sector regulations, policies and laws. The aim of this section is to have single place where a summary of these documents from three sectors is given. From there in the following section, the harmonized priority actions are selected in order to have a starting point. This is because it might be not possible to tackle all issues at once therefore the prioritization methods is important.

3.1 Land–use plan actions

- Develop, adapt and implement land-use plan as narrated in the respective law and facilitate its propagation.
- There must be neither cultivation nor human settlement at all on slopes (EMA section 52) beyond 60%, hilltops and forest, instead there should be afforestation and the protection of existing vegetation.
- Encourage ecotourism in Hilltops, Hillsides, mountain and forests example by preserve the aesthetic and biological values of the rivers and streams as part of open space system. Where possible, provide public access to these open spaces and for these purposes
- Zone and protect all water catchments areas including Hilltops, Hill sides, mountains and Forests.
- Riparian areas should be identified and delineated and management of the riparian areas should be considered once they are identified - Village bylaws should specify activities that can be allowed in such areas such as bee keeping and indigenous vegetation.

3.2 Water resources actions

- Provide buffer zones of between 60m width measured from the highest water mark for rivers/ streams depending on the width, water volume, whether permanent or seasonal and the use of that water (WRA Section 34 and EMA Section 57).
- Develop, adapt and implement water resources management plan that shall rationalize the use of resource and mitigate on the negative impacts.
- Encourage use of rain water for irrigation.
- Prohibit water abstraction without a valid license.
- A wetland shall under no circumstance be drained and fish ponds constructed within a wetland should be constructed on the sloping sides of the wetland. It is unwise to site a fishpond low in a wetland, as seasonal flooding can cause loss of stock.
- It must be ensured that all areas upstream and around a wetland are properly managed to prevent wetland degradation. Growth of wetland plants should be allowed at the edges of riverbanks.

3.3 Forest management actions

- Promote understanding of laws especially offences and penalties in such a way that more people in the community are aware of various offences not limited to:-
  -being found with harvested trees/timber in the house/house yard
  -local transport of timber, limitation and consequences
  -A car owner responsibility as regard to timber transportation
  -Cultivating/ any human activity very close to rivers and streams and in steep slopes
  -Illegal harvest.
- Facilitate tree-planting habits by establishing mandatory scheduled periods of tree planting for all; it should also appear in the bylaws of the villages.
- Improve by making proper follow-up, the replacement rule, where any permit of individual tree harvest is accompanied by an order to plant five times number of tree harvested.
- Promotion of appropriate species selection for site planting.
- Prevent the burning of grass and any other vegetation in areas of intensive agriculture or on steep slopes and develop and improve firebreaks and access roads.
- Rehabilitate degraded areas through re-afforestation and enclosure for natural regeneration.
- Promote the use of charcoal kiln as an efficient and comparatively clean mechanism for conversion of wood into charcoal.
- Promote cultural practices that enhance protection of natural resources example Ndiva nkundu at Chome Forest.
- Protect hills, mountains and forests through identification, mapping, inventory, easement and gazettement as per section 58 (1&2) of EMA.
- Giving support to researchers from institutions and provide conducive environment and support as per section 105 of Forest act. No 15 of 2002.
- Facilitate the special uniform and local weapon for committee members that are used to undertake patrols in the forest and ask for percentage of funds as a return regarding penalties paid as well as cost benefit mechanism as per JFM agreement.

4 MPLEMENTING THE GUIDELINES

4.1 Harmonized priority actions

A prioritization of the main actions described in the section 3 is done below, taking into consideration a harmonized approach of the 3 main involved natural sectors. Actions have been identified as those ones that, although tackling directly only one specific sector, might have a significant impact in the others and which might contribute further in strengthening a better integration and coordination of all of them. The description of each action is accompanied with an example found in communities surrounding Chome Nature Reserve (CNR).

The priority actions proposed are:

- Encourage ecotourism in Hilltops, Hillsides, mountain and forests

> Experience from CNR
> *The geographical features of such a look in Same District and many parts of Tanzania are not given its due weight in the field of tourism.*

- Regulate agricultural activities to accommodate the land and natural resources conservation.

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> Experience from CNR
> *The steep slope cultivation, small scale farm in wetlands and agricultural activities along the rivers can be observed throughout the area*

- Establish disaster preparedness in forest fires and forest pests and prevent the burning of grass and any other vegetation in areas of intensive agriculture or on steep slopes

> Experience from CNR
> *Currently no special activity that is done to prevent fire occurrence or fire spreading although it is agreed that fire occurs at least once a year.*

- Facilitate tree-planting habits by establishing mandatory scheduled periods of tree planting for all; it should also appear in the bylaws of the villages.

> *Events such as New Year and environmental day that are used for tree-planting in urban areas are not the same in rural areas, tree planting has been left as an individual person business, especially those with tree farms.*

- Delineate area for building material extraction, the random use of stones quarry and aggregates especially in steep sloping areas should be prohibited.

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Experience from CNR *No special area has been allocated for obtaining local materials*

- Creation of awareness raising to public on Land, Water resources, Forest Act and regulations

Experience from CNR *The existing VLUP should be shared widely to all respective stakeholders. Planning should also involve representation of some of the stakeholders from other existing committees.* *There should be an action plan which addresses and intends to accomplish 10m phases to reach 60m.*

4.2 General priority actions

Beyond the previous prioritized actions, this part will try to find out possible ways in which integration and coordination in different natural resources management might be achieved smoothly without provoking any relevant tension among the communities and its different committees. Although they are applicable in any case, are strongly recommended in those cases where management plans and committees are already in place. Implementation of these general actions will be a positive step forward in ensuring that Local Government Authorities achieve sustainable land use planning, forest management in line with water resources management.

4.2.1 Formation of an umbrella committee

This is an important start up action that will enable integration and coherence of management of different natural resources. An umbrella committee should be formed at every village (working under VG) incorporating leaders from the said committees (VLUPC, VNRC and WUA representatives). It will be the platform to meet periodically to discuss various issues concerning their respective sectors including their future plans and strategies as well as resolving any conflicts that may have risen between the committees in the course of their activity implementation. The bylaws should be revisited for this purpose.

The main role of the committee is to coordinate, and supervise natural resources use and management within the village. It should have a scheduled calendar of meetings not less than twice a year.

4.2.2 Mainstreaming natural resources agenda in the existing planned activities and events

This is cost effective and time saving means of practical implementation of these guidelines. It involves the action of inserting an agenda in the planned village or ward mandatory meetings. The advantages of this method is that repetitive nature of the meetings make the community aroused, awareness is maintained and more people are involved.

The public holidays and national events like water day, environmental day (EMA 2004 S.10,1-2), New Year and natural resources day may be effectively used by incorporating the activities that are recommended by this guideline.

For ensuring informed discussion in these meetings is crucial to promote the presence of community bylaws hardcopies in village offices and its reading and dissemination. Generally, these bylaws consist of more than 80% of issues that relate to water, land and natural resources sectors.

4.2.3 Facilitate the development of communication materials

The common use of public awareness posters, leaflets and other means are to be insisted. These can be well achieved in collaboration with external support, NGO or organizations that are willing to support the action or are current working in the related field. The committees are responsible to prepare and use the existing design or locally designing the leaflets /posters that suit an area. Audiovisual materials (videos, interviews,…) might have a huge impact and target a wide audience.

4.2.4 Capacity building to staff and facilities

All different stakeholders and actor involved in natural resources management must have a proper knowledge and understanding of their roles and responsibilities, but also of the others involved. It´s especially highlighted:

- WUA offices should further be capacitated in implementing Basin Water Office mandates eg. Provided with forms, training on required procedures.
- Support should be given on constructing and establishing land registry offices. Customary ownership processes should be accomplished.
- Capacity building should be given to respective stakeholders (Ref doc 6.4).

4.2.5 Strengthen institutional communication

Communication may be strengthened by breaking the existing barriers of communication observed. The communication gaps observed in figure 1 and narrated in 2.6.2 are to be filled by establishing the reporting obligations and in cooperating the plans and actions of one institution with the plan and actions of other institution.

4.2.6 Close monitoring and supervision.

In order to adapt progressively the coordination mechanisms and to monitor the advances in natural resources management and conservation this action is key to be considered.
For example, it´s required to introduce proper monitoring systems to quantify the amount of firewood collected per year as a basis for future development plans as well as promote energy efficient technology stoves.

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Appendix i

Introduction to PFM, LUP&WRM

Definitions and the importance of PFM.
What is PFM?
Participatory Forest Management (PFM) is a general term describing community involvement in the management of forests.
Significance of PFM are to promoted awareness about forest, to capacitated locals to form new institutional arrangement that increased their participation in forest management , and to contributed towards social equity in terms of gender and minority ethnic groups. When accompanied with complementary non-forest based livelihood activities, PFM helped to diversify income sources, increase household income level, and build household assets.
Key Concepts in PFM
Community Based Forest Management (CBFM) is one kind ofPFM approach that takes place on village land, on forests that are owned or managed by the
Village Council on behalf of the Village Assembly and leads to the establishment of Village Land Forest Reserves (VLFR), Community Forest Reserves (CFR) or Private Forest Reserves (PFR).

Definitions and the importance of LUP.
What is LUP?
is the general term used for a branch of urban planning encompassing various disciplines which seek to order and regulate land use in an efficient and ethical way, thus preventing land-use conflicts.
Significance of LUP
Significance of land-use planning is to further the welfare of people and their communities by creating convenient, equitable, healthful, efficient, and attractive environments for present and future generations.

Definitions and the importance of WRM.
What is WRM?
Water resource management is the activity of planning, developing, distributing and managing the optimum use of water resources.
Significance of WRM
The objective of the Water Resources Management is to develop a comprehensive framework for promoting the optimal, sustainable and equitable development and use of water resources for the benefit of all Tanzanians, based on a clear set of guiding principles (water policy 2002)
Key Concepts in WRM
Integrated water resource management (IWRM) is an approach that seeks to reach an appropriate balance between the need to protect and sustain water resources on the one hand, and the need to develop and use them on the other
An Integrated Water Resource Management Plan (IWRMP) is a plan aimed at dealing with the socio-economic, technical, financial, institutional and environmental issues as they pertain to management of the water resource.