

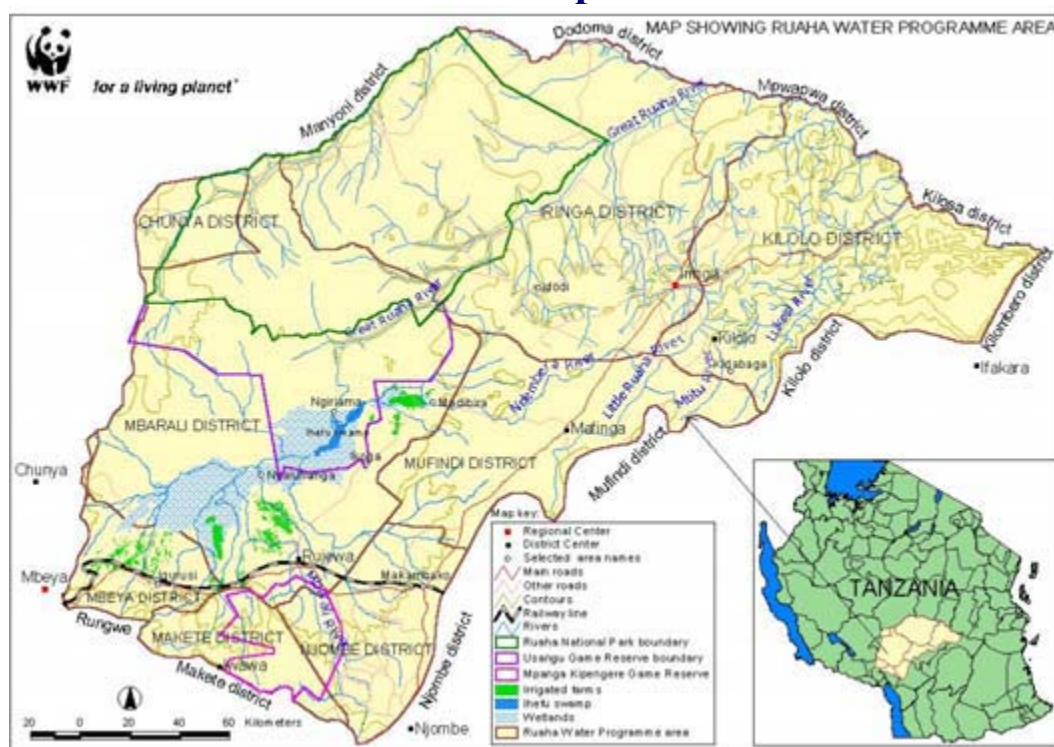


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PROCESSES, EXPERIENCES AND GUIDELINES FOR THE FORMATION OF SUB-CATCHMENT WATER USERS ASSOCIATIONS IN THE GREAT RUAHA RIVER CATCHMENT AREA – IRINGA AND MBEYA REGIONS, TANZANIA

Final Report



**Submitted on 28th August 2009 to
WWF Tanzania Country Office – Ruaha Water Programme**

By

**Dr. Kim Abel Kayunze
Sokoine University of Agriculture
P. O. Box 3024, Morogoro, Tanzania
Tel.: +255 754 496960, E-mail: kayunze@suanet.ac.tz**

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EXECUTIVE SUMMARY

1. Background information

- The World Wide Fund for Nature-Tanzania Country Office (WWF-TCO), with financial support from the European Union (EU), is implementing a Ruaha Water Programme with the aim to ensure that by 2010 the people of the Great Ruaha River Catchment Area (GRRCA) are planning, managing and utilising their water and related natural resources in sustainable ways, alleviating poverty and improving livelihoods.
- Accordingly, Water Users Associations (WUAs) have been established to empower communities to play more active roles in managing and using the water resources in sustainable ways through containing the problems related to the use of water resources. The problems include decline in water flow in rivers, destruction of catchment areas, cultivation up to river banks, diverting water without permission, and presence of water unfriendly plants at river sources, just to name a few.
- However, there were no clear guidelines on how to form the WUAs, albeit the basis was the National Water Policy (NAWAPO) of 2002 statements including the ones that water resources management has to be participatory and that water staff will have the mandate to form water users associations where deemed necessary.
- Therefore, WWF-TCO saw a need to document the processes through which the WUAs were formed, with intent to improve the steps of WUA formation in future. Therefore, it commissioned this study to be done, with the overall objective to document WWF's and other stakeholders'/actors' experiences in Sub-catchment Water Users Associations formation and develop guidelines that could be used to guide future formation of Sub-catchment WUAs in the GRRCA and in Tanzania at large.

2. Methodology

- Four key informant interview guides were used to collect data from Rufiji Basin Water Office (rs) (RBWO), District Facilitation Team (DFT) members, an officer who trained the DFT members, and some village leaders. Moreover, a Focus Group Discussion guide was used to collect data from WUA leaders and members of 9 sub-catchment WUAs and 3 apex WUAs in 6 districts of Iringa, Mufindi, Njombe, Mbarali, Makete and Mbeya in June/July 2009.
- Each of the 5 instruments contained an index scale with 8 items to determine the extent to which the processes of WUA formation had been participatory. A hundred and six (106) people were involved, and every one had his/her views recorded in the index scale. The other items in the instruments were discussed with the interviewees, including seeking their views on problems faced during formation of WUAs and lessons learnt from the processes of WUA formation.
- Quantitative data collected using the index scale were analysed using the Statistical Package for Social Sciences (SPSS) to determine descriptive statistics. Also inferential analysis was done using t-test and one-way ANOVA to compare the number of points scored on the items implying the extent to which the processes of WUA formation were participatory or not.

3. Findings of the Study

- It was found that WUAs are common in many African, Asian, Latin American, and European countries and that the steps used to form them in other countries are not much different from those that are being used in the GRRCA.
- It was also found that the processes used to form WUAs in the GRRCA had 9 main steps, which were followed with some minor discrepancies. The steps were: (1) Awareness creation, (b) Choosing villagers' representatives, (3) Stakeholder analysis, (4) Participatory Rural Appraisal (PRA) undertaking, (5) PRA outputs presentation, (6) Choosing WUA leaders, (7) Preparation of a draft constitution, (8) Draft constitution presentation, and (9) Registration of the constitution.
- The discrepancies included the processes being dominated by a village-based, a river-based, or a water user scheme-based approach; choosing different numbers of WUA leaders; and WUA leaders and members being trained for 3 to 15 days in various places. All the same, the processes of WUA formation were found to have been participatory for 87%, based on the index scale used. The processes of WUA formation was said to have had some shortfalls including poor representation of local government leaders in the processes, delay in registration of WUAs, low involvement of the youth, and low consideration of women for WUA leadership positions.
- Some of the main problems which affected the processes of WUA formation were decrease in the number of DFT who had been trained to facilitate in the processes, some villagers not attending meetings in which WUAs were formed, some village leaders delaying to organise meetings, slow learning ability of some community members selected to attend seminars through which WUAs were formed, elections of WUA leaders being less democratic in some places, and reluctance of villagers to recognize technical information on plans recommended for restoration of water flow.
- A number of lessons were learnt by community members from the processes of WUA formation including the facts that the processes: enabled communities to analyse water use problems and come up with fruitful ideas and plans of activities to contain the problems; the community members realised that they were doing a lot of environment destruction without knowing; water is a scarce resource which ought to be cared for and used economically, conflicts over water use could be prevented through having WUAs coordinating equitable sharing of the water resources; and lust for positions of leadership was among the factors that constrained WUA formation, just to name a few.
- Some changes had taken place in WUA formation, particularly between the 1990s and the 2000s. The main changes were that WUAs in the past were less linked to policies, unlike these days; they were also not adopting the concept of integrated water resources management (IWRM), unlike these days; and the village-based approach to WUA formation was dominant unlike now when the water catchment-based approach dominates.
- It was also found that WUAs had started giving positive results in restoration of water flow, but that there were some factors threatening their sustainability, including low funding, reluctance of some community members to adopt the specifications for management of water resources, while others were undermining the work of WUA leaders by threatening to harm them if they went on insisting on stopping cultivation at water sources and in valley bottoms. There were also double standards in application of WUA by-laws and wrangling over transport facilities donated by WWF.

4. Conclusion

Based on field work and the results of the study it is concluded, among others, that the processes used to form WUAs in the GRRCA were well done since they were participatory to a very large extent and because the steps used were followed everywhere, albeit with some minor discrepancies. Some of the main factors which affected the processes of WUA formation, like reluctance of some villagers to practise recommended practices could be solved and prevented, through massive education and charging commensurate fines for violation of the by-laws. Although some community members are still reluctant to adopt the recommended practices, there is a good number of them who value them, especially after realising that the WUAs are effective in restoration of water flow. However, the chances that WUAs will be sustainable should not be taken for granted.

5. Recommendations

Among other recommendations, the main recommendation for formation of WUAs in future is a combination of the village-based and the river catchment-based approaches, whereby 11 steps to form a WUA are recommended in the chronological order given below:

- (1) Description of the catchment or sub-catchment area with its boundaries where a WUA is to be formed;
- (2) Making appointments with village leaders for holding awareness meetings with village council members and villagers;
- (3) Awareness creation and choosing representatives of sub-villages, villages, and water users groups/ schemes;
- (4) Stakeholder analysis, paying much attention to various water users;
- (5) Participatory Rural Appraisal (PRA) focusing more on natural resources and water resources;
- (6) PRA outputs presentation in all villagers meetings to explain to them about the resources and environmental issues assessed, problem rankings, and prioritised interventions;
- (7) Choosing village WUA leaders;
- (8) Choosing catchment or sub-catchment WUA leaders from village level WUA leaders by secret ballot;
- (9) Preparation of a draft constitution;
- (10) Draft constitution presentation to villagers in all villagers meetings; and
- (11) Sending the draft constitution to the RBWO for registration through the District Director's Office.

ACKNOWLEDGEMENTS

A number of organisations and people were behind the coming out of this report. Therefore, they are thanked for having enabled the consultant to come out with it. First and foremost, the Worldwide Fund for Nature Conservation-Tanzania Country Office (WWF-TCO) is thanked for having provided the consultant with the opportunity to undertake the study and funded it. The Rufiji Basin Water Offices in Iringa and Rujewa are thanked for having provided the researcher with vital information that was needed for the study. Moreover, the District Executive Directors of Iringa, Mufindi, Njombe, Mbarali, Makete, and Mbeya where data for this study were collected are thanked for having provided the consultant with one DFT member in every district who accompanied the consultant in the districts. Songwe River Trans-boundary Catchment Management Project is thanked for having availed Mr. Leodgard Haule to be one of the key informants for the study. So, he is also thanked for having given the consultant some vital information for the study.

WWF-TCO staff members are thanked for having created conducive environments that enhanced the success of the study, particularly Mr. Amos Mugisha, Project Administrator for the agreement for the study, who saw to it that funds for the study were timely available. WWF Iringa Office staff members are thanked for various roles they played in making the study successful. Mr. Petro Masolwa, the Project Supervisor for this study, is thanked for having briefed the consultant on how WUAs were formed and given him some reference materials. Ms. Mwamini Masanja is thanked for having accompanied the consultant in all the six districts where data were collected and introduced him to various offices, leaders and WUA members during data collection. Mr. John Mwasampeta and Mr. Moremi Tolage, drivers with WWF-Iringa Office, are thanked for having worked well with the consultant during the study that gave rise to this report. RBWO Officers in Iringa (Mr. Willie Mwaruvanda, Ms. Grace Chitanda, and Ms. Magreth Dionis) and RBWO Officers at Rujewa (Idris A. Msuya and John Makonyole) who were key informants are thanked for having provided the consultant with vital information for the study. DFT members of Iringa District (Elisabeth Ngassa and Georgina Kazinja), Mufindi District (Augustine Shirima and Nassib Mmbagga), Njombe District (Norbert Kinabo and Michael Haule), Mbarali District (Jophia J. Nzobonaliba and Anyubatile Seme), Makete District (Adriano Nsemwa), and Mbeya District (Bevarine T. Mgoda) are thanked for having provided the consultant with vital information for this report.

Lastly, but not least, all the village leaders contacted as key informants, and WUA leaders and members who were focus group discussants for this study are very much thanked for having given the consultant important information for this report. Ms. Romana Kibua of Sokoine University of Agriculture is thanked for having typed the first draft of the report.



ABBREVIATIONS

ANOVA	Analysis of Variance
BAWAMANDE	<i>Baraza la Watumia Maji Mto Ndembera</i> (Ndembera Water Council)
BWM-BDM	<i>Baraza la Watumia Maji Bonde Dogo la Mkoji</i> (Mkoji Sub-Catchment Water Users Council)
CMA	Catchment Mnagement Agency
DFT	District Facilitation Team
EU	European Union
GRRCA	Great Ruaha River Catchment Area
JUBODOMLYA	<i>Jumuiya ya Watumia Maji Bonde Dogo la Mto Lyandembela Ifunda</i> (Lyandembela River Sub-Catchment Water Users Association)
JUWABONDECHI	<i>Jumuiya ya Watumia Maji Bonde Dogo la Lyandembela Chini</i> (Lower Lyandmbela River Water Users Association)
JUWAMA	<i>Jumuiya ya Watumia Maji Matamba</i> (Matamba Water Users Association)
JUWAMACHI	<i>Jumuiya ya Watumia Maji Chimala Chini</i> (Lower Chimala Water Users Association)
LGAs	Local Government Authorities
MACHIREMA	Matamba and Chimala Resources Management Association
MBUMTILU	<i>Jumuiya ya Watumia Maji Bonde Dogo la Mito Mbukwa, Mtitafu na Lumbidzi</i> (Mbukwa, Mtitafu and Lumbidzi Rivers Wate Users Association)
MUWABOM	<i>Muungano wa Watuma Maji Bonde Dogo la Mto Mpolo</i> (Mpolo River Water Users Association)
MUWAMABOBA	<i>Muungano wa Watumia Maji Bonde Dogo la Mto Balali</i> (Balali River Water Users Association)
MWAMAHA	<i>Muungano wa Watumia Maji Bonde Dogo la Mto Halali</i> (Halali River Sub-Catchment Water Users Association)
MWAMAMSWI	<i>Muungano wa Watumia Maji Mto Mswiswi</i> (Mswiswi River Water Users Association)
NAWAPO	National Water Policy
NGOs	Non-Governmental Organisations
NSGRP	National Strategy for Growth and Reduction of Poverty
O & OD	Opportunities and Obstacles to Development
PO – LGRA	President’s Office – Local Government and Regional Administration
PRA	Participatory Rural Appraisal
PWRA	Participatory Water Resources Assessment
RBWO	Rufiji Basin Water Office or Officer
RSA	Republic of South Africa
URT	United Republic of Tanzania
VEOs	Village Executive Officers
WEOs	Ward Executive Officers
WUA	Water Users Association
WWF-TCO	World Wide Fund for Nature-Tanzania Country Office

1. BACKGROUND INFORMATION AND TERMS OF REFERENCE

1.1 Background Information on Ruaha Water Programme

The World Wide Fund for Nature-Tanzania Country Office (WWF-TCO), with financial support from the European Union (EU), is implementing a Ruaha Water Programme with the aim to ensure that by 2010 the people of the Great Ruaha River Catchment Area (GRRCA) are planning, managing and utilising their water and related natural resources in sustainable ways, alleviating poverty and improving livelihoods. The programme implements its activities by supporting integrated capacity building and action at community, district, catchment and national levels by 2010. As part of efforts to ensure the above aim is attained, water users associations (WUAs) have been formed in the GRRCA to empower all stakeholders in water use to manage the water resources, manage conflicts on water use, and use the water resources in sustainable ways.

In the GRRCA more than ten Sub-Catchment Water Users Associations (WUAs) have been established. The establishment aims at empowering community members who are the main stakeholders in water use in the area to play more active roles in managing the water resources, with a view to ensuring that the above aim of the World Wide Fund for Nature-Tanzania Country Office (WWF-TCO) is attained. The programme aims also at achieving sustainable water resources management by supporting integrated capacity building and action at community, district, catchment and national levels by 2010.

In order to attain the above aim, WWF is supporting stakeholders to generate scientific data/information and experience on sustainable water resources management which will be applied in the preparation and implementation of an Integrated River Basin Management Plan (IRBM) for the wider Rufiji Basin which includes the GRRCA. Indicators of success for the implementation of IRBM plan in the GRRCA and Rufiji Basin at large will be the restoration of year round flows of the Great Ruaha River by 2010, reduced water use conflicts and reduced proportion of rural population in the catchment living below the basic needs poverty line.

Management of water resources as well as sustainable use of the same is given emphasis in the National Water Policy (NAWAPO) since the first NAWAPO of 1991. The NAWAPO of 2002 also gives such emphasis. For example, one of the main policy principles in water resources management is: “Water management and development should be based on a participatory approach, involving users, planners and policy makers” (URT, 2002). Therefore, in line with this policy statement, various actors including WWF have supported the formation and capacity building of Water Users Associations (WUAs) in the GRRCA as a tool for improving governance and management of water resources at the local level.

1.2 Background Information on Formation of Water Users Associations in the GRRCA

Escalating water scarcity in the GRRCA has brought a need for better coordination of water uses among communities. This is because communities play a major role in the water sector as they are the primary users, guardians and managers of water resources. The main problems that prompted the formation of WUAs in the GRRCA were: (a) decline in water flow in rivers; (b) destruction of catchment areas; (c) cultivation up to river banks; (d) contamination of river water, including bathing and washing in rivers; (e) diverting water without permission; (f) leaving water being wasted in bush after diverting it, instead of taking it back to the river; (g) presence of water



unfriendly plants at river sources, including *mikaratusi* (Singular *mkaratusi* in Kiswahili) (*Eucalyptus spp*) and bamboo; and (h) quarrels among irrigators and other users of water, e.g. crop producers and livestock keepers.

Based on the National Water Policy of Tanzania (URT, 2002), which stipulates that water managers will have the mandate to establish WUAs where deemed necessary in order to contain problems similar to the ones outlined above, RBWO and WWF have collaborated to form WUAs at both the sub-catchment and community levels. However, there were no clear guidelines on how to form the WUAs; albeit the basis was the above policy statement. Therefore, a need arose to document the processes used to form the WUAs, guidelines used, and experiences and lessons learnt from the processes so that they could be clear to various stakeholders. Accordingly, WWF-TCO hired a consultant to do the documentation. The overall objective of the consultancy was to document WWF's and other stakeholders'/actors' experiences in Sub-catchment Water Users Associations formation and develop guidelines that could be used to guide future formation of Sub-catchment WUAs in the GRRCA and in Tanzania at large.

1.3 Terms of Reference and Deliverables

The terms of reference stipulated specific tasks which were to be done for the consultancy. There is no need of duplicating them here since they are given verbatim in Appendix 1 as they were received from WWF-TCO. Based on the terms of reference, the consultant was required to deliver the following outputs:

1. A report documenting the findings, information and data captured during tasks 1 to 7 stipulated in the terms of reference.
2. Detailed guidelines on the process that should be used to guide future formation of Sub-catchment WUAs.
3. A presentation of findings in a stakeholders meeting
4. A 1-2 pages summary on the key steps in the process and the key lessons learned.

2. METHODOLOGY

In order to ensure the activities stipulated in the terms of reference (Appendix 1) are accomplished and the outputs stated above are realized, the consultant undertook the procedures described in this section.

2.1. Assessment of WUA Formation Experiences in Other Parts of the World

In order to accomplish the first activity, which was to "Document processes used in formation of WUA (or equivalent institutions) in other parts of the world and lessons learned", desktop review of literature from various documents possessed by WWF and from the Internet were reviewed. In this case, factors to consider in forming a WUA and procedures of how WUAs are formed in other countries as well as how they were formed in the GRRCA were reviewed critically. Since, according to the terms of reference, literature review was among the specific tasks of the consultant, the processes used in other parts of the world are presented in the findings.

2.2 Field Work

In order to accomplish activities 2 to 6 as stipulated in the terms of reference, field work was undertaken in 6 districts seen in Table 1, among 8 districts where Ruaha Water Programme works, to collect and analyze information from which to base the accomplishment of activities 7 and 8, which were to "Document/summarise the lessons that have been learnt by drawing on the



WUA formation process summaries, and describe the changes that have taken place in the Sub-catchment WUAs formation processes and the reasons thereof” (Activity 7) and “Develop guidelines, based on the findings of tasks 1 to 7 above, on the process that should be followed during future formation of Sub-catchment WUAs and the rationale/importance of each step in the process” (Activity 8).

2.2.1 Water users associations reviewed

Six districts out of eight were selected purposefully based on having sub-catchment WUAs. Two of the eight districts of the GRRCA (Chunya and Kilolo) were not selected because they lacked sub-catchment WUAs, and they have smaller catchments. The sub-catchment areas that were selected for this study are listed in Table 1.

Table 1: Water users associations (WUAs) reviewed

S N	WUA	Date of formation	District	Number of villages sharing the WUA	Number of leaders	
					M	F
1.	Halali SC*	Formed in 2001; Reviewed in October 2003	Njombe	24	3	1
2.	Mpando ¹ SC	NRA** August 2004	Njombe	20	1	2
3.	Lyandembela SC	23 rd November 2004	Mufindi	14	3	2
4.	Balali SC	NRA May 2005	Njombe	6	2	3
5.	Mswiswi SC	22 nd April 2006	Mbarali	7	4	1
6.	Mkewe SC	NRA October 2006	Njombe	8	3	1
7.	Ndembera SC	NRA October 2006	Iringa	19	4	1
8.	MBUMTILU SC	28 th September 2007	Njombe	17	2	3
9.	Mpolo SC	10 th November 2008	Mbarali	4	4	1
10.	Mkoji Apex	23 rd August 2003	Mbeya	88	2	2
11.	MACHIREMA Apex	21 st November 2007	Mbarali & Makete	14	3	2
12.	Ndembera Apex	28 th February 2009	Iringa, Mufindi & Mbarali	42	3	2
Total				263	35	22
%				-	61	39

* SC means sub-catchment

** NRA means the date is not readily available

2.2.2 Persons contacted

One hundred and six (106) people were interviewed and/or involved in focus group discussions for this study. Their names are given in Appendix 3. The people were in two groups: key informants and focus group discussants. The focus group discussants comprised leaders and members of water users associations. The key informants were Rufiji Basin Officers based in Iringa Municipality and at Rujewa; District Facilitation Team members from Iringa, Mufindi, Njombe, Mbarali, Makete, and Mbeya Districts; some village leaders; and the trainer of District Facilitation Team members. The trainer was Mr. Leodgar Haule who, professionally, is a Community and Human Resources Development Officer and formerly was working with the Ministry of Water and Minerals Headquarters and knew a lot about the national water policy and WUAs. Therefore, he provided the consultant with vital information about water policy, water basins, and water users associations in Tanzania and in Rufiji Water Basin.

¹ The position of Vice-Secretary was not there; the Vice-Chairman resigned.

2.2.3 Instruments used

Five instruments were used to tap information to satisfy the terms of reference: 4 key informant interview guides and 1 Focus Group Discussion guide. The key informant interview guides were for four categories of key informants, namely RBWO officers, DFT members, village leaders, and the officer who trained DFT members. The focus group discussion guide was for WUA leaders and members. The instruments contained discussion topics reflecting the activities for the consultancy as stipulated in the terms of reference. Copies of the instruments are as seen in Appendices 2 (a) to 2 (e).

Besides comprising interview items and discussion topics, each of the five instruments contained an index scale based on the Dublin principles that water development and management should be based on a participatory approach, involving water users, planners and policy makers at all levels; and women play a central part in the provision, management and safeguarding of water (<http://www.fiu.edu/~mcclainm/iwrm>). The same principles have been adapted to the Tanzania National Water Policy (URT, 2002), particularly the stipulations of the main policy principles in water resources management as seen in Section 1.1 of this report. In this study, they were evaluated to find the extent to which they were heeded in the process of forming water users associations. An index scale, which was copied to all the 5 instruments, was used to determine the extent.

2.2.4 Key informant interviews and focus group discussions

For each category of key informants, one to three people at the same time were interviewed using a relevant key informant interview guide. For focus group discussions, a group of 4 to 9 people sat with the consultant and a WWF officer who was leading the consultant. The discussions were held inside village, ward or division offices as seen in Figures 1 and 2. The consultant was both the facilitator and the note-taker. Key informants were not involved in focus group discussions. This was aimed at giving the focus group discussants more freedom to give detailed information on the problems and lessons learnt on the processes of WUA formation which were under guidance, supervision and facilitation of the key informants interviewed. Their experiences, roles in, and views on the processes of WUA formation were discussed. Information pieces given by WUA leaders and members were the leading ones; information pieces from the key informants were used to add value to the information given by WUA leaders and members, and check the validity of the information given by the latter.



Figure 1: Mpando WUA leaders (Njombe District) in a Focus Group Discussion on 22nd June 2009. From, left to right: Adamson H. Msigala (Chairman), Sarah Mgaya (Secretary), Dr. Kim A. Kayunze (Facilitator/Consultant), Happy Nziku (Member), Elmano Nziku (Member), Evaristo Mandele (Member), and Hosea M. Msemwa (Member)



Figure 2: Mwamini Masanja (WWF Environmental Education Officer, Centre), flanked by nine members of Mkewe Water Users Association who took part in a Focus Group Discussion on 20th June 2009

2.3 Data Management and Interpretation

The data collected using the index scale were quantitative. Therefore, they were analysed using the Statistical Package for Social Sciences (SPSS) to determine descriptive statistics. Moreover, inferential analysis was done to compare points scored by men and women, and those scored by respondents in various districts. T-test and one-way ANOVA were used respectively to do the comparisons. The points were on the extent to which WUA formation processes had been participatory. The data collected using the other items on the instruments used were mainly qualitative. Therefore, they were analysed by sorting out similarities and differences in responses given by the interviewees and discussants. Based on the qualitative information, where very pertinent statements were given, quotations are given in the findings to cite the interviewees' and discussants' words verbatim. Such a style is commended to be analogous to the strength of inferential analysis results in quantitative research (Bryman, 2004). Moreover, some striking information pieces are presented in boxes to reveal issues which need attention in management of the WUAs.

3. FINDINGS OF THE STUDY

3.1 Processes Used in Forming WUAs in other Parts of the World and Lessons Learnt

Literature on processes used to formulate WUAs elsewhere in the world is scanty, but there is emphasis in the literature that WUAs should be formed to ensure water resources are well managed and used equitably by all stakeholders. The overriding guidelines on the issues to heed in management of water resources are the Dublin principles, which stipulate that: (a) fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment; (b) water development and management should be based on participatory approaches, involving users, planners and policy makers at all levels; and (c) women play a central part in the provision, management and safeguarding water (<http://www.fiu.edu>, undated).

There is growing awareness that water will be one of the most critical natural resources in the near future, especially because it has become apparent that bureaucracies with staff trained as administrators are not best suited for management of water resources (Özcan *et al.*, 2001). This reality is also reported by Naik and Kalro (1998) who contend that disappointing performance of government owned and operated irrigation systems have compelled a number of countries to transfer rights and responsibilities for management of irrigation systems from government agencies to private, local persons or organizations. They give examples of the Philippines, Indonesia, China and Sri Lanka in Asia; Mexico and Colombia in Latin America, and others including New Zealand and Turkey, which have made major efforts in this direction. Formation of WUAs is one of the main characteristics of the transfer of rights and responsibilities for management of irrigation systems from government agencies to communities and the private sector. In India, for example, the policy Government of Maharashtra is expressed in the *Cooperative Water Users Association Guidelines (GOM 1994)*. Accordingly, the Irrigation Department has adopted a policy to: (a) create Water Users Associations (WUAs) at minor canal level (average command of 500 hectares), (b) transfer operation and management responsibilities for the minor and smaller channels to WUAs, (c) allocate water to the WUAs through 5 year agreements, and (d) charge WUAs for water on the basis of the volume actually taken (volumetric pricing).

Another example of having WUAs is common in Turkey where the formation of water users associations was accelerated in the 1990s (Özcan *et al.*, 2001) due to water for irrigation having a high value. WUAs are also common in Kazakhstan where roughly a third of the independent farmers who possess irrigated land in Shu Raion belong to a WUA known as Shu WUA, which was formed by farmers themselves in response to the challenge of purchasing and allocating irrigation water after the disintegration of the state farm following the break up of the Soviet Union in 1991. This resulted into abrupt privatization of huge collective farms that had produced a significant share of the Soviet system's cotton, wheat, and other crops (Rosen and Strickland, 1999). There is also emphasis on having strong WUAs in South Africa. Accordingly, the 1998 National Water Act launched an in-depth reform of water resource management, including establishment of Water Users Associations and Catchment Management Agencies (CMA) (Phaladi *et al.*, 2005).

According to Phaladi *et al.* (2005), the ways to form WUAs are of two main types: (a) through the state (e.g. the Ministry of water), and (b) through the public. Whether a WUA is formed through the state or through the public, the process to form it must be bottom-up to increase chances of it being sustainable. The bottom-up approach also enables the WUA members to use by-laws and constitutions drafted by them. In line with this, obviously, the Dublin principles have to be heeded. Phaladi *et al.* (2005) recommend that, to make a state WUA sustainable, members of it should be selected by the community, not by the government. They also describe steps that were followed by farmers to form a WUA in Ga-Mampa at Mafefe Ward in South Africa as follows:

1. Official meetings were held and workshops to discuss the process of establishing the WUA.
2. Farmers from 3 different schemes selected their representatives from existing committees to represent each scheme.
3. Election of 5 leaders of the WUA (3 males and 2 females) was done.
4. The chairperson introduced schemes' representatives to the community.
5. Workshops were held on duties supposed to be done by members of the WUA.
6. Conditions that could make the water committees effective and efficient were stipulated.

However, Phaladi *et al.* (2005) caution that WUAs formed through the public or through the state may have differences in the steps depending on circumstances on the ground.

From the above literature, one learns that WUAs are common in many African, Asian, Latin American, and European countries. One also learns that the steps used to form WUAs in other countries are not much different from those that are being used in Tanzania, particularly in the GRRCA, which are described below. Moreover, the above literature teaches us that if WUAs are formed through top-down approaches which are not, or are less, participatory they have high chances of collapsing in comparison with WUAs formed through participatory and bottom-up approaches. This happened in South Africa with a WUA known as Thabina, which had been formed through a top-down approach (Phaladi *et al.*, 2005).

3.2 Processes Used to Form WUAs in Tanzania

According to Mr. Leodgard Haule (Oral Communication, June 2009), in Tanzania, WUAs are prominent in the Rufiji River Basin, of all the nine river basins of Tanzania. The steps used to



form WUAs in the GRRCA are 12, and they are described below, according to Mr. Haule (Oral Communication, June 2009).

1. **Initial briefing:** The condition of water resources that was alarming was discussed with Local Government leaders. It was characterised by decline of water levels and flow in the Great Ruaha River to the extent of threatening the survival of wildlife in Ruaha National Park; failure to generate hydro-electric power (HEP) at Mtera that relies on water of the river; and cessation of irrigated agriculture due to extreme scarcity of water that was looming in Mbeya and Iringa Regions. Management as well as use of water resources at various levels was discussed and the need to align them with the national water policy for more sound management and sustainable use of the resources was agreed upon. As a matter of the alignment, both the 1991 National Water Policy and the 2002 National Water Policy were referred to, particularly their provisions that water officers have the mandate to establish water users associations (WUAs). However, since the policies do not elaborate how to formulate WUAs, the processes of formulating WUAs had to be devised.
2. **Formulation of District Facilitation Teams (DFT):** The water officers with the RBWO discussed with local government leaders at the district level that for the WUAs to be strong and sustainable, they had to be formed through participatory processes involving various sectors and a multidisciplinary team of experts. Therefore, each District Executive Director where WUAs were to be formed nominated 10 experts, each or a few of them from a district council department, to compose a District Facilitation Team (DFT). The common departments where the experts came from were those of Agriculture (Crop, livestock and irrigation), water, works, community development, natural resources, and education.
3. **DFT training:** Since the DFT members had various educational backgrounds, they were trained on policies and participatory methodologies so that they could do the work of facilitating WUA formation in the same way. The DFT members were also trained on adult learning methodologies, communication skills, and integrated water resources management so that they could work efficiently in a multidisciplinary and multi-sectoral team. The training equipped them with knowledge and skills to understand not only the above technical issues about the natural resources including water resources, but also about people in particular catchment areas and their livelihoods.
4. **Awareness creation:** This was done in two-phase meetings: first with village council members tentatively from 10:00 hours and then with all villagers tentatively from 14:00 hours. In all villages, under normal circumstances, both meetings were held on the same day. The preceding meeting with village council members was aimed at getting them understanding the issues at hand and the whole aim of the subsequent meeting with all villagers so that they could contribute to educating further the villagers, even those who would not have attended the all villagers meetings. All villagers meetings were held in which the same issues discussed in the preceding village council meetings were discussed. In both meetings the DFT members discussed water, environment, irrigation, forestry, and water policies, with a view to triggering the village leaders and villagers to realise that there were problems with respect to environment and water resources. The DFT members avoided mentioning the problems; they triggered the village leaders and villagers to perceive the problems. Mr. Haule said: "Once we managed to trigger them to mention the problems, we

were celebrating. At that point we were telling them to choose representatives to take part in PRA to analyse the problems systematically, with our facilitation.”

5. **Choosing villagers’ representatives:** The persons chosen to represent others were those who were members of various water users groups (where user groups were already existing), those who were active in major activities in the village, and people from every sub-village (one man and one woman). After choosing the representatives, dates were set for them to have a planning meeting to do subsequent activities, which are described below.
6. **Stakeholder analysis:** Before doing PRA, all water users were analysed and how they were affecting the water resources and how they were being affected by the water resources, positively and negatively. This was done to ensure that no stakeholder in water resources was forgotten and the stakeholders were prioritised. This was also aimed at maximising participation of every stakeholder in the interventions that were ahead the whole exercise. Participants in the PRA exercise that was following were chosen from the distinguished stakeholders.
7. **Participatory Rural Appraisal (PRA) undertaking:** The kind of PRA that was done was focused PRA focusing specifically on water resources. Therefore, it was Participatory Water Resources Assessment (PWRA) and was called *upembuzi shirikishi* in Kiswahili. The representatives chosen for every sub-village were collaborating with DFT members to do a transect walk through the village and visiting all water sources existing in the village to find problems and prioritising solutions to them. The transect walk was also meant to crosscheck background information existing about the geographical location where a WUA was to be formed.
8. **PRA outputs presentation:** After the PRA, the representatives were reporting their findings in a village meeting, explaining their findings and plans of work to solve the problems realised and preventing similar problems in future. Since the representatives had continually been educated by the facilitators in the course of doing the PRA, they were more knowledgeable than the rest of the villagers who had not taken part in the PRA exercise. Therefore, during presentation of PRA outputs they were explaining the findings and plans of work to the other villagers while the facilitators were listening, just waiting to clarify any ambiguities that might arise. Then the villagers were being asked: “In view of these problems and action plans, is there a need to form a WUA to help us implement the plans?” Everywhere, the villagers were responding positively. The trainer of facilitators said: “Although behind the scenes we knew that a WUA had to be formed, we were avoiding being the first ones to mention the need to form it. Once they mentioned a need to form a WUA we were celebrating”. The type of a WUA to be formed would depend on the nature of the problems realised during PRA, but a WUA would be formed at the village, catchment or sub-catchment level, but it had to include multiple uses of water. And if any water association existed in the area, it automatically became a member of the new WUA, since the aim of forming WUAs was to strengthen, not to disrupt, the institutional capacity of local communities to manage and use water resources.
9. **Choosing WUA leaders:** The villagers’ representatives chose WUA leaders by secret ballot. For a village level WUA that is called *umoja* it was sub-village representatives who did the election. For a catchment, sub-catchment, or apex WUA, representatives from various sub-catchments, villages, and various water users’ representatives had to be brought together to do the voting.

10. **Preparation of a draft constitution.** During the period of selecting leaders, which in most cases was done in a 5-day seminar, the participants were preparing a draft constitution for the WUA.
11. **Draft constitution presentation:** From the seminar in which the draft constitution was prepared, the participants were going back to their respective villages to explain to villagers the draft constitution in village meetings. The stakeholders were giving their comments and then sanctioning the draft constitution, subject to reasonable incorporation of their views on the draft constitution.
12. **Draft constitution registration:** The draft constitution was submitted to the District Council where the District Council Lawyer read it to determine whether it was sound, prior to forwarding it to the RBWO where it was also read prior to being forwarded to the Ministry of Water for registration. Alternatively, it was sent to the Ministry of Home Affairs or to the President's Office – Local Government and Regional Administration (PO – LGRA) for registration.

3.3 Comparison between Steps Used to Form WUAs in Tanzania and in Other Places

Reading closely the above 12 steps through which WUAs were formed in the GRRCA, one finds that the actual steps were nine, from number 4 to 12; the first three were preparatory steps. The 9 actual steps for WUA formation in the GRRCA are compared in Table 2 with those that are used elsewhere in the world, particularly in the South African Republic (RSA).

Table 2: Comparison between steps used to form WUAs in the RSA and in Tanzania

Steps used in the GRRCA	Steps used in South Africa	Similarities	Differences
1. Awareness creation	1. Holding meetings and workshops to discuss the process of establishing a WUA.	This is similar to Steps 1 to 3 in the GRRCA.	Differences may or may not be there, depending on the discussions in the South African WUA formation process.
2. Choosing villagers' representatives			
3. Stakeholder analysis			
4. Participatory Rural Appraisal (PRA) undertaking	2. Farmers from different schemes selecting their representatives from existing committees to represent each scheme.	In both cases farmers at the grassroots are represented	In the GRRCA the use of PRA is mentioned explicitly, unlike in the South African case
5. PRA outputs presentation			
6. Choosing WUA leaders	3. Election of 5 leaders of the WUA (3 males and 2 females).	In both cases the number of WUA leaders is stipulated and the leaders are chosen democratically.	In the GRRCA the numbers of leaders were variable from one WUA to another one.
7. Draft constitution preparation	-	Preparation of a draft constitution is similar to stipulating conditions to make WUAs efficient and effective (Last step in the South African approach)	Extent to which communities, and village and ward government leaders are involved may differ

Steps used in the GRRCA Area	Steps used in South Africa	Similarities	Differences
8. Draft constitution presentation	4. The Chairperson introduces schemes representatives to the community.	WUA leaders are introduced to communities.	In the GRRCA, WUA leaders introduce themselves to communities when giving a feedback from seminars in which they were elected; in South Africa WUA leaders are introduced to communities by the WUA Chairperson.
9. Constitution registration	5. Holding workshops on duties supposed to be done by members of the WUA	In the GRRCA and in other countries WUAs are registered	In the GRRCA the registration takes 3 to 4 years; in other places of the world it may take a few months.

3.4 Processes through which WUAs Were Formed in the GRRCA

In this section, the steps through which sub-catchment WUAs were formed are described in a chronological order starting with the WUAs that were formed first and ending with those that were formed later. The section is divided into two sub-sections: 3.4.1 in which the processes through which 9 sub-catchment WUAs were formed are described and sub-section 3.4.2 in which the processes through which 3 apex WUAs were formed are described.

3.4.1 Processes through which sub-catchment WUAs were formed

3.4.1.1 The process through which Halali Sub-Catchment WUA was formed

Halali sub-catchment WUA is actually called MWAMAHA, which is an acronym for the Kiswahili words *Muungano wa Watumia Maji Bonde Dogo la Mto Halali*. In English this means Halali River Water Users Association. The WUA was formed by RBWO through a process which started in 1999 and ended in 2001. Despite the presence of the former WUA, there were chronic conflicts over irrigation water since at the upper side of the river people were dominating water use while downstream there was acute scarcity of water for irrigation. Therefore, soon after WWF started working in the area it started with reformulation of the WUA. Upstream dwellers at Mtwango were blamed for practices that were resulting into water scarcity downstream, but the downstream dwellers had not been involved in the formation of the WUA in 1999 - 2001. The reformation of the WUA included adding downstream villages to the ones previously sharing it. The WUA was reformed on 9th October 2003 and is shared by 24 villages, which are listed in Table 3.

Table 3: Villages which share Halali Sub-Catchment WUA

SN	Village	Ward	Division	District
1.	Igerehedza	Ilembula	Wanging'ombe	Njombe
2.	Igula	Ilembula	Wanging'ombe	Njombe
3.	Ilembula	Ilembula	Wanging'ombe	Njombe
4.	Iponda	Ilembula	Wanging'ombe	Njombe
5.	Kanamalenga	Ilembula	Wanging'ombe	Njombe
6.	Kasagala	Ilembula	Wanging'ombe	Njombe
7.	Mayale	Ilembula	Wanging'ombe	Njombe
8.	Mpululu	Ilembula	Wanging'ombe	Njombe
9.	Udonja	Ilembula	Wanging'ombe	Njombe
10.	Ujange	Ilembula	Wanging'ombe	Njombe
11.	Iyayi	Luduga	Wanging'ombe	Njombe
12.	Korinto	Luduga	Wanging'ombe	Njombe
13.	Itulahumba	Mtwango	Makambako	Njombe
14.	Itunduma	Mtwango	Makambako	Njombe
15.	Lunguya	Mtwango	Makambako	Njombe
16.	Mawande	Mtwango	Makambako	Njombe
17.	Sekalenga	Mtwango	Makambako	Njombe
18.	Welela	Mtwango	Makambako	Njombe
19.	Ikwega	Usuka	Mdandu	Njombe
20.	Isindagosi	Usuka	Mdandu	Njombe
21.	Iteni	Usuka	Mdandu	Njombe
22.	Lugoda	Usuka	Mdandu	Njombe
23.	Matowo	Usuka	Mdandu	Njombe
24.	Usuka	Usuka	Mdandu	Njombe

The WUA has an office in Ilembula Ward Office, Wanging'ombe Division, Njombe District. The main water users in the WUA are domestic, irrigation, construction and livestock water users. The process used to reform the WUA was as follows:

1. Information was given to village leaders and villagers about holding meetings to reform the WUA.
2. In every village a meeting was held, and in every sub-village 1 person was chosen to be the sub-village representative. From all sub-village representatives in every village, four people (2 male and 2 female) were selected to be village representatives. From the 4 village representatives 3 village level WUA leaders were elected: Chairperson, Secretary, and Treasurer. After the elections, the village WUA leaders were trained by DFT members for one day in their villages. Village government leaders were included in the training so as to give them the same knowledge to make them work more cooperatively with WUA leaders.
3. Then stakeholder analysis was done in which case various water users and influential stakeholders were identified.
4. Thereafter, sub-village and village representatives, being led by some DFT members, took part in PRA to assess water resources, among other issues, analyse problems and prioritise solutions.
5. PRA findings were presented in all villagers meetings. In the meetings the problems found during PRA were reported and a need to form a WUA became clear.

6. Therefore, the 3 village level WUA leaders from all the 24 villages were taken to a 3-day seminar at Njombe. Besides being trained on water resources and laws, sustainable water use, HIV/AIDS, management of catchments and soils, gender, leadership, and financial management; they elected 5 sub-catchment WUA leaders: Chairperson, Vice-Chairperson, Secretary, Assistant secretary, and Treasurer. They also formed 4 committees: (a) Planning and finance, (b) Management and farms allocation, (c) Defence and security, and (d) Social services and measurement. VEOs, village chairmen, WEOs, and Ward Councillors were included in the training to get them sensitized to work in collaboration with the WUA leaders.
7. The sub-catchment WUA leaders and other participants in the seminar drafted the constitution of the WUA and a plan of work.
8. Members of the sub-catchment WUA council held feedback meetings in their respective villages by explaining to them the draft constitution and the plans of work. They received villagers' comments on the draft constitution and plan of work
9. The draft constitution was then improved heeding villagers' comments. It was then forwarded to the District Director's Office for scrutiny by a lawyer before it was forwarded to the Rufiji Basin Water Officer who sent it to the Ministry of Water for registration.

3.4.1.2 The process through which Mpando Sub-Catchment WUA was formed

The WUA is called *Muungano wa Watumia Maji Bonde Dogo la Mto Mpando* (MUWABOM), is found in Njombe District, and is shared by 20 villages. The process of forming it started in August 2003 and ended in August 2004. The WUA has an office (one room) in the Division Office at Makoga Village, Makoga Ward, Imalinyi Divison, Njombe District. The main water users in the WUA are domestic, construction, livestock, irrigation, and aquaculture water users. The main reasons given for the need to form the WUA were water flow decline in Mpando and Mtera Rivers. Therefore, communities were urged to conserve the water of Mpando River to restore its flow. In order to achieve this, DFT told the villagers that they had to avoid cultivation on water sources and at river banks; uproot trees which consume excessive amounts of water particularly *Eucalytus spp*, pines, and bamboos; and plant trees that are water friendly, especially *mivengi* (Singular *muveni* in the Hehe Language) (*Syzygium spp*). The villages that share the WUA are listed in Table 4.

Table 4: Villages which share Mpando Sub-Catchment WUA

SN	Village	Ward	Division	District
1.	Igosi	Igosi	Imalinyi	Njombe
2.	Ivigo	Igosi	Imalinyi	Njombe
3.	Mdasi	Igosi	Imalinyi	Njombe
4.	Ujindile	Igosi	Imalinyi	Njombe
5.	Igodivaha	Imalinyi	Imalinyi	Njombe
6.	Kinenulo	Imalinyi	Imalinyi	Njombe
7.	Kipengere	Kipengere	Imalinyi	Njombe
8.	Mafinga	Kipengere	Imalinyi	Njombe
9.	Maronga	Kipengere	Imalinyi	Njombe
10.	Mwilamba	Kipengere	Imalinyi	Njombe
11.	Idunda	Makoga	Imalinyi	Njombe
12.	Makoga	Makoga	Imalinyi	Njombe
13.	Ng'anda	Makoga	Imalinyi	Njombe
14.	Samaria	Makoga	Imalinyi	Njombe
15.	Uhekele	Makoga	Imalinyi	Njombe
16.	Uteweke	Makoga	Imalinyi	Njombe
17.	Igagala	Ulembwe	Imalinyi	Njombe
18.	Imalilo	Wangama	Imalinyi	Njombe
19.	Ulembwe	Ulembwe	Imalinyi	Njombe
20.	Usalule	Ulembwe	Imalinyi	Njombe

The steps outlined below were used to form the WUA:

1. Information about the need to form the WUA came from Division officers to village leaders.
2. Village leaders convened meetings of all villagers. In the village meetings, DFT explained to the village council members first and then to the villagers about environmental and water resources. They then chose 2 representatives (one male and one female) from each sub-village to form a committee of water users in the village. The committee members chose 3 top WUA leaders at the village level among themselves: Chairperson, Secretary, and Treasurer. The 6 people from each of the 20 villages (i.e. 120 people) underwent training for 6 days in three batches each of 40 people.
3. Analysis of stakeholders was done in which various water users and influential stakeholders were identified.
4. The fourth step was conducting a participatory rural assessment exercise in each of the 20 villages using the 6 representatives from each of the villages and one or more DFT Members.
5. PRA findings were presented in village meetings to explain to the villagers PRA outputs in terms of problems found and interventions planned to contain the problems.
6. The three WUA leaders at the village level from each of the 20 villages were taken to Njombe for a week's seminar which covered topics on water decline, environment and other issues. During the seminar they also chose 4 leaders of the WUA at the sub-catchment level: Chairperson, Vice-Chairperson, Secretary and Treasurer.
7. During the seminar they also formulated a draft constitution and a work plan for the WUA.
8. After the seminar they went back to their villages and conducted feedback meetings in which they explained the draft constitution and work plan to the villagers. This allowed the villagers to give their views about the constitution and work plans.

9. The views from all the villages were considered and some improvement to the draft constitution was done. Then it was submitted to the District Director's Office for scrutiny by a lawyer before it was forwarded to the Rufiji Basin Water Officer who sent it to the Ministry of Water for registration.

3.4.1.3 The process through which LYAMUF Sub-Catchment WUA was formed

The full name of the WUA is Lyandembela Mufindi, which is abbreviated as LYAMUF, is found in Mufindi District, and is shared by 14 villages. It was formed on 23rd November 2004 by merging two WUAs, namely LITUI and LYAMUF. Initially the WUA that is shared by 14 villages started with 5 villages called Lugodalutali, Igombavanu, Tambalang'ombe, Utosi and Igomaa, hence the name LITUI, which is an acronym for the 5 villages. Later on, other 9 villages that are downstream formed a WUA called LYAMUF. Thus, LITUI and LYAMUF were merged by dissolving their leaderships to form the new LYAMUF. Each of them had 5 leaders: Chairperson, Vice-chairperson, Secretary, Assistant Secretary, and a Treasurer. The same number of leaders and leadership positions were chosen for the merged WUA. The main reason given for merging the two WUAs was to ensure that the villagers upstream conserve water in water tributaries that are many there and both the upper and lower dwellers use the water economically. The main water users in the WUA are domestic, irrigation, livestock, and aquaculture water users.

Its office will be build at Lugodalutali Village in Igombavanu Ward, Saadani Division, Mufindi District. The village is relatively at the middle of the 14 villagers which share the WUA, and a piece of land has already been secured for construction of the office. The villages which share the WUA are listed in Table 5.

Table 5: Villages which share LYAMUF WUA

SN	Village	Ward	Division	District
1.	Igombavanu	Igombavanu	Saadani	Mufindi
2.	Lugoda	Igombavanu	Saadani	Mufindi
3.	Ugenza	Ikweha	Saadani	Mufindi
4.	Ukelemi	Ikweha	Saadani	Mufindi
5.	Uyela	Ikweha	Saadani	Mufindi
6.	Isalavanu	Isalavanu	Saadani	Mufindi
7.	Kikombo	Isalavanu	Saadani	Mufindi
8.	Maduma	Isalavanu	Saadani	Mufindi
9.	Ugute	Isalavanu	Saadani	Mufindi
10.	Kitelewasi	Rungemba	Ifwagi	Mufindi
11.	Rungemba	Rungemba	Ifwagi	Mufindi
12.	Igomaa	Saadani	Saadani	Mufindi
13.	Tambalang'ombe	Saadani	Saadani	Mufindi
14.	Utosi	Saadani	Saadani	Mufindi

The process of formation of the WUA was as follows:

1. DFT members made appointments with village leaders for awareness meetings on environment and water resources.

2. The meetings were held in each of the 14 villages. During the meetings, 2 representatives for each sub-village were selected. Then from them 4 WUA leaders at the village level were elected.
3. Stakeholder analysis was done to identify the main water users and influential stakeholders.
4. The four people selected from each village took part in participatory water resources assessment.
5. After PRA, they presented PRA findings in village meetings in which they explained to the villagers the environmental and water issues found, including problems and prioritised solutions.
6. Leaders of each of the two WUAs were called at Mafinga and guided to choose 5 leaders from the previous 10 leaders of the two WUAs. The Chairperson, Secretary and Assistant Secretary of the former LITUI were elected to take the same positions in the new LYAMUF; the Vice-Chairperson and treasurer came from the former LYAMUF. All the five leaders were elected by secret ballot. The one who got the highest number of votes for the Chairperson position became the Chairperson. The one who followed him by the number of votes became the Vice-Chairperson. The same was done to get the Secretary and the Assistant Secretary. Lastly, the treasurer was elected by mentioning three names, voting for them and taking the one who got the highest number of votes to be the treasurer. The elections were held on 23/11/2005.
7. A constitution and a work plan for the WUA were formed in the same meeting.
8. The constitution and work plan were presented to villagers for comments.
9. The comments were incorporated. Then the constitution draft was sent to the District Executive Director for determining its soundness before sending it to the Rufiji Basin Water Officer for forwarding to the Ministry of Water for registration. A copy of the constitution was also sent to the President's Office – Local Government and Regional Administration for the same purpose of registration.

3.4.1.4 The process through which Balali Sub-Catchment WUA was formed

The full name of the WUA is *Muungano wa Watumia Maj, Bonde Dogo la Mto Balali*. The WU was formed in May 2005, is shared by 6 villages, and is found in Njombe District. The WUA has no office; they had planned to build one at Masage Village because it is relatively at the centre of the 6 villages. They expected to solicit funding for the construction from RBWO and WWF. The main problems that necessitated the formation of the WUA were cultivation at water sources and river banks, and grazing livestock at the same places. The villages which share the WUA are listed in Table 6.

Table 6: Villages which share Balali Sub-Catchment WUA

SN	Village	Ward	Division	District
1.	Masage	Imalinyi	Imalinyi	Njombe
2.	Masilu	Imalinyi	Imalinyi	Njombe
3.	Luduga	Luduga	Wanging'ombe	Njombe
4.	Malangali	Luduga	Wanging'ombe	Njombe
5.	Mambegu	Luduga	Wanging'ombe	Njombe
6.	Wangama	Wangama	Imalinyi	Njombe

The steps used to form Balali WUA were as follows:

1. Giving information about holding village meetings to discuss water resources and environmental issues.
2. Village meetings were held in which environmental education and how to take care of water resources were explained to villagers. Weaknesses also leading to decline in water resources were discussed. Two water representatives were chosen for every sub-village. Then they elected among themselves 3 village level WUA leaders. Those elected were a Chairperson, a Secretary and a Treasurer. The three village WUA leaders from each of the 6 villages plus VEOs and WEOs (excluding village Chairmen) were called to Njombe for a 5-day training seminar.
3. Stakeholder analysis was done to ascertain various water users and influential stakeholders.
4. The village level WUA leaders and sub-village representatives undertook a PRA to assess the environment, water resources and other resources, and identify related problems and prioritise their solutions.
5. After PRA, those who had participated in it presented PRA findings in village meetings in which they explained to the villagers the environmental and water issues found, including problems and prioritised solutions.
6. The village level WUA leaders were called to Njombe for a 5 days' training seminar during which they chose 5 leaders of the WUA: Chairperson, Vice-Chairperson, Secretary, Assistant Secretary, and Treasurer.
7. In the same seminar they also drafted the constitution of the WUA and formulated a work plan. They also chose the area where to build the office: Masage Village.
8. From the training seminar they participated in feedback meetings in their respective villages to inform their fellow villagers of the draft constitution and the work plan for villagers' comments and approval.
9. The comments were incorporated in the draft constitution, and then it was sent to the District Director's Office for scrutiny and sending it to the Rufiji Basin Water Office who forwarded it to the Ministry of Water for registration.

3.4.1.5 The process through which Mswiswi Sub-Catchment WUA was formed

The WUA is actually called *Muungano wa Watumia Maji Mto Mswiswi* (MWAMAMSWI). It was formed on 22nd April 2006, is shared by 7 villages, and is found in Mbarali District. The main water users in the WUA are domestic, irrigation, livestock, and aquaculture water users. The salient problems with Mswiswi River water use were too many water intakes: 11 of them while they were supposed to be about 5; not returning water to the river course after diverting it; herders watering cattle any where on the river instead of having specific watering points; cultivation up to the river banks; and presence of bamboos, pines and *Eucalyptus spp* trees that were contributing to river water decrease since they consume excessive amounts of water. Before the process of WUA formation, representation of water users was based on 5 irrigation canals that were there, each of which having 5 representatives, hence a total of 25 water representatives. The villages which share the WUA are listed in Table 7.

Table 7: Villages which share Mswiswi Sub-catchment WUA

SN	Village	Ward	Division	District
1.	Azimio-Mswiswi	Igurusi	Ilongo	Mbarali
2.	Kongolo-Mswiswi	Igurusi	Ilongo	Mbarali
3.	Kapyo	Mahongole	Ilongo	Mbarali
4.	Nsonyanga	Mahongole	Ilongo	Mbarali
5.	Luhanga	Utengule	Ilongo	Mbarali
6.	Mahango-Mswiswi	Utengule	Ilongo	Mbarali
7.	Simike	Utengule	Ilongo	Mbarali

The steps followed to form the WUA were:

1. DFT introduced themselves to village leaders and requested for village meetings in which to discuss water issues.
2. Twenty-five representatives of 5 canals that were in the area prior to the advent of the Rufiji Water Programme WUAs were asked to provide 4 representatives: 1 for domestic water use, 1 for livestock water use, 1 for irrigation water use, and 1 for environmental activities water use. Then, 4 representatives were chosen for each of the 7 villages that share MWAMAMSWI. They included the above 4 water use scheme representatives.
3. Stakeholder analysis was done to identify various water users and influential stakeholders.
4. PRA was undertaken to assess water resources, problems associated with them, and prioritise solutions to the problems.
5. PRA outputs were presented in village meetings to explain to the villagers who had not taken part in it the problems found and the solutions prioritised.
6. The 28 village level WUA leaders and representatives were taken for a 5-day training seminar. During the seminar they elected 5 top leaders of the association: Chairperson, Vice-Chairperson, Secretary, Assistant Secretary, and Treasurer. The leaders chosen were 4 men and 1 woman. The number of men dominated because they proposed 2 men and 1 woman for the chairpersonship; they did the same for the Treasurer, but they proposed 2 women and 1 man for the position of secretary. A woman just ended up getting the position of Assistant Secretary. Besides, they chose 4 committees, each of them comprising 7 members. The committees were: (a) Irrigation, (b) Domestic water use, (c) Environmental activities, and (d) Livestock keeping. After the training in April 2009, the above committees were reformulated into the following 4 committees: (a) Finance and Planning, (b) Supervision and farm plots division, (c) Environment, and (d) Defense and security.
7. During the seminar they also formulated a draft constitution and a plan of work for the WUA.
8. The draft constitution was presented to the villagers to get their comments and approval.
9. The draft constitution was improved taking into account villagers' comments. Then it was submitted to the District Director's Office for scrutiny and forwarding to the Rufiji Basin Water Officer who sent it to the Ministry of Water for Registration.

3.4.1.6 The process through which Mkewe Sub-Catchment WUA was formed

The WUA was formed in October 2006, is shared by 8 villages, and is in Mufindi District. The villages which share the WUA are listed in Table 8. The problems identified were decline in water flow, e.g. Mkewe River source at Bumilayinga Village was drying for about 5 months from September to January. There were also problems of deforestation, exotic trees (pines and *Eucalyptus spp*) that are not water friendly, and bamboos that are also not water friendly. The main water users in the WUA are domestic water users, irrigators, and aquaculture water users.

Table 8: Villages which share Mkewe Sub-Catchment WUA

SN	Village	Ward	Division	District
1.	Bumilayinga	Bumilayinga	Malangali	Mufindi
2.	Kisada	Bumilayinga	Malangali	Mufindi
3.	Matanana	Bumilayinga	Malangali	Mufindi
4.	Uole	Bumilayinga	Malangali	Mufindi
5.	Itulavanu	Mafinga	Ifwagi	Mufindi
6.	Luganga	Mafinga	Ifwagi	Mufindi
7.	Enalimba	Rungemba	Ifwagi	Mufindi
8.	Itimbo	Rungemba	Ifwagi	Mufindi

The process followed to form the WUA was as follows:

1. Appointments were made with village leaders for village meetings in all the 8 villages.
2. Meetings were held with village council members and all villagers on the same day. During the meetings, 2 sub-village representatives were chosen, and they chose among themselves 4 WUA leaders at the village level.
3. Stakeholder analysis was done to identify all water users and influential stakeholders in the water resources management and use.
4. Participatory water resources assessment was done to assess the water resources, identify problems and prioritise solutions to solve them.
5. The findings of the participatory water resources assessment exercise were presented in all villagers meetings.
6. All the 4 village level WUA leaders from each village were taken for a training seminar on water resources and environment at Mafinga. During the seminar the participants elected 5 WUA leaders at the sub-catchment level.
7. During the same training they also drafted a constitution and wrote a plan of activities for the WUA.
8. Those who underwent training gave a feedback to the villagers for comments on the constitution and work plan, which were then improved.
9. The draft constitution was improved heeding the comments given by villagers. Then it was sent to the District Executive Director's Office for scrutiny and forwarding to the Rufiji Basin Water Officer who sent it to the Ministry of Water for registration.

3.4.1.7 The process through which Ndembera Sub-Catchment WUA was formed

The actual name of the Sub-catchment WUA is *Jumuiya ya Watumia Maji Bonde Dogo la Mto Lyandembela Ifunda* (JUBODOMLYA). It was formed in October 2006, is shared by 19 villages, and is found in Iringa District. Its office is a room in Ifunda Ward's Office, Kiponzelo Division, Mufindi District. The main reason given for the need to establish the WUA was extreme decline in river water flow. An example was given that in Kigola spring formerly water was so much that even a 15-year old child could not cross it alone, but an extent had been reached when even a 5-year old child could cross it alone, due to its water having decreased substantially. Other problems were deforestation and grazing cattle at river banks. The reasons convinced the villagers of the need to have a WUA. The main water users in the WUA are domestic, irrigation and livestock water users. The 19 villages which share the WUA are listed in Table 9.

Table 9: Villages which share Ndembera Sub-Catchment WUA

SN	Village	Ward	Division	District
1.	Ifunda	Ifunda	Kiponzelo	Iringa
2.	Kibena	Ifunda	Kiponzelo	Iringa
3.	Mfukulembe	Ifunda	Kiponzelo	Iringa
4.	Mibikimitali	Ifunda	Kiponzelo	Iringa
5.	Udumka	Ifunda	Kiponzelo	Iringa
6.	Isupilo	Lumuli	Kiponzelo	Iringa
7.	Itengulinyi	Lumuli	Kiponzelo	Iringa
8.	Lumuli	Lumuli	Kiponzelo	Iringa
9.	Muwimbi	Lumuli	Kiponzelo	Iringa
10.	Kiponzelo	Maboga	Kiponzelo	Iringa
11.	Magunga	Maboga	Kiponzelo	Iringa
12.	Ibumila	Mgama	Mlolo	Iringa
13.	Ihemi	Mgama	Mlolo	Iringa
14.	Ilandutwa	Mgama	Mlolo	Iringa
15.	Ihomasa	Wasa	Kiponzelo	Iringa
16.	Ikungu	Wasa	Kiponzelo	Iringa
17.	Ufyambe	Wasa	Kiponzelo	Iringa
18.	Usengelindete	Wasa	Kiponzelo	Iringa
19.	Wasa	Wasa	Kiponzelo	Iringa

The process of formation of the sub-catchment WUA started in August 2005 and ended in October 2006. The steps that were followed to form the sub-catchment WUA were as follows:

1. DFT members requested village leaders to hold a meeting in every village for awareness creation.
2. Awareness meetings were held in each of the 19 villages. Two meetings were held on the same day: an internal meeting for village council members in the morning and an all villagers meeting (external meeting) in the afternoon. In the meetings, general environmental and water use problems existing in the area were discussed. They discussed that decline of water was due to environmental degradation and that Mtera Dam water was decreasing, threatening hydro-electric power generation. Four people (2 men and 2 women) were elected to be village level WUA leaders, i.e. 76 people for all the 19 villages.
3. Stakeholder analysis was done to identify various water users and influential stakeholders.
4. PRA was done to assess water resources, problems and prioritise solutions.
5. PRA findings were presented in all villagers meetings by explaining to the villagers the situation of the resources assessed, problems found, and prioritised solutions.
6. The 76 village level water representatives were taken to Ifunda for a week's training. At the end of the first week only 2 people per village remained; the others were requested to go back home.
7. The 38 representatives who remained went on with the seminar for another week during which they formulated a draft constitution and a work plan for the WUA.
8. Then they went back to their villages to present the outcomes of the seminar: the draft constitution and work plans. The villagers were given an opportunity to give comments on the draft constitution and work plan.
9. The 76 representatives went back to a seminar for 1 week and elected 5 top leaders of the WUA: Chairperson, Vice-Chairperson, Secretary, Assistant Secretary, and Treasurer. For the

positions of Chairperson and Secretary two men and one woman were voted for; the top two in terms of votes became the chairperson and the vice-chairperson, and the secretary and assistant secretary, respectively. For the position of treasurer, three women were voted for, and one of them became the treasurer. Lastly, 4 committees were formed, each with 8 members: 4 men and 4 women. The committees were of (a) Planning, Economy and Finance; (b) Watching and Security; (c) Water sharing and conflict resolution; and (d) Infrastructures supervision and works.

10. The constitution was improved and submitted to the District Executive Director's Office for scrutiny and forwarding to the Rufiji Basin Officer whose experts scrutinized it again before it was sent to the Ministry of Water for registration.

3.4.1.8 The process through which MBUMTILU Sub-Catchment WUA was formed

The actual name of the Sub-catchment WUA is *Jumuiya ya Watumia Maji Bonde Dogo la Mito Mbukwa, Mtitaifu and Lumbidzi*. The process of forming it started in August 2007 and ended in November 2007. The WUA is shared by 17 villages, and its office is in the Division Office at Mdandu Village, Mdandu Ward, Mdandu Division, Njombe District. The main water users in the WUA are domestic, irrigation, construction, and aquaculture water users. The villages which share MBUMTILU sub-cathment WUA are listed in Table 10.

Table 10: Villages which share MBUMTILU Sub-Catchment WUA

SN	Village	Ward	Division	District
1.	Chigonelamafuta	Imalinyi	Makoga	Njombe
2.	Imalinyi	Imalinyi	Makoga	Njombe
3.	Kidugala	Imalinyi	Makoga	Njombe
4.	Masaulwa	Imalinyi	Makoga	Njombe
5.	Igima	Mdandu	Mdandu	Njombe
6.	Ihanja	Mdandu	Mdandu	Njombe
7.	Itambo	Mdandu	Mdandu	Njombe
8.	Itowo	Mdandu	Mdandu	Njombe
9.	Lusisi	Mdandu	Mdandu	Njombe
10.	Mdandu	Mdandu	Mdandu	Njombe
11.	Mlevela	Mdandu	Mdandu	Njombe
12.	Mngate	Mdandu	Mdandu	Njombe
13.	Muhaji	Mdandu	Mdandu	Njombe
14.	Nyumbanitu	Mdandu	Mdandu	Njombe
15.	Chalowe	Usuka	Usuka	Njombe
16.	Igwachanya	Usuka	Usuka	Njombe
17.	Mtapa	Usuka	Usuka	Njombe

The process of forming the WUA was as follows:

1. Villagers got information from village officers on holding a meeting in which to discuss water resources issues.
2. Village meetings were held in which RBWO and DFT officers explained about water resources management. In the meetings they talked about various issues including water policy, management of the 9 water basins nation-wide, draught, caring for river banks, irrigation, uprooting bamboos from water catchment areas and water banks, but some people argued: "From time immemorial bamboos were there but much water was flowing."

In the meetings they chose 2 representatives from each sub-village (one male and one female). Thereafter, the representatives went back inside on the same day and chose 5 water leaders at the village level among themselves.

3. Stakeholder analysis was done to identify groups of water users and influential stakeholders.
4. PRA was done to assess water resources, problems and prioritise solutions to the problems.
5. Outputs of the PRA were presented in village meetings to explain to the rest of the villagers the situation of the water resources, problems found and prioritised solutions to solve them.
6. Four of the 5 village level WUA leaders (leaving the Treasurer) were taken to Njombe for a 5 days' seminar. Members of 12 villages went first for the seminar; members of other 5 villagers went later for a similar seminar. The 5 villages were added to the list of 12 villages after PRA for the 12 villages revealed that the other 5 villages were also good users of the water of MBUMTILU WUA. Therefore, the seminar had to be repeated including 4 representatives from each of the 17 villages. Of the 4 village level WUA leaders from each village who attended the seminar, 2 were selected to go on with the seminar for another week, and they chose 5 leaders of the sub-catchment WUA.
7. During the training they prepared a draft constitution and a work plan for the WUA, but village and ward leaders were not involved in drafting the constitution since they had not been invited in the seminar.
8. After the seminar they went back to their respective villages to explain to their fellow villagers what they had learnt in the seminar, the draft constitution and work plan. The villagers gave some comments on the draft constitution and the work plan.
9. Improvement of the constitution was done. Then it was submitted to the District Executive Director's Office for scrutiny and forwarding to the Rufiji Basin Water Officer for another scrutiny, prior to forwarding it to the Ministry of Water for registration.

3.4.1.9 The process through which Mpolo Sub-Catchment WUA was formed

The WUA is actually called *Muungano wa Watuma Maji Bonde Dogo la Mto Mpolo* (MUWABOM). The process of forming the WUA started on 8th September 2008 and ended on 10th November 2008. The office of the WUA is at Mpolo village where the WUA has a room in the village government office. It is in Utengule–Usangu Ward, Ilongo Division, Mbarali District. The main water users in the WUA are domestic, irrigation, livestock, and aquaculture water users. Aquaculture is practised in only Igurusi village. There were problems of low education in using water resources economically; most of the villagers were saying water belongs to God. Therefore, some of them were using it selfishly; it was not reaching others or delaying to reach them. They did not see the need for paying for using the water; they were arguing: “Why should we pay for water that is God's?” There was also destruction of river banks and other malpractices leading to decline in water flow in the river. The WUA is shared by 4 villages which are listed in Table 11.

Table 11: Villages which share Mpolo Sub-Catchment WUA

SN	Village	Ward	Division	District
1.	Mbalinu	Chimala	Ilongo	Mbarali
2.	Mtamboleo	Chimala	Ilongo	Mbarali
3.	Igurusi	Igurusi	Ilongo	Mbarali
4.	Mpolo	Utengule-Usangu	Ilongo	Mbarali

The WUA was formed through the steps described hereunder:

1. In May 2008 leaders representing communities of Mpolo, Mbalinu, Mtamboleo and Igurusi villages of Utengule–Usangu Ward, Ilongo Division, Mbarali District wrote a letter to RBWO requesting for being assisted to form a WUA to contain the problems of, among others, a few people hoarding water of Mpolo River illogically while other people downstream were not getting enough water for irrigation.
2. RBWO acceded to the request and in July 2008 a Rufiji Basin Water Officer from Rujewa took them a letter with a positive response. Therefore, appointments were made with the communities on when to start meetings for formation of a WUA in the four villages.
3. A village council meeting and an all villagers meeting were held on the same day in each of the 4 villages. In both meetings they talked of water resources and problems, and how to look for solutions to the problems. Previously, they had water user committees which were established in the 1970s but the committees were not very efficient. They said: “*Kamati za maji za zamani hazikuwa na katiba wala vyombo vya dola vilikuwa havizitambui*,” which means “The former committees had no constitutions and the state organs did not recognize them”. In each of the villages 2 representatives were chosen for every sub-village. The following day or on the same day they chose 5 WUA leaders at the village level from the sub-village representatives.
4. Stakeholder analysis was done to identify various water users and influential stakeholders.
5. Five WUA leaders at the village level from each of the villages were organized to take part in a river basin play to assess problems associated with water use and prioritise solutions. They were joined by village Chairmen and VEOs to assess the problems of water use in Mpolo River Sub-Catchment.
6. Findings from the participatory assessment of water use problems using a river basin play were presented to other villagers who did not take part in the exercise.
7. The 20 representatives from the 4 villages went for a training seminar for 15 days, not consecutively. At the end of the seminar they elected 5 top leaders for the WUA at the sub-catchment level.
8. They also formulated a draft constitution and a plan of work.
9. The draft constitution and plan of work were presented in all villagers meetings in all the 4 villages, and the villagers gave their views on them.
10. The villagers’ comments were worked on to improve the draft constitution which was then sent to the District Director’s Office for scrutiny and forwarding to the Rufiji Basin Water Officer who sent it to the Ministry of Water for registration.

3.4.2 Processes through which Apex WUAs were formed

3.4.2.1 The process through which Mkoji Apex WUA was formed

The actual name of the WUA is *Baraza la Watumia Maji Bonde Dogo la Mkoji* (BWM-BDM). It is an umbrella water organisation incorporating 88 village level WUAs. The process of forming the apex WUA started in March 2003 and ended on 23 August 2003 when the apex WUA was actually formed. The top leadership of the WUA has only four leadership positions, unlike in other WUAs where they are five. The office of the apex WUA will be built at Inyala Village because it is relatively at the centre of the 88 villages that share the apex WUA. The 88 villages are in 14 wards and 3 divisions (Tembela, Iyunga, and Igurusi) in Mbeya and Mbarali Districts. Each of the 88 villages has 4 leaders and 2 sub-village representatives (a male and a female representative). The villages which share the apex WUA are listed in Table 12.

Table 12: Villages and streets which share Mkoji Apex WUA

SN	Village/Street ²	Ward	District
1.	Itambaleo	Chimala	Mbarali
2.	Mbarino	Chimala	Mbarali
3.	MWAHALA CHINI	Idunda	Mbeya
4.	MWAHALA JUU	Idunda	Mbeya
5.	MWAHALA KATI	Idunda	Mbeya
6.	IKHANGA	Iganjo	Mbeya
7.	ILOVE	Iganjo	Mbeya
8.	MASHESE	Iganjo	Mbeya
9.	MWANYANJE	Iganjo	Mbeya
10.	NGOLE	Iganjo	Mbeya
11.	NSHINGA	Iganjo	Mbeya
12.	SHANGO	Iganjo	Mbeya
13.	CHEMICHEMI	Igawilo	Mbeya
14.	MPONJA	Igawilo	Mbeya
15.	MWANYANJE	Igawilo	Mbeya
16.	SOKONI	Igawilo	Mbeya
17.	Azimio	Igurusi	Mbeya
18.	Chamoto	Igurusi	Mbeya
19.	Igurusi	Igurusi	Mbeya
20.	Kongolo Mswiswi	Igurusi	Mbeya
21.	Mahango Mswiswi	Igurusi	Mbeya
22.	Majenje	Igurusi	Mbeya
23.	Mambi	Igurusi	Mbeya
24.	Simike	Igurusi	Mbeya
25.	Uhambule	Igurusi	Mbeya
26.	Hatwelo	Ijombe	Mbeya
27.	Ifiga	Ijombe	Mbeya
28.	Iwalanje	Ijombe	Mbeya
29.	Mantanji	Ijombe	Mbeya
30.	Mwashomw	Ijombe	Mbeya
31.	Ntangano	Ijombe	Mbeya
32.	Ifupa	Ilungu	Mbeya
33.	Kikondo	Ilungu	Mbeya
34.	Mwela	Ilungu	Mbeya
35.	Nyalwera	Ilungu	Mbeya
36.	Iduda	Inyala	Mbeya
37.	Imezu	Inyala	Mbeya
38.	Inyala	Inyala	Mbeya
39.	Itewe	Inyala	Mbeya
40.	Iyawaya	Inyala	Mbeya
41.	Iyela Nyala	Inyala	Mbeya
42.	Shamwengo	Inyala	Mbeya
43.	Tembela	Inyala	Mbeya
44.	Ilongo	Mahongole	Mbarali
45.	Kapyo	Mahongole	Mbarali

² Those written in capital letters are streets; the rest are villages.



SN	Village/Street	Ward	District
46.	Kilambo	Mahongole	Mbarali
47.	Mahongole	Mahongole	Mbarali
48.	Mhela	Mahongole	Mbarali
49.	Mwatenga	Mahongole	Mbarali
50.	Nsonyanga	Mahongole	Mbarali
51.	IGAMBA	Nsalaga	Mbeya
52.	ITEZI MAGHARIBI	Nsalaga	Mbeya
53.	ITEZI MLIMANI	Nsalaga	Mbeya
54.	KIBONDE NYASI	Nsalaga	Mbeya
55.	MAJENGO MAPYA	Nsalaga	Mbeya
56.	NSALAGA	Nsalaga	Mbeya
57.	NTUNDU	Nsalaga	Mbeya
58.	Idindilwa	Ruiwa	Mbeya
59.	Ijumbi	Ruiwa	Mbeya
60.	Itanji	Ruiwa	Mbeya
61.	Mahango	Ruiwa	Mbeya
62.	Malamba	Ruiwa	Mbeya
63.	Motomoto	Ruiwa	Mbeya
64.	Mtakuja	Ruiwa	Mbeya
65.	Mwanyanje	Ruiwa	Mbeya
66.	Ruiwa	Ruiwa	Mbeya
67.	Galijembe	Tembela	Mbeya
68.	Ikhoho	Tembela	Mbeya
69.	Ilembo-Usafwa	Tembela	Mbeya
70.	Isebe	Tembela	Mbeya
71.	Itambalila	Tembela	Mbeya
72.	Izumbwe	Tembela	Mbeya
73.	Ngoha	Tembela	Mbeya
74.	Shibolya	Tembela	Mbeya
75.	Simambwe	Tembela	Mbeya
76.	Usoha Muungano	Tembela	Mbeya
77.	Usoha Njia Panda	Tembela	Mbeya
78.	Igoma	Ulenje	Mbeya
79.	Itala	Ulenje	Mbeya
80.	Kimondo	Ulenje	Mbeya
81.	Mbonile	Ulenje	Mbeya
82.	Mkuyuni	Ulenje	Mbeya
83.	Ulenje	Ulenje	Mbeya
84.	Wambishe	Ulenje	Mbeya
85.	Luhanga	Utengule-Usangu	Mbarali
86.	Magulula	Utengule-Usangu	Mbarali
87.	Mpolo	Utengule-Usangu	Mbarali
88.	Utengule	Utengule-Usangu	Mbarali

Besides the above village and sub-village representatives, there are representatives of specific categories of water users, namely domestic, construction, livestock, irrigation, fishing, and aquaculture water users. In villages of Ulenje and Ilungu wards, village level WUAs were formed later. In villages of Ruiwa, Iganjo and Iduda wards, village level WUAs had not yet been

formed until June 2009 when this study was conducted; the villagers were eagerly waiting for being assisted to get the WUAs formed.

The village based WUAs are one type of WUAs in Mkoji Apex WUA. There are also irrigation-based and River catchment-based types of WUAs under the apex WUA. An example of irrigation-based WUA is Ipatagwa Irrigation Scheme in Mahongole Ward. This was formed by all households dealing with irrigation becoming members of the irrigators' association, but the members of Mkoji Apex WUA did not know how the formation was done as they were not yet leaders, and nobody told them of the process. But, at least they knew the apex WUA had 4 leaders. The village level WUAs that form Mkoji Apex WUA were formed by 2 sub-village representatives being chosen in every village; the sub-village level representatives choosing 4 village level WUA leaders; and choosing four committees of infrastructure, planning and finance, environment, and watching. Mkoji Apex WUA comprises *Jumuia ya Watumia Maji Bonde la Mto Mambi* (JUWABOMA), *Muungano wa Watumia Maji Bonde Dogo la Mto Mswiswi* (MWAMAMSWI), *Jumuiya ya Watumia Maji Bonde la Mto Mlooloo* (JUAMLO), and *Jumuia ya Watumia Maji Bonde la Mto Mpolo* (JUWABOM).

Mkoji Apex WUA was formed through the steps described below. After forming village level WUAs while the water they were sharing had no village boundary, it was deemed imperative to form an umbrella organ to facilitate management of the water resources and equitable use the resources.

1. The village level WUA leaders discussed with DFT members about the fate of the village level WUAs if they remained solitary. It was thought that some of the individual village level WUAs might be linient in enforcing water use by-laws for good management of water resources. Therefore, the problem of water decline that was affecting agricultural production in Mbeya Region and constraining hydro-electric power generation at Mtera where the water from Mbeya goes, led the experts and WUA leaders to assess the problems that were behind water decrease in the area..
2. Four village level WUA leaders from 33 villages plus two leaders of Ipatagwa Irrigation Scheme and every village chairman and VEO from the 33 villages were convened in a seminar for 3 days, but after every day some of the participants were being told not to go again to the seminar the following day. Eventually, only 1 member from the four members of every villge was elected to be a member of the Mkoji Apex WUA, plus 2 representatives from Ipatagwa Irrigation Scheme.
3. Later on more villages were joining the apex WUA as they were finishing forming their village level WUAs.
4. From river catchment-based WUAs, only one representative was taken to be a member of the apex WUA. However, since such WUAs comprised more than one village, it is obvious that they were disadvantaged in terms of representation in the apex WUA. The situation was better for Ipatagwa Irrigation Scheme which got 2 representation positions in the apex WUA.
5. Having selected the apex WUA members, the top leaders of the apex WUA were selected by the members voting for the top leaders.

3.4.2.2 The process through which MACHIREMA Apex WUA was formed

The actual name of the apex WUA is Matamba and Chimala Resources Management Association (MACHIREMA). It was inaugurated on 21st November 2007. It comprises two sub-catchment level WUAs: JUWAMA and JUWAMACHI. The former is *Jumuia ya Watumia Maji*



Matamba (Matamba Water Users Association); the latter is *Jumuia ya Watumia Maji Matamba Chini* (Lower Matamba Water Users Association). Both share the water of Chimala River, which has two names: Misi in Makete District and Chimala in Mbarali District. It originates from Mpangala Village in Makete District where it is called Misi River until Mgoji Village at the border between Makete and Mbarali Districts where its name changes to Chimala River. Eventually, it enters Mkoji River in Iyala Village. The apex WUA had no office at the time of this study, but the decision was that it be built at Matamba, Makete District. JUWAMACHI was formed on 17/11/2005; JUWAMA was formed in September 2004. The main reason to merge the two WUAs was to manage the water of the river with concerted efforts to increase its flow, and prevent and solve conflicts over water use. Conflicts had started happening over water use. For example, in Igumbilo Village, Chimala Ward a farmer threatened another one with a machete (*nyengo* in a number of vernacular languages in the area) suspecting him of being the cause of his not getting water for irrigation. When water flow is good no stone is seen inside Chimala River even in a dry season, but in 2004 and 2005 many stones were being seen in the river, which was a vivid sign of substantial decline in water. The villages which share the WUA are listed in Table 13.

Table 13: Villages which share MACHIREMA Apex WUA

SN	Village/Street	Ward	Division	District
1.	Chimala	Chimala	Ilongo	Mbarali
2.	Igumbilo	Chimala	Ilongo	Mbarali
3.	Ihahi	Chimala	Ilongo	Mbarali
4.	Isitu	Chimala	Ilongo	Mbarali
5.	Kapunga	Chimala	Ilongo	Mbarali
6.	Kibaoni	Chimala	Ilongo	Mbarali
7.	Lyambogo	Chimala	Ilongo	Mbarali
8.	Matebete	Chimala	Ilongo	Mbarali
9.	Mengele	Chimala	Ilongo	Mbarali
10.	Muwale	Chimala	Ilongo	Mbarali
11.	Mwaluma	Chimala	Ilongo	Mbarali
12.	Kinyika	Matamba	Matamba	Makete
13.	Mahanji	Matamba	Matamba	Makete
14.	Matamba	Matamba	Matamba	Makete
15.	Mpangala	Matamba	Matamba	Makete
16.	N'dapho	Matamba	Matamba	Makete
17.	Ngoje	Matamba	Matamba	Makete
18.	Nungu	Matamba	Matamba	Makete

The following steps were used to form MACHIREMA:

1. Leaders of JUWAMA and of JUWAMACHI were requested by DFT of Mbarali and Makete District to meet at Chimala.
2. In the meeting, the DFT told them that there was a need to merge JUWAMA and JUWAMACHI so as to regulate together the proportion of water used at the upper parts of the river and downstream.
3. The constitution of JUWAMA and JUWAMACHI were merged by leaders and members of the two WUAs discussing the constitutions first, removing some clauses, adding some other clauses and rephrasing here and there.

4. Members of each of the two former WUAs went to their respective areas (Chimala and Matamba Wards) and gave information in feedback meetings to the villagers. There were 9 and 6 representatives for JUWAMACHI and JUWAMA, respectively.
5. The 15 representatives met again and incorporated suggestions given by the villagers.
6. They then chose MACHIREMA top leaders. The Chairperson and the Assistant Secretary came from Chimala; the Vice-Chairman, the secretary, and the treasurer came from Matamba.
7. The constitution was amended considering the views given by the villagers. Then it was sent to the District Executive Director's Office for scrutiny and forwarding to the River Basin Water Officer who sent it to the Ministry of Water for registration.

3.4.2.3 The process through which Ndembera Apex WUA was formed

The Apex WUA is called BAWAMANDE, i.e. *Baraza la Watumia Maji Mto Ndembera*. The Apex WUA was formed on 28/2/2009, and is shared by 42 villages: 19 in Iringa District, 14 in Mufindi District, and 9 in Mbarali District. The main problems that existed were destruction of river catchments even by people who knew that doing so was bad, but they went on doing so since nobody was caring; contamination of river water with agro-chemicals including blue copper by washing crop spraying equipment in the river; washing clothes and utensils in the river and bathing in the river; and cultivation at river banks. The villages which share the WUA are listed in Table 14.

The steps used to form the Apex WUA were as follows:

1. RBWO Officers wrote a letter to the leaders of the three WUAs (JUBODOMLYA, LYAMUF, and JUWABONDECHI) that were going to form an apex WUA and requested them to convene.
2. Each of the three WUAs had the following 5 committees: (a) Planning and Finance, (b) Farming plots, (c) Environment, (d) Defence and Security, and (d) Livestock. Forty five (45) representatives, 15 from each of the 3 WUAs, met at Mafinga town for a week's training seminar from 23rd to 28th February 2009. During the seminar they dealt with various topics including water policy, water laws, HIV/AIDS, gender, and natural resources management.
3. Stakeholder analysis was done to indentify various water users in the area and influential stakeholders.
4. Problems were analysed using a problems tree and an objectives tree
5. During the above training seminar, they also elected 5 leaders of the Apex WUA and 4 signatories to the funds which they would be keeping in a bank account for the WUA. The signatories are 2 from Mufindi, 1 from Iringa and 1 from Mbarali.
6. They also formulated by-laws governing the Apex WUA, drew a map showing the 42 villages in the 3 districts and coined the name of the WUA.

Table 14: Villages which share Ndembera Apex WUA

SN	Village	Ward	Division	District
1.	Ifunda	Ifunda	Kiponzelo	Iringa
2.	Kibena	Ifunda	Kiponzelo	Iringa
3.	Mfukulembe	Ifunda	Kiponzelo	Iringa
4.	Mibikimitali	Ifunda	Kiponzelo	Iringa
5.	Udumka	Ifunda	Kiponzelo	Iringa
6.	Isupilo	Lumuli	Kiponzelo	Iringa
7.	Itengulinyi	Lumuli	Kiponzelo	Iringa
8.	Lumuli	Lumuli	Kiponzelo	Iringa
9.	Muwimbi	Lumuli	Kiponzelo	Iringa
10.	Kiponzelo	Maboga	Kiponzelo	Iringa
11.	Magunga	Maboga	Kiponzelo	Iringa
12.	Ibumila	Mgama	Mlolo	Iringa
13.	Ihemi	Mgama	Mlolo	Iringa
14.	Ilandutwa	Mgama	Mlolo	Iringa
15.	Ihomasa	Wasa	Kiponzelo	Iringa
16.	Ikungu	Wasa	Kiponzelo	Iringa
17.	Ufyambe	Wasa	Kiponzelo	Iringa
18.	Usengelindete	Wasa	Kiponzelo	Iringa
19.	Wasa	Wasa	Kiponzelo	Iringa
20.	Igombavanu	Igombavanu	Saadani	Mufindi
21.	Lugoda	Igombavanu	Saadani	Mufindi
22.	Ugenza	Ikweha	Saadani	Mufindi
23.	Ukelemi	Ikweha	Saadani	Mufindi
24.	Uyela	Ikweha	Saadani	Mufindi
25.	Isalavanu	Isalavanu	Saadani	Mufindi
26.	Kikombo	Isalavanu	Saadani	Mufindi
27.	Maduma	Isalavanu	Saadani	Mufindi
28.	Ugute	Isalavanu	Saadani	Mufindi
29.	Kitelewasi	Rungemba	Ifwagi	Mufindi
30.	Rungemba	Rungemba	Ifwagi	Mufindi
31.	Igomaa	Saadani	Saadani	Mufindi
32.	Tambalang'ombe	Saadani	Saadani	Mufindi
33.	Utosi	Saadani	Saadani	Mufindi
34.	Mapogoro	Madibira	Rujewa	Mbarali
35.	Miyombweni	Madibira	Rujewa	Mbarali
36.	Nyakazombe	Madibira	Rujewa	Mbarali
37.	Iheha	Madibira	Rujewa	Mbarali
38.	Mahango	Madibira	Rujewa	Mbarali
39.	Mkunywa	Madibira	Rujewa	Mbarali
40.	Ikoga Mpya	Madibira	Rujewa	Mbarali
41.	Nyamakuyu	Madibira	Rujewa	Mbarali
42.	Nyakadete	Madibira	Rujewa	Mbarali

4. DISCREPANCIES IN THE STEPS USED TO FORM THE WUAs

In forming WUAs there were some variations. The salient ones are summarised in Table 15.

Table 15: Discrepancies in the steps used to form WUAs in the GRRCA

Steps and other aspects	Discrepancy
Steps	
1. Awareness creation	<ul style="list-style-type: none"> There was no discrepancy, except in Mpolo WUA where the community initiated the process of WUA formation by requesting RBWO to help them form a WUA
2. Choosing villagers' representatives	<ul style="list-style-type: none"> In most villages 2 representatives were chosen for every sub-village, but for Halali one representative was chosen for every sub-village Four village level WUA leaders were chosen, unlike 5 for Mpolo WUA
3. Stakeholder analysis	<ul style="list-style-type: none"> There was no discrepancy in stakeholder analysis
4. Participatory Rural Appraisal (PRA)	<ul style="list-style-type: none"> With Mpolo WUA, a River Basin game was used to identify adverse effects of illegal diversion of river water. In most other WUAs PRA took the form of Participatory Water Resources Appraisal (PWRA) focusing mainly on water resources.
5. PRA outputs presentation	<ul style="list-style-type: none"> For some WUAs, e.g. Halali and LYAMUF, PWRA was done twice starting with some villages and then with all the villages
6. Choosing WUA leaders	<ul style="list-style-type: none"> In some places women were marginalised, resulting in having 1 woman WUA leader out of 5 WUA leaders, e.g. Mswiswi, Ndembera, and Mpolo Sub-catchment WUAs. No WUA had a female chairperson The numbers of leadership positions for WUAs were variable: In Halali, Mpando, Mkewe, and Mkoji WUAs the number was 4 while in the rest of the WUAs it was 5.
7. Preparation of the draft constitution	<ul style="list-style-type: none"> In some places village leaders were involved to develop draft constitutions; in other places they were involved just in improving the draft constitutions after they had been formulated in training seminars which they were not involved to attend.
8. Draft constitution presentation	<ul style="list-style-type: none"> There was no discrepancy.
9. Registration of the constitution	<ul style="list-style-type: none"> Almost all the WUAs' constitutions were sent to the Ministry of Water for registration, but in Mufindi District draft constitutions were sent to both the Ministry of Water and of PO-LGRA.
Other items of the processes of WUA formation	
10. Inclusion of treasurers in training seminars	<ul style="list-style-type: none"> In some places the treasurers at the village and sub-catchment WUA levels were not included in training
11. Training sub-village level WUA representatives	<ul style="list-style-type: none"> In most places sub-village water representatives were not trained
12. Number of days of training village water representatives	<ul style="list-style-type: none"> In most villages the training was for one week (5 to 6 days), but for Mpolo WUA the days were 15.
13. Involvement of local government leaders in training	<ul style="list-style-type: none"> In some places VEOs, village chairpersons, WEOs, Ward Councillors and Division Officers were involved in training, but in other places none or only some of the leaders were involved

5. SHORTFALLS IN THE WUA FORMATION PROCESSES

The instruments used for data collection for this study included a question on shortfalls of the processes used to form WUAs. The shortfalls mentioned by the key informant interviewees and the focus group discussants are summarised in Table 16.

Table 16: Shortfalls in the WUA formation processes

Shortfall	Solution suggested by interviewees
1. Delayed registration. This made the WUA leaders to start working less vigorously since they were sceptical about enforcing by-laws which were not yet approved. Lyandembela-Iringa, Mpando and Halali WUA leaders mentioned the problem. Delayed registration of WUA delays enforcement of by-laws formulated by WUA members to contain water use problems and conflicts over the uses	<ul style="list-style-type: none"> Delays in WUA registration will no longer be there from July 2009 since it will be being done at the RBWO level, rather than in the Ministry of Water and Irrigation.
2. Little funding on capacity building. There was too much reliance on donor funds	In future, alternative funding for WUAs should be sought. During this study, some funds for WUAs formation and capacity building were already available under the Water Sector Development Programme. District Councils' coffers could also be an alternative source of funding.
3. Not including leaders in training, e.g. with Ndembera-Iringa WUA leaders started being included in training in 2008 while the WUA was formed in 2006	<ul style="list-style-type: none"> Village leaders should be involved in training with village WUA members. The water resources management knowledge be taken to everyone all over Tanzania lest those who have the knowledge conserve the water resources while those who do not have the knowledge destruct the resources. There should be refresher courses for WUA leaders and members at regular intervals to keep them abreast of new developments in water resources management.
4. In the formation of some Apex WUAs, new ones that were merged with older ones were not given time to get experience, e.g. when Chimala Chini WUA (JUWAMACHI) was merged with Matamba WUA (JUWAMA), the former (JUWAMACHI) had just been formed, unlike JUWAMA leaders who had one year's experience.	<ul style="list-style-type: none"> In merging WUAs to form an apex WUA, a new WUA to join another WUA or other WUAs should first be given sometime, at least one year to get experience. This will help them integrate well with the other WUAs. The same period of time should be allowed for village level WUAs to join sub-catchment level WUAs.
5. In forming some apex WUAs, the time was too short, e.g. the formation of MACHIREMA took only in 2 days	<ul style="list-style-type: none"> Since most WUA members are adult learners, the process of forming a WUA at the village, sub-catchment and catchment levels should each take a week to allow time to educate the members and give them chances to ask questions.

Shortfall	Solution suggested by interviewees
6. In forming some sub-catchment and apex WUAs, the representation of members who were involved in voting for leaders was skewed, e.g. to form MACHIREMA that is shared by 7 villages in Makete and 7 villages in Mbarali, 6 members and 9 members who participated in voting came from Makete and Mbarali, respectively.	<ul style="list-style-type: none"> In future the representation should be proportionate to the number of villages, to avoid the possibility of one side dominating the other one or other sides.
7. The condition that a leader has to come from the last village downstream in a river sub-catchment-based WUA was said to be unrealistic.	<ul style="list-style-type: none"> The condition of having a leader from the last village downstream in river sub-catchment-based WUAs should not apply, to avoid chances of bringing in unsuitable leaders. So long as every village and sub-village is represented, even the people living far downstream will be well represented.
8. Of the WUAs under Mkoji Apex WUA, river sub-catchment-based WUAs are disadvantaged in terms of representation in the apex WUA; they have only one representative, a number that is less than that of village level WUA leaders while such a river-based water scheme is shared by more than one village.	<ul style="list-style-type: none"> Since every village under Mkoji Apex WUA has 4 representatives, every river sub-catchment based WUA under Mkoji Apex WUA should have at least 4 representatives in the apex WUA.
9. Aquacultural ponds had no representative in Mkoji Apex WUA	<ul style="list-style-type: none"> Water users for aquaculture purposes should have a representative in apex WUAs

6. EXTENT TO WHICH WUA FORMATION WAS PARTICIPATORY

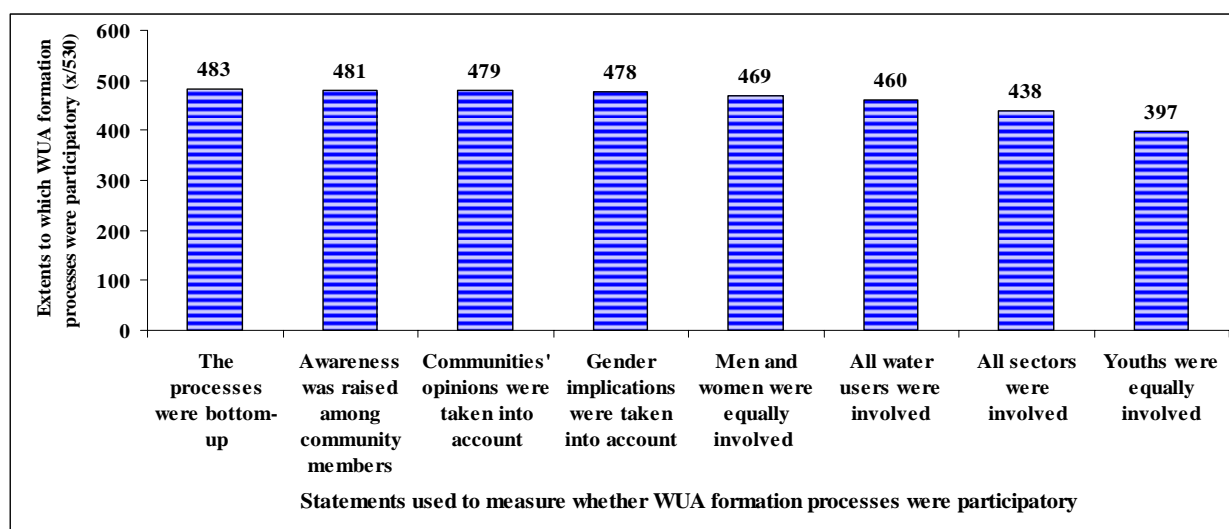
The extent to which the processes of WUA formation were participatory was determined using an index scale which comprised 8 statements that are seen in Table 17. Every one of the 106 people contacted was asked to state whether he/she strongly disagreed, just disagreed, had no idea, agreed or strongly agreed with each of the statements. The 5 alternative answers had 1, 2, 3, 4, and 5 scores, respectively. In this case the more the points scored by an individual, the more positive his/her opinions were favourable about the processes of WUA formation having been participatory. The minimum number of points one could score was 10, if one had chosen strongly disagree (1 point) for each of the 8 statements. The possible maximum number of points one could score was 40, if one had chosen strongly agree (5 points) for each of the 8 statements. Therefore, the number of points scored by every one could range from 10 to 40. The average number of points scored by all the 106 interviewees was 34.76 over 40. This means that the processes were participatory for about 87% (i.e. $34.76/40 \times 100$), according to the interviewees who participated in the processes of WUA formation.

Besides, the total numbers of points scored for each of the 8 statements by all the 106 interviewees were added up. Since all the interviewees were 106, the minimum number of points scored by all the respondents could $106 \times 1 = 106$; the maximum number of points scored by all of them could be $106 \times 5 = 530$. The results are presented in Table 17.

Table 17: Results on whether the processes of WUA formation were participatory

Indicator of whether the process of WUA formation was participatory (n = 106)	Sum	Extent (%)
The processes were bottom-up	483	13.1
Awareness was raised among community members	481	13.0
Communities' opinions were taken into account	479	13.0
Gender implications were taken into account	478	13.0
Men and women were equally involved	469	12.7
All water users were involved	460	12.5
All sectors were involved	438	11.9
Youths were equally involved	397	10.8
Total points scored on the index scale	3685	100.0

The results in Table 17 show that the issue of the processes of WUA formation having been bottom-up was done best but that the issue of youth involvement was done least well vis-à-vis the other issues. The points in the two cases were the most and the least, respectively. The values in Table 17 have been used to draw Figure 1, to make the extents more conspicuous.

**Figure 3: Extent to which the WUA formation processes were participatory**

Besides the results presented in Table 17 and Figure 1, the points scored by individuals were compared by sex and district. Based on the sex of interviewees, using a t-test, it was found that men scored fewer points (an average of 34.67 points) than those scored by women (an average of 34.95 points). This means that women were more of the opinion that the processes were participatory. However, the number of points scored by the two groups of interviewees did not differ significantly ($p = 0.769$). Based on the districts where the interviewees were based, the extent to which the WUA formation processes were participatory, one-way ANOVA was used to compare the points scored on the statements implying whether the processes of WUA formation was participatory, and the results are presented in Table 18.

Table 18: One-way ANOVA comparison of points scored in various districts

District	Number of respondents	Mean points scored on an index scale	F	Sig.
Iringa	10	38.20	2.799	0.030
Mufundi	21	32.62		
Njombe	36	35.19		
Mbarali & Makete ³	26	34.46		
Mbeya	13	35.00		
Total	106	34.76		

Besides the above quantitative information on how the processes of WUA formation were participatory, various interviewees and focus group discussants gave their views on how the processes were participatory. The main points they gave were the following ones: (a) DFT took into account communities' views; (b) in some places, e.g. Mpolo, the community members wrote to the RBWO requesting for being assisted to form a WUA; (c) PRA tools were used; (d) men and women were involved representing other people; (e) various water uses and users were well represented in the processes of forming WUAs; (f) the facilitators of the process followed specifications recommended by RBWO in forming WUAs; (g) communities analysed the problems and prioritized solutions; (h) WUA leaders were elected democratically; and (i) local government leaders were involved in the processes of WUA formation. These points given by the key informants and focus group discussants are realistic; most of them reflect the Dublin principles reviewed in Section 2.2.3.

7. PROBLEMS/CHALLENGES FACED DURING WUA FORMATION

Number 6 of the terms of reference, as seen in Appendix 1, was to "Describe the problems encountered and challenges faced during the formation of various Sub-catchment WUAs from both facilitation team and WUA perspectives." This item was worked on by asking questions to relevant interviewees. For the problems related to the facilitation team, RBWO, village leaders, WUA leaders and members, and the officer who trained the facilitation team were asked. For the problems related to the WUA perspectives, everyone was asked. The results are presented below.

7.1 Problems Related to the District Facilitation Teams

1. Their number decreased due to some of them being transferred.
2. Some of them were less skilled in participatory methodologies.
3. Some of them had little follow-up of the WUA activities, but this may be explained by the facilitators having many other assignments in the District Council Departments where they are based.

7.2 Problems Related to the WUA Perspectives

1. Some villagers constrained the process of WUA formation as follows: when some old people were told during PRA outputs presentation that they should stop cultivation at water sources, they told the facilitators and WUA leaders to give them an alternative source of income if

³ The two districts were combined because respondents from Makete were only 5 while the two districts shared MACHIREMA Apex WUA

- they stopped to grow crops at water sources. They were also much opposed to the distance recommended to spare at river banks and at water sources.
2. Threats by villagers to WUA members and leaders. An example happened at Bumilayinga Village, Bumilayinga Ward, Malangali Division, Mufindi District where a farmer who was farming by destructing Iditima stream banks threatened a WUA leader in 2007: “*Tutaona sasa kama utanifanya lolote*”. Which means: “We shall see if you will take any action against me.” They elaborated that if WUA leaders argue unwisely with such people, the people can harm them using supernatural powers they have. They added that for uprooting bamboos the farmers were saying that it was very tedious, and they were telling the WUA leaders. “We agree with the idea of uprooting our bamboos but we are unable to do it; uproot them by yourself”. On this statement the WUA leaders said that it was controversial. Therefore, they (WUA members) were not doing the uprooting.
 3. In forming WUAs, areas with the most critical conflict were given priority. Therefore, RBWO approached WWF to assist technically and financially. It was good to start solving the conflicts urgently, but the phrase “Preventions is better than cure” was not abode by, and this was communicated to RBWO Officers. Reacting to this statement, they said that they were compelled by inadequate financial resources to start WUAs timely in all places where WUAs were needed. They added that RBWO had plans to start WUAs in all appropriate places without waiting for conflicts over water resources. They substantiated this with a plan they had to transform Ruaha Water Company into Ruaha WUA in Kilombero District where there was no conflict over water resources.
 4. The guidelines for forming WUAs were not written. One of the RBWO Officers said: “Guidelines for forming WUAs were not written anywhere; we knew them from our heads.” This implies that different facilitators might have used different approaches
 5. In some villages, village leaders were delaying to organise meetings. An example is given in Box 1.

Box 1: Delay in organising village meetings delayed WUA formation

In some villages, leaders delayed to organise meetings through which WUAs were formed. This made the exercises of WUA formation sluggish in places where the problem happened. This was more serious in villages where the response of villagers to attend the meetings was poor. An example was in Igurusi village in April 2008. In this case, RBWO officers asked village leaders to convene a meeting so that they would go there to discuss with them water problems and plan with them how to solve them, including formation of a WUA. Right from the beginning the Village Chairman told them. “*Ni vigumu kuwa na mkutano huo kwa kuwa watu wangu hawakusanyiki*”. This means “It is difficult to have the meeting since my people do not gather together”. They pleaded with him to make extra effort to get the meeting organised. On the same day he took a loud speaker and went throughout the village shouting requesting them to arrive at the Village Government Office for the meeting at 1400 hours three days later. After three days when the RBWO officers went to the village for the meeting they found only the leaders. They waited for the villagers from 1400 hours until 1700 hours but nobody turned up. Therefore, they left without having the meeting, but before leaving they asked the village leaders to nominate 2 people from each sub-village to be representatives of all the villagers in the water committee. The village had 8 sub-villages, and representatives were chosen from each of the sub-villages. This shows that poor turn-up of villagers for meetings in some villages contributed to having undemocratic elections of WUA leaders.

6. Misconceptions about the aims of the meetings through which WUAs were formed also constrained the processes of WUA formation in some villages, as Box 2 shows.

Box 2: Village leaders constrained WUA formation process

In Ikungwe Village, Wasa Ward, Kiponzelo Division, Iringa District, in September 2006 in a meeting to plan how to conserve the environment and manage water resources, villagers misconceived of the aim of the meeting as being about discussing how to block the water of River Ruaha. This would result in floods which would lead to break down of their houses so that they migrate to other places. They thought the Government wanted to drive them out of the area without telling them so. Therefore, two of the four representatives who were selected to represent the villagers in a training seminar did not go for the seminar because their fellow villagers threatened to harm them if they attended it. They considered the attendance as betraying them. From this incident, it is likely that even the two who represented the villagers might not be active representatives.

7. Slow learning ability of some community members selected to attend seminars. This problem was mitigated by insisting on the selection of representatives based on a set of criteria, including being literate.
8. Difficulty in getting people paying for water, e.g. “Why should we pay for water which is a gift to us from God’s?”
9. In some places elections of leaders was less democratic, as narrated in Box 3.

Box 3: An extreme case of a WUA leaders election process being undemocratic

Soon after Ndembera Apex WUA was formed, elections were held to choose leaders of the WUA. Since the apex WUA is a union of 3 WUAs (LYAMUF-Mufindi), JUBODOMLYA (Iringa), and JUWABONDECHI (Mbarali), the apex WUA leaders had to come from the leaders of the 3 WUAs. The source of the river is in Iringa District, particularly at Udumuka Village, Ifunda Ward. The people of Iringa expressed superiority complex boasting of the source of the river being at their place. They said: “If you don’t give us a top leadership position it will be impossible to take care of the water source that is at our place.” On 27/2/2009 when the elections were going on by voting for 3 people for the position of Chairperson on the condition that the one who would be the second in terms of the number of votes would be the Vice-Chairperson, the Chairperson came from Mufindi and the Vice-Chairperson came from Mbarali. The people of Iringa were so angry at missing any of the 2 top leadership positions that one of them stood up and said: “If you don’t give me the position of Secretary, the elections are going to be disrupted”. Negotiation ensued among the three groups of WUA leaders. During the negotiations, the people of Iringa threatened that if a secretary was not selected from them they would spoil the source of water maliciously and make sure that water from their place did not reach Mufindi and Mbarali. Since these were serious words and quarrelling was much, the elections ended there that day without choosing other three leaders (the Secretary, the Assistant Secretary, and the Treasurer). The elections resumed the following day (28/2/2009), and the secretary was elected from Iringa.

10. Reluctancy to recognize technical information, e.g. “*Vitindi havinyonyi maji mengi; toka enzi za mababu zetu vilikuwepo kwenye vyanzo vya maji na maji yaliendelea kutoka mengi tu.*” This means: “Bamboos do not consume substantial amounts of water; from the era of our fore fathers they were growing at water sources but much water went on flowing.”
11. Difficulty in discouraging the habit of diverting and hoarding water not allowing it to flow downstream timely.



7.3 Some suggestions given by the interviewees to solve the problems

1. About having village-, river sub-catchment-, and water use scheme-based WUA memberships, most interviewees said that it was better to have WUAs for multipurpose water uses with the leaders and members speaking for all water users, unlike having WUAs based on water use schemes in which the representatives tend to be biased to the people with whom they share the schemes. An extremely negative view of the water use scheme based WUA was given by LYAMUF leaders and members who said: “*Panya wengi hawachimbi shimo*” i.e. “Many rats do not dig a hole.” They elaborated that if there are WUAs for various water users, quarrels will increase as each group will be speaking for its members; they recommended having centrally administered WUAs with good representation in relevant sub-villages and with regard to various water uses.
2. The monetary values of fines to be charged for recurrent cases of violation of WUA constitutions should be increased.
3. Violators of the by-laws should be arraigned in the court.

8. LESSONS LEARNT DURING WUA FORMATION

Number 7 of the terms of reference, as seen in Appendix 1, was to “Document/summarise the lessons that have been learned, by drawing on the WUA formation process summaries, and describe the changes that have taken place in the Sub-catchment WUAs formation processes and the reasons thereof.” This item was worked on by asking the key informants and focus group discussants about lessons they had learnt from the processes of WUA formation. Lessons learnt by the researcher are presented in terms of the conclusions that are presented in Section 10. The lessons learnt are presented in two subsections: 8.1 that is on lessons learnt, and 8.2 that is on changes that have taken place in the Sub-catchment WUA formation processes and the reasons.

8.1 Lessons Learnt from the WUA Formation Processes

1. By facilitating the processes of WUA formation, communities came up with fruitful ideas and plans of activities to contain the problems.
2. Rigorous processes of WUA formation are so costly that RBWO has to get financial support from elsewhere in order to be able to form them, especially because the activities for WUAs are not budgeted for by the Ministry of Water and Irrigation and District Councils. This is compounded by the fact that the GRRCA is so vast that substantial resources are needed to form WUAs all over the area.
3. The use of the words *jumuiya* (which means association), *muungano* (which means union) and *baraza* (which means council) to name WUAs is not consistent. Some sub-catchment WUAs are called *jumuiya* (e.g. *Jumuiya ya Watumia Maji Bonde Dogo la Mito Mbukwa, Mtitafu and Lumbidzi*) while others are called *muungano* (e.g. *Muungano wa Watumia Maji Bonde Dogo la Mto Mpolo*). Mkoji and Ndebera Apex WUAs are called *baraza*, but MACHIREMA, which is also an apex WUA is not called a *baraza*. For MACHIREMA even a word which connotes water resources use is not there.
4. The processes taught the community members that the rates of water flow that had decreased in their springs and rivers could be reversed.
5. The education provided during WUA formation helped enlighten villages on water resources, putting them in a position to be more responsible for management of the resources. The education also informed them of the amount of water needed for various crops and the frequency of irrigation.

6. If villagers are well organised they can do a lot to conserve water resources and use them economically.
7. The processes of WUA formation made some of the community members realise that they were doing a lot of environment destruction. One of the WUA members for LYAMUF WUA said: “We were doing substantial destruction of water resource without our awareness.”
8. The processes provided an opportunity to get good leaders for water resources.
9. Villagers were reluctant to follow by-laws set during WUA formation for fear of losing income not because the by-laws were bad.
10. The processes taught the villagers that water is a scarce resource which ought to be cared for well and used economically.
11. They also taught them that conflicts over water use could be prevented through having a WUA coordinating equitable sharing of the water resources.
12. “The processes were democratic and participatory; they should be emulated elsewhere”, said one of the discussants from Mkewe WUA in Njombe District.
13. The processes gave an opportunity to realise good and bad uses of water resources.
14. The processes gave communities knowledge of rights of water users and how to distribute water for irrigation equitably to everyone.
15. They also gave them knowledge of benefits of conserving the environment and its impact on water resources, e.g. to prevent water pollution and restriction of illegal water diversion.
16. They also educated them on the impact of deforestation on water resources not cultivating on water banks
17. If local communities are educated on environmental and water resources problems prevailing in their areas, they understand them and are willing to cooperate with experts and policy makers to solve them.
18. Inclusion of government leaders and all sectors concerned in a WUA formation gives better results.
19. The processes were participatory. Therefore, they enabled people to realise problems existing and how to solve them.
20. Participatory planning on how to solve the problems created a sense of commitment to solving the problems.
21. The community members learnt how to identify and prioritise problems that were existing and devise mechanisms to prevent similar problems in future with regard to water resources.
22. Mutual understanding and collaboration between upstream and downstream dwellers is important for managing water resources in a catchment area.
23. Lust for positions of leadership, and if elections of WUA leaders are not well supervised, can result in the elections of WUA leaders being undemocratic, like the way it happened with Ndembera Apex WUA.
24. In undertaking processes to formulate WUAs, leaders, especially political ones, should not be trusted; communities should be trusted because they are many and can sue the leaders if they go against the regulations.
25. Women were found to contribute more to water resources decline than men through bottom valley cultivation (*vinyungu*).

8.2 Changes that Have Taken Place in the Sub-catchment WUAs Formation Processes

During field work for this study, the DFT members and the officer who trained them were asked about the differences between the processes of WUA formation in the 1990s and the 2000s. It was difficult to get responses from DFT members about WUAs formed before 2003 since the DFT members had not yet been appointed to be DFT members, and they were trained on the 9-step procedure described in Section 3.2. The key informants gave a few differences, mainly with respect to factors to consider in starting a WUA. To these, observations by the consultant were added. The differences are summarised in Table 19.

Table 19: Some differences in the formation of WUAs in the 1990s and the 2000s

Aspects	WUAs formed in the 1990s	WUAs formed in the 2000s	Reasons
1. Linkage of WUA aspects with national policies	The linkage was lower	The linkage is higher	Some of the policies were not existing; now they exist, e.g. NAWAPO (2002) and NSGRP
2. Registration of WUAs	Registration was centralised at the Ministry of Water; hence registration was taking 3 to 5 years	From July 2009, the process of registration is centralised to take place at the RBWO level	To reduce the duration of the WUA registration process
3. The concept of integrated water resources management (IWRM)	IWRM was weak	IWRM is strong	To take into account other factors which impinge on water and heed Global Water Partnership stipulations including the requirement that water management should be decentralised to the lowest level.
4. Formation of WUAs using village, water sub-catchment or water use scheme approach	Village and water use scheme approaches to forming WUAs dominated	Formation of WUAs using the water sub-catchment approach dominates	To involve all users of the same river at the same time
5. Number of sub-catchment WUA leaders	The common number of sub-catchment WUA leaders was 4.	The common number of sub-catchment WUA leaders is 5.	To make the leadership load lighter so that people can have ample time to do other activities

9. BEYOND WUA FORMATION

Water users associations (WUAs) have been formed not for the sake of forming them; they have been formed to build the capacity of rural communities and districts in the GRRCA so that they can plan, manage and utilise water and related natural resources in sustainable ways, alleviating poverty and improving livelihoods, as explained in Section 1.1 of this report. During field work, many interviewees stated some points which were beyond the process of WUA formation that

was at the heart of the consultancy. Rather than neglecting the points, they were taken up and are given here so that they may inform interventions to manage better the WUAs so that they can be sustainable. The points are divided into those which reflect the strengths or rather benefits of WUAs and those which reflect factors that threaten the sustainability of WUAs.

9.1 Benefits of WUAs

1. Some discussants said emphatically that WUAs are effective at handling conflicts over water resources use.
2. Others said that WUAs are very helpful in collecting water user fees.
3. WUAs help to enforce and amend by-laws governing water use. For example, in Chalowe village, Mdandu Ward, Mdandu Division, Njombe District, the fine for grazing livestock on farm crops was set by WUA leaders at TSh 10,000 per head of livestock. However, since the problem was critical, the villagers proposed that it be TSh 20,000 to make herders more careful. The amount of fine for the offence was increased to that much.
4. Although the process of WUA formation was hard and much time consuming, its fruits had started being reaped. The following examples attest to this.
 - In Mufindi District, Kingemba tributary that used to dry up during the dry season was no longer drying since 2006 after starting managing it well through LYAMUF WUA in 2004.
 - In Njombe District, Halali River used to dry from July to January sometime up to 2003, but after interventions to restore its water flow were implemented since 2003 through Halali Sub-catchment WUA, it was no longer drying since 2007. In 2007 and 2008 it dried only from September to October.
 - In Mufindi District, Ndembera Apex WUA leaders and members said: “*Kuna unafuu; chombo hiki ni muhimu. Hata wanaokipinga wanajua hivyo ila tamaa ya mapato ndiyo inayowafanya waendeleo kuharibu vyanzo vya maji*”. This means: “There is improvement; this organ is important. Even those who are against it know its importance, but they go on destructing water catchment areas due to their lust for income.”
 - At Mgemsi water source, Wangama Village, Wangama Ward, Imalinyi Division, Njombe District, there used to be *Eucalyptus spp* and pine trees which are known to consume excessive amounts of water leading to water decline at water sources. Due to this, water was drying up at the source from June to November every year, but the trees were uprooted in 2007. As a result, in 2008 the source started having water all the year round.
 - In Chimala Ward where a male farmer threatened to wound or kill another male farmer with a machete suspecting him of being the cause of his not getting water for irrigation downstream, such conflicts have decreased substantially.

9.2 Factors Threatening the Performance and Sustainability of WUAs

1. Uncertain and inadequate funding. During field work there were complaints from WUA leaders that they were problematically getting fuel for their motorcycles. Also DFT members complained that they were no longer working as a team due to lack of facilitation. One of them said: “We are no longer working as a team of facilitators due to lack of facilitation from RBWO and WWF; we do water resources management activities under RBWO and WWF erratically by combining them with our other routine activities as District Council employees, when such activities emerge.”

2. Some users of substantial amounts of water are given permission by high rank government leaders (e.g. RBWO or DED) to divert water without informing WUA leaders and members who would be in a good position to advise on the modalities of how to divert how much water, for how long, and so on.
3. Some community members are still reluctant to adopt the specifications for management of water resources, e.g. reluctance to uproot bamboos, pines and *Eucalyptus spp* trees asserting that it is too laborious. For example, in Halali WUA community members believe that bamboos thriving at water sources do not contribute to decline in water. Another example was in Mufindi and Iringa Districts where there were complaints that the distances allowed to cultivate from river banks and from water sources were too wide (20 m and 50 m, respectively). Due to these complaints, such people are likely to violate the specifications, if WUA leaders are dormant. The apex WUA leaders said that in future the solution to these problems would be arraigning the defaulters in the court of law. Since the resistance was high, it is further explained in Box 4.

Box 4: Resistance to stopping practices that lead to water flow decline

In 19 villages located in Ifunda, Lumuli, Maboga, Mgama, and Wasa Wards of Iringa District where Ndembera-Iringa WUA works, it was decided that 50 m be left from a water source and 15 m from a 5-m wide river, and 5 m from a 3-m wide spring. People were educated on this, but one female farmer violated the specifications deliberately saying that it was impossible for her to leave so much distance as the farm near the river was her main source of food. She exchanged the following words with WUA leaders:

Farmer: It is impossible for me to leave so much distance, unless I am compensated in advance; otherwise show me a similar place where I am going to farm.

Water leaders: For how long have you been farming at the place?

Farmer: I have been farming here for the last 15 years.

Water leaders: You and the water who came here first?

Farmer: Our fore fathers used to grow crops up to river banks, but water went on being much.

WUA leaders: They were few; nowadays we are many; if we do so, no one will get water.

WUA by-laws, albeit the WUA constitution had not yet been registered, had to be used to stop the farmer from cultivating at the river bank. This shows the need to get the WUA constitutions registered as soon as possible after they are formulated so that they can be used to deal with such deliberate violators of water use rules. It also shows that constant surveillance in river catchment areas and water sources is needed so as to net people like the one above. It also shows that violation of water use by-laws is done even by people who have got relevant education, for various reasons, including lack of other sources of income and food.

A similar case also happened in Njombe District: In Samaria Village, Makoga Ward, Imalinyi Division, Njombe District in 2004 during Mpando WUA formation, WUA leaders measured 50 m as the radius around Idindimilwe water source in Igongwi sub-village and insisted to the owner of the farm plot (a male farmer) that he should never cultivate within the 50 m – radius. After sometime, they went there for another round of surveillance; they found that he had cultivated within the catchment area again. He was fined Tsh 2,500, and he paid the fine. But he complained: “*Serikali hizi nazo! Mbona zamani haikuwa hivi?*” This means “What governments we have! Why were things not like this in the past? This implies that in case WUA leaders stop the surveillance of water sources and resources many people will resume the malpractices that lead to environmental degradation and decline of water resources.

4. Other community members discourage the work of WUA leaders, for example, in Mufindi, one villager told WUA leaders: “*Nyiye mnakazana kuzuia wananchi kulima karibu na mito na kwenye vyanzo vya maji kwa kuwa mmpewa baiskeli bure.*” This means: “You are making effort to prohibit villagers from cultivating on river banks and water sources because you have been given free bicycles.”
5. Little collaboration among WUA, government and political leaders. This is reflected in the contents of Box 5.

Box 5: Little collaboration among WUA, government and political leaders

At Igelehedza village there was violation of the by-law which prohibits people from cultivating on water banks. The defaulter was the CCM Branch Chairman in the ward. WUA leaders took the case to Ilembula Ward Council. Instead of the defaulter paying a fine, he pleaded with the Ward Councilor for not paying, but the premises on which he did so were unknown to WUA leaders. Therefore, the WUA leaders collaborated to press for him to pay. He paid TSh 30,000 but later on there was hatred between him and the WUA leaders. To emphasize the lack of collaboration among the leaders, WUA leaders and members said: “Here (Ilembura) we work in difficult situations since village, ward, and WUA leaders do not work in harmony with us. We wish our constitution was registered soon since it would give us more power to enforce our WUA by-laws.”

There was also little collaboration among WUA leaders themselves. For example, one Chairman of both an apex WUA and a sub-catchment WUA (Name withheld) said: “This work is difficult; when I call for a meeting, the WUA members do not come, and when they come I have to write the minutes instead of the secretary writing them.” Another discussant in the group said: “We, leaders of the WUA, have a big problem of not working as a team. Who will reconcile us so that we can have the same voice?” They elaborated that they needed much cooperation from ward and division leaders, and from the District Executive Director.

6. Double standards in application of WUA by-laws. In some places WUA by-laws are applied discriminatively to various people as narrated in Box 6.

Box 6: Discriminate application of WUA by-laws

At Ilembula there is a water catchment called Chamsoholo. About 350 *mivengi* trees (*Syzygium spp*) have been planted at the water source, and no one is allowed to cultivate or herd cattle in the area. However, cattle including those owned by the Ward Councillor were caught grazing in the area, and their owners were each charged TSh 6,000 per head of cattle, but the councillor colluded with village leaders to get him excused. He managed to get out of the mess without paying any fine while other people whose cattle were caught with his paid the fine. Another example was in Muhaji Village (MBUMTILU Sub-catchment WUA) in May 2009: A boy herder who was about 12 years old grazed cattle near Lihogasa Dam while that was prohibited and the fine for violation of the rule was Tsh 20,000 per animal. He was caught and arraigned to the VEO’s office, but the boy was released without any fine!

However, in other areas there is good cooperation among the leaders. For example, in 2008, some villagers of Mambi, Ilongo, Luhambule and Chamolo villages (Under Mkoji Apex WUA) diverted illegally the water of Mambi River. The Chairman of Mkoji Apex WUA arraigned them in the Primary Court at Igurusi. Village leaders interferred by “pleading” with the jugde to excuse them. He informed RBWO and WWF officers to help him ensure that the culprits were punished. Eventually, 7 people who were convicted of having done the offence were each fined TSh 50,000. This shows that state organs can be very effective in enforcing WUA by-laws. Such serious WUA leaders are highly needed.

7. Some political leaders confusing community members on practices to manage water resources. An example was found with Halali Sub-Catchment WUA as narrated in Box 7.

Box 7: Political leaders confusing community members on water by-laws

In Luduga Ward, Wanging'ombe Division, Njombe District, WUA leaders had made commendable strides on objecting villagers to cultivating at valley bottoms (*vinyungu* agriculture, as it is famously called locally). Such agriculture has been proven to be behind water flow decline, among other factors. However, for the sake of getting cheap popularity from the villagers, one contestant for the position of Ward Councilorship told the villagers: "*Limeni tu vinyungu*", which means "just go on cultivating at valley bottoms". However, since the villagers had already been well educated on the adverse affects of *vinyungu*, they were not happy with the statement. Therefore, they informed the District Executive Director of that information. The DED assigned the Chairman of DFT to deal with the issue on his behalf. The DFT Chairman consulted the one who said the words; he was compelled to revoke his words and apologize.

This shows that leaders like the above one can constrain the effectiveness of WUAs, but that if communities are well educated they can still find ways to maintain the applicability of by-laws for water resources management.

8. Wrangling over transport facilities donated by WWF. This was reflected in conflicts over bicycles donated by WWF as narrated in Box 8.

Box 8: Wrangling over bicycles donated by WWF

In Malangali Village, Luduga Ward, Wanging'ombe Division, Njombe District, a bicycle was received which was meant for village level WUA leaders (Chairperson and Secretary) to use for water issues. However, the bicycle did not reach them since 2006 when it was issued; it still had not yet reached them until the day of this study, 23/6/2009. The Village Chairperson restricted it to his own use, contending that it was a village government's bicycle. In October 2007 the case was reported to Ward Leaders; they requested the Village Chairperson to hand the bicycle to the WUA Leaders at the village level, and he said that he would do so, but he didn't. It was expected that the case would be resumed in September 2009.

A similar case was found in Samaria Village, Makoga Ward, Njombe District. In this case, like in the previous one, village government leaders denied the village water committee the opportunity to use a bicycle meant for them, claiming that it was for all village leaders, not only for the water committee. Due to the claim, every one was using it, but when it became defective no one was ready to repair it; hence it was parked in the village office where some of its nuts were removed deliberately by individuals who used them to repair their own bicycles. The bicycle was missing four spokes on the rear tyre, air in both tyres, the bell, and some nuts. It was not in use due to being defective. The bicycle is pictured in Figure 4.

If this happened in many villages, village level WUA leaders would be constrained much in doing WUA-related activities, and this would affect water management activities. This reminds us of including village leaders in WUA activities so as to equip them with knowledge to support WUA leaders.



Figure 4: A defective and neglected bicycle donated by WWF after wrangles over it

10. CONCLUSIONS

The conclusions presented here reflect lessons learnt by the consultant from the processes used to form WUAs in the GRRCA. The conclusions have been drawn from the experiences gained from field work and the findings of the study. Since the conclusions are substantial, they are presented in sub-sections to make it easy for the reader to link them with the findings.

10.1 Conclusions Based on the Discrepancies in the Steps Used to Form WUAs

1. Communities now sharing Mpolo River WUA took a very commendable step to be the first ones to write to RBWO to request for being assisted to form a WUA.
2. The numbers of WUA leadership positions and leaders that were variable at the village and sub-catchment levels show some inconsistency in WUA formation processes.
3. Where women leaders were very few in WUAs, e.g. Mkewe WUA, it was said that women had got few votes, but one of the main reasons was that few women were included among candidates who were voted for.
4. PRA in the form of participatory water resources assessment (PWRA) dominated the exercises of assessing water and other resources because it was the method on which DFT were trained. Since nation-wide Local Government Authorities (LGAs) are using the Opportunities and Obstacles to Development (O& OD) approach, this approach could also have been used to assess water resources during the formation of WUAs.

5. In most places the preparation of the draft constitution did not include LGA leaders (including village and ward government leaders) because the fact that the leaders are members of the state organs who can help a lot enforce WUA by-laws was overlooked
6. The fact that draft constitutions of Mufindi District WUAs were sent to PO-RALG (besides the Ministry of Water) for registration was a kind of inconsistency, albeit it was well intended to get the constitutions registered as soon as possible.
7. Exclusion of treasurers in training was an oversight since, as custodians of the WUA funds, they should be well versed with the activities of WUAs.
8. The fact that in some villages sub-village level WUA representatives were not trained was not good since they should be well versed with the activities of WUAs so that they can educate other villagers on WUAs.
9. The finding that village and sub-catchment level WUA leaders were trained for 3 to 15 days implies high inconsistency in the number of days for training them
10. Having not included VEOs, village chairpersons, WEOs, Ward Councillors and Division Officers in training in some places was an oversight.

10.2 Conclusions Based on Shortfalls in the WUA Formation Processes

1. Inadequate funding of WUAs, which was characterised by too much reliance on donor funds, was compounded by the fact that ward councillors that are law makers at the district level were not well mainstreamed in the WUAs; hence they were not in a position to lobby for WUAs to be assisted by the DEDs' offices.
2. Inclusion of village and ward leaders two years later after formation of Ndembera-Iringa WUA shows that not including them at the beginning was an oversight
3. In WUAs formed by merging two or more WUAs while leaders of one of the WUAs have just been elected, the experienced leaders of WUAs that were formed earlier may dominate the naïve ones, as it happened with JUWAMACHI that was merged with JUWAMA while the former had just been formed and the latter had one year's experience. The domination may result into low cooperation among the leaders.
4. Since, as seen in the findings, the time for forming some of the WUAs was too short (e.g. 2 days with MACHIREMA). So short time may have repercussions on managing such WUAs.
5. Where a number of WUAs are to be merged while they have the same number of villages, but the number of representatives to vote from each of the WUAs is not the same or proportionate like it was for JUWAMA and JUWAMACHI, the WUAs with more members may bias the election results, although it didn't happen with JUWAMA and JUWAMACHI when they were forming MACHIREMA.
6. The condition that a leader has to come from the last village downstream in a river sub-catchment-based WUA was unrealistic since it may enable some incompetent people to be WUA leaders.
7. Since river sub-catchment based WUAs under Mkoji Apex WUA are disadvantaged in terms of representation in the apex WUA by having only one representative, a number that is less than that of village level WUA leaders while such river-based water scheme has more than one village, it is high time the schemes had more than one representative in the apex WUA.

10.3 Conclusions Based on the Extent to which WUA Formation was Participatory

1. Based on the finding that the extent to which processes of WUA formation were participatory was 87%, it is concluded that the processes were done generally well, and this was also supported by qualitative information, including the points that community members analysed

problems, prioritised solutions to the problems and chose their own leaders. However, since the number of points scored on the index scale used which comprised statements implying the processes of WUA formation having been participatory or not was significantly different across the districts while Mufindi, Makete and Mbarali were at the bottom, it implies that processes of WUA formation were less participatory in those districts.

2. Based on the finding that youth inclusion in the processes of WUA formation was the factor least considered among the eight factors used to compose the index scale that was used, youths were passively involved in the processes. This was an oversight since they are the majority of water users in some activities, especially irrigation and brick making. It was contrary to women who were well involved.

10.4 Conclusions Based on Problems/Challenges Faced During WUA Formation

1. Based on the finding that the number DFT members decreased due to being transferred and other causes, shortage of facilitators in some places constrained the processes of WUA formation.
2. Based on the finding that some DFT members were less skilled in participatory methodologies, if two or more less skilled DFT members teamed up to facilitate a process of WUA formation, some elements of the process might not have been done well.
3. Since the formation of WUAs in the GRRCA was based on guidelines which were not written, people who may wish to emulate the guidelines and steps used will get difficulty since relying on the memory of the people who facilitated or participated in the processes of WUA formation may lead to many errors in the narration of the processes, due to memory lapse.
4. In some few WUAs elections of WUA leaders were less democratic due to, among other factors, some people having lust for specific leadership positions. Moreover, replacement of WUA leaders who had resigned and those whose terms of leadership had expired was not being done timely. This constrains the effectiveness of WUAs.
5. Since a sizeable proportion of the villagers in the 6 districts where the study was conducted did not believe in bamboos growing at water sources causing water decline at the sources, and some of them were telling leaders to uproot the bamboos by themselves, the bamboos are likely to be one of the major causes of water decline in the future.

10.5 Conclusions Based on the Lessons Learnt from the WUA Formation Processes

1. The processes of WUA formation were very educative to the communities on various issues including water resources assessment and environment management.
2. The use of different words (*jumuia ya watumiamaji* and *muungano wa watumiamaji*) to name the same thing (WUA) may confuse some stakeholders. Moreover, some names of WUAs like MACHIREMA do not reflect water resources. Moreover, the word *baraza* is not consistently used in naming apex WUAs.
3. The approach used by the trainer of facilitators to get the water resources stakeholders realising the problems, prioritising the solutions to the problems and mentioning the need to establish WUAs to solve the problems was highly professional. The process of WUA formation was rigorous, participatory, and bottom-up. Thanks to the trainer of DFT teams and the DFT members who saw to it that the process was so rigorous. Therefore, chances are high for the WUAs to be sustainable since the approach had high potential to inculcate a sense of ownership of the WUAs in the minds of the villagers.

4. The suggestion given by most of the interviewees that WUAs should be centrally administered with good representation in all sub-villages and with regard to various water uses is sound. The consultant concurs with this view to a large extent.
5. There are many people who have negative views about WUAs while WUAs have an international reputation in enhancing good management and sustainable use of water resources. This is reflected in negative statements that were found during the study, which imply that, without continuous supervision of water resources in the area, people who believe in those statements can easily go back to various practices that lead to water decline. Such statements included: “*Tijohile ijenyo*” (in the Bena language, which means “We are tired with you”, i.e. with the messages about management and economical use of water resources), “*limeni tu vinyungu*” (just go on cultivating in valley bottoms), “*vitindi havipunguzi maji bali vinazuia mmonyoko kwenye vyanzo vya maji*” (Bamboos do not cause water decline but they prevent erosion at water sources), and “*tutalipiaje kutumia maji ambayo ni ya Mungu*” (Why should we pay for water that is God’s.”

10.6 Conclusions Based on Factors Beyond WUA Formation Processes

1. It is now easier to convince common people on the importance of WUAs since positive results in restoring water flow have started being noticeable due to good work of WUAs.
2. The main factors found in this study to be threatening the sustainability of WUAs are inadequate funding, especially for water infrastructural development, DFT members facilitation to enable them perform various water-related activities, WUA leaders transport allowances, and seminars.
3. Another thing found threatening the sustainability of WUAs was illegal diversion of substantial amounts of river water.
4. Negligence to adopt recommended practices for restoring water flow was also noted as a factor threatening sustainability of WUAs.
5. Little collaboration between WUA and local government leaders noted during the study was highly unexpected.
6. Quarrelling on transport facilities donated by WWF was another factor threatening the sustainability of WUAs. It was exacerbated by village leaders being not aware of the conditions for using the bicycles, thinking that the bicycles were for all village leaders.

10.7 Conclusions Based on Studies Undertaken in the GRRCA

1. The factors reported beyond the formation of WUA came in although they had not been conceptualised. Though so, some insights on the performance and sustainability of WUAs have been gained.
2. Since many people said that bamboos thriving at water sources are beneficial to prevent soil erosion and that they do not cause decline in water, the role of bamboos in causing water decline at water sources is not well known among the communities.

11. RECOMMENDATIONS

In this section, recommendations drawn from the conclusions of this study are presented in sub-sections 11.1 to 11.7 which reflect the sections of the conclusions so that they can be easily related. The recommendations in sections 11.1 to 11.7 include ways recommended to improve further the process of sub-catchment WUA formation, as required in the term of reference

number 9. Moreover, guidelines that should be followed during future formation of sub-catchment WUAs are given in section 11.8, as required in the term of reference number 8.

11.1 Recommendation to Address the Discrepancies in the Steps Used to Form WUAs

1. Communities elsewhere in the GRRCA and in other river basins of Tanzania should not await for conflicts over resources use to increase; they should emulate what the communities that now share Mpolo River sub-catchment did by seeking assistance from a nearby River Basin Office, DED's office or other stakeholders to help them form a WUA to prevent the conflicts and contain them, if they are there.
2. In order for the processes of WUA formation to be consistent, the numbers of WUA leadership positions and leaders should be the same, i.e. 5 including 3 or 2 women and 2 or 3 men, respectively, at the village, water user scheme, sub-catchment, catchment, and apex levels, i.e. the Chairperson and his/her Vice-Chairperson, the Secretary and his/her Assistant Secretary, and the Treasurer. The basis of this recommendation is that the two leaders in the first two positions cover for each other in case either of them has an emergency. For the treasurer position, only one leader is enough to avoid more than one treasurers of the same WUA blaming each other in case WUA funds are misappropriated.
3. To increase chances of women getting leadership positions, an equal number of men and women should be voted for.
4. In future the use of O & OD should be considered for use to assess water resources since it is less laborious than PRA, and yet it produces more or less the same results. There should also be refresher courses for DFT to keep them abreast of new developments in methodological aspects, e.g. O & OD.
5. In WUA formation in the future, LGA leaders should be involved in all the steps to form WUAs so that they can work with WUA leaders more harmoniously.
6. Since July 2009 when the draft constitutions will be being registered at the RBWO level, there should be no need to send the draft constitutions to various places for registration as it was done in Mufindi District to get the constitutions registered as soon as possible at least by one of the authorities where the draft constitutions were sent. However, before being sent to RBWO for registration, the draft constitutions should go on being approved by the District Executive Director after the District Council's Lawyer is satisfied that they are legally reasonable. Moreover, before being sent to RBWO for registration, the draft constitutions should be sent to the District Commissioner's Office for the District Commissioner or the District Administrative Secretary to read and comment on them.
7. In future, treasurers should be involved in all the steps of forming WUAs.
8. Sub-village level WUA representatives should be trained. However, since they are many while financial resources are scarce, their training should take fewer days (e.g. 1 to 2), and the venue should be one of the wards or divisions where the villagers live, unlike village and sub-catchment levels WUA leaders who were trained at district headquarters.
9. In future the number of days of training village and sub-catchment level WUA leaders should be the same and be at most 5 days.
10. In future, VEOs, village chairpersons, WEOs, Ward Councillors and Division Officers should be involved in training on water resources management and use

11.2 Recommendations to Address Shortfalls in the WUA Formation Processes

The recommendations given here to address the conclusions presented in Section 10.2 have mainly been drawn from the suggestions given by the interviewees, which are realistic and are presented in Table 16.

1. In future DEDs are urged to assist WUAs financially. Since during presentation of the preliminary findings of this study participants argued that DEDs cannot support activities which have not been budgeted for, it is hereby recommended that WUA activities be mainstreamed in ward plans and WUA constitutions be passed through full council meetings so that DEDs can consider supporting them financially and the ward councillors can help the reinforcement of WUA by-laws.
2. The water resources management knowledge be taken to everyone all over Tanzania lest those who have the knowledge conserve the water resources while those who do not have the knowledge destruct the resources.
3. It is proposed that in merging WUAs to form an apex WUA, a new WUA to join another WUA or other WUAs should first be given sometime, at least one year, to get experience. This will help them integrate well with the other WUAs. The same period of time should be allowed for village level WUAs to join sub-catchment level WUAs.
4. Since most WUA members are adult learners, the process of forming a WUA at the village, sub-catchment and catchment levels should take a week to allow time to educate the members and give them chances to ask questions.
5. In future, representatives from various WUAs to vote for leaders of a bigger WUA being formed should be equal in number if the number of village is the same, but proportionate to the number of villages constituting the WUAs that are being merged, if the number of villages is not the same.
6. Since the condition that a leader has to come from the last village downstream in a river sub-catchment-based WUA may enable some incompetent people to become WUA leaders, it should not be applied, to avoid chances of bringing in unsuitable leaders.
7. Since every village under Mkoji Apex WUA has 4 representatives, every river sub-catchment based WUA under Mkoji Apex WUA should have at least 4 representatives in the apex WUA. Effecting this recommendation should be as soon as it is convenient for RBWO and WWF to do so. Even if that is done, river sub-catchment based WUAs will still be under-represented since they are shared by a number of villages.

11.3 Recommendations to Address Participatory Approaches to WUA Formation

1. In forming WUAs, the Dublin principles should be more considered, especially in Mufindi, Makete and Mbarali Districts which were found lagging behind the other districts with regard to the extent to which the processes of WUA formation were participatory. The principles stipulate that water development and management should be based on a participatory approach, involving users, planners and policy makers at all levels; and women play a central part in the provision, management and safeguarding water.
2. In future WUA formation, the youth should be involved very actively by specifically mentioning them and analysing the activities they do more than other groups using water.

11.4 Recommendations to Address Problems/Challenges Faced During WUA Formation

1. Since the number of DFT members decreased while they are vital in WUA formation, once any DFT member leaves for any reason, he/she should be replaced as soon as possible.

Since new members will be joining DFT teams, regular training of DTF members should be there, not only for new DFT members but also as refresher courses.

2. If RBWO, WWF and DED are of the opinion that some DFT members are less skilled in participatory methodologies, as a short-term measure, they should work with others who are more skilled. In the long run, the less skilled DFT members should be trained in participatory methodologies.
3. The guidelines proposed in this report should serve as a guide for WUA formation in the future. However, it is not a blue print on how to form WUAs; modification of the steps may be important, depending on actual circumstances on the ground.
4. Since if the process of electing WUA leaders is not well supervised it can be undemocratic, the RBWO is urged to supervise closely such elections. Elections to replace WUA leaders whose leadership ceased due to various reasons should be done timely to maintain democracy in the management of WUAs, which has substantial influence on the performance of WUAs.

11.5 Recommendations to Address Some Lessons Learnt by the Interviewees

1. Since the education provided during WUA formation processes was substantial, and the water, village and government leaders who got it may change, it is recommended that new leaders should be given the same education so that they can be efficient in performing water activities. Mass education using leaflets, the radio and TV should be provided so that common people in villages can get the knowledge.
2. Since using different names (*Jumuia ya Watumia Maji* and *Muungano wa Watumia Maji*) to refer to water users association may confuse some stakeholders and audience, there should be harmonisation of the names of WUAs. Adopting the name *Jumuia ya Watumia Maji* should be considered because it is more related to the English words water users association than the term *Muungano wa Watumia Maji* is. Also, names of WUAs should reflect water, unlike the name MACHIREMA which doesn't. In order to systematise abbreviations of the names of the WUAs (both sub-catchment and apex), such abbreviations should be well thought of to avoid the possibility of changing them later because of being unsuitable, which can confuse various stakeholders and audience. Besides, every WUA should have both a Kiswahili name and its translation in English to make it easy for people who know little Kiswahili to understand the abbreviations. For apex WUAs, the word *baraza* should be used since it connotes something which is big. Besides, every WUA should have an acronym in Kiswahili, unlike *Muungano wa Watumia Maji Bonde Dogo la Mkewe*, which has no abbreviation. It may be called MUWAMAM, MWAMABOM or MWAMABOMKE. In naming WUAs, names and abbreviations of already existing WUAs should be consulted lest they are duplicated.
3. Although chances are high for WUAs to be sustainable, it should not be taken for granted that they will be sustainable; various stakeholders should keep wide open eyes and ears to curb factors which are likely to reduce the chances of the WUAs' being sustainable. Stringent abidance by the WUA by-laws is one of the things that will make the WUAs sustainable.
4. Based on the conclusion that the suggestion given by most of the interviewees that WUAs should be centrally administered with good representation in all sub-villages and with regard to various water uses is sound, it is recommended that the village and river sub-catchment approaches should be combined in formation of WUAs in future and that the water use

scheme based approach should be allowed only where such schemes were existing prior to the formation of modern WUAs.

5. Since there are many people who have poor understanding of the roles and responsibilities of WUAs while WUAs have high potential for restoration of water flow in the GRRCA, massive education should go on being provided on good and bad practices for water, soils and environment conservation, and appropriate measures should go on being taken against people violating the by-laws.

11.6 Recommendations to Address Factors beyond WUA Formation Processes

1. Since cases are many whereby water flow has been restored due to the application of the environmental and water resources management education given, people in places where similar success has not been realised are urged to emulate what the successful people have done to restore water flow. Other indicators of WUA success should also be emulated.
2. Since funding for water resources management activities has declined, it is high time WUAs were mainstreamed in District plans so that they may be getting funds from DEDs' coffers. This will reduce too much reliance on donors who may not be there one day.
3. Diversion of a big amount water should not be done before one gets written permission from relevant authorities, and WUA leaders should be consulted before the permission is given
4. Since some people neglect to adopt practices that are pro-water flow restoration, more education on the practices should be given using mass media. At the same time fines and disciplinary measures stipulated for various offences should be applied without bias for or against offenders, be they women, men, leaders or common people.
5. Little collaboration between WUA and local government leaders should be prevented by involving local government leaders in all the processes of WUA formation. Closer collaboration between WUAs management and district level local government authorities is also recommended. If incidences of little collaboration among WUA and local government leaders happen, the cases should be solved by consulting higher rank leaders in DEDs' and RBWOs' offices.
6. To avoid village leaders confiscating bicycles meant for village level WUA leaders, new village leaders should be briefed on the uses of the bicycles.

11.7 Recommendations for Further Research

1. The insights on the performance and sustainability of WUAs gained from this study are not enough since they are not based on comprehensive indicators of performance and sustainability of WUA, which were out of the context of this study. Therefore, a comprehensive study is proposed to be done on the performance and sustainability of WUAs in the GRRCA.
2. Lest bamboos become one of the major causes of water decline in the future, experimental research should be conducted on them to not only ascertain whether they cause water decline or not, but also to quantify the amount of water they consume for a given period of time under specified circumstances. The results of the study will form a basis to educate communities on how bamboos cause the problem to what extent.

11.8 The Process Recommended to Form a WUA

On the basis of the findings, conclusions, and recommendations of this study, a combination of the river sub-catchment and village systems of WUA formation is recommended because it takes into account all the villages (lower and upper) that share a river catchment or sub-catchment area

and the catchments themselves. Accordingly, an eleven-step procedure that is summarised in Table 20 is recommended in the process of WUA formation in the future. The word future here means soon after this report is accepted. However, depending on circumstances prevailing on the ground, some minor deviations from the 11 steps may be allowed, but they should be explained.

Table 20: Recommended steps for the process to form a sub-catchment WUA

Step	Importance of the step
1. Description of the sub-catchment area with its boundaries where a WUA is to be formed, and listing the names of all the villages, wards, divisions, and districts where the villages are found. The description will also include background information about the sub-catchment areas in the form of situation analysis.	<ul style="list-style-type: none"> This will help to identify villages, wards, divisions, and districts to be involved and ensure that all the villages sharing a sub-catchment WUA are included in the process of WUA formation right from the beginning, to avoid repetition of the process if lower and upper villagers are involved at different times, as it happened with Halali and LYAMUF WUAs. Background information on the sub-catchment area will provide vital information to be taken into account by both new and experienced staff members.
2. Making appointments with village leaders for holding awareness meetings with village council members and villagers. Days, dates, hour durations, and venues for holding the meetings should be agreed upon between DFT/RBWO and the villagers	<ul style="list-style-type: none"> This will help avoid planning to have meetings on villagers' special days or hours, as it happened in Wasa village (Wasa Ward, Kiponzelo Division, Iringa District) in September 2006 where a meeting was planned by DFT to take place on a Saturday which the villagers had spared for traditional rites. The meeting did not take place and representatives from the village were late for a week for a training seminar involving other villages' representatives.
3. Awareness creation and choosing sub-village, village, and water users groups/schemes representatives. For each sub-village 2 representatives (1 male and 1 female) should be chosen. For every village, 5 representatives (Chairperson, Vice-Chairperson, Secretary, Assistant Secretary, and Treasurer) should be chosen, including 3 or 2 women and 2 or 3 men, respectively. Water user groups/schemes should be included if they were there before the new WUAs being formed. The number of representatives in a water user group/scheme should be 2 of any sex.	<ul style="list-style-type: none"> Awareness creation among Village Council members will give them insights into water issues and the ability to clarify the same to other villagers. Awareness creation among villagers will enable them to realise water resources problems and hence the need to form a WUA. Choosing 1 male and 1 female sub-village representatives will balance gender among the WUA members. Choosing 5 village representatives (unlike 4 in some WUAs previously) will make a better distribution of leadership workload. Choosing 2 water user group/scheme representatives is treating them like a sub-village. Also, it is meant at facilitating the would-be-need to compute their proportionality with other community members.
4. Stakeholder analysis, paying much attention to various water users. Influential stakeholders (like top district and regional leaders, members of parliament), big water users like TANESCO, and those affected positively and negatively by water resource uses.	<ul style="list-style-type: none"> This will help to avoid forgetting any stakeholder and ensure that all of them are prioritised. It will also enhance representation and/or participation of the stakeholders in the interventions to improve management and use of natural resources, including water. Participants in PRA will also be drawn from the stakeholders.



Step	Importance of the step																		
<p>5. Participatory Rural Appraisal (PRA) be done for at most 5 days focusing more on water and other resources including resources mapping (including all water sources), social mapping, institutional mapping, transect walk, problem/pair-wise/preference/wealth ranking and prioritising interventions, pie/mobility/flow charts, and seasonal/daily calendars. About 10 people for village level WUAs and about 20 people for sub-catchment WUAs should be involved, as suggested below:</p> <table border="1" data-bbox="199 625 760 1150"> <thead> <tr> <th data-bbox="199 625 423 653">Village WUA</th><th data-bbox="423 625 760 653">Sub-catchment WUA</th></tr> </thead> <tbody> <tr> <td data-bbox="199 653 423 695">(i) One DFT member,</td><td data-bbox="423 653 760 695">(i) Two 2 DFT members,</td></tr> <tr> <td data-bbox="199 695 423 789">(ii) One sub-village, representative</td><td data-bbox="423 695 760 737">(ii) Two to 5 village water leaders,</td></tr> <tr> <td data-bbox="199 789 423 873">(iii) All the 5 village WUA leaders,</td><td data-bbox="423 737 760 842">(iii) One representative of every water use group/scheme (if existing),</td></tr> <tr> <td data-bbox="199 873 423 978">(iv) One water use group/scheme representatives (if existing),</td><td data-bbox="423 842 760 926">(iv) Chairpersons of all villages to share the WUA,</td></tr> <tr> <td data-bbox="199 978 423 1083">(v) One traditional leader (if applicable), and</td><td data-bbox="423 926 760 1010">(v) All VEOs of the villages to share the WUA,</td></tr> <tr> <td data-bbox="199 1083 423 1150">(vi) One physically strong elder.</td><td data-bbox="423 1010 760 1052">(vi) WEOs of wards where WUAs are to be formed,</td></tr> <tr> <td></td><td data-bbox="423 1052 760 1094">(vii) One traditional leader (if a available), and</td></tr> <tr> <td></td><td data-bbox="423 1094 760 1150">(viii) One physically strong elder.</td></tr> </tbody> </table>	Village WUA	Sub-catchment WUA	(i) One DFT member,	(i) Two 2 DFT members,	(ii) One sub-village, representative	(ii) Two to 5 village water leaders,	(iii) All the 5 village WUA leaders,	(iii) One representative of every water use group/scheme (if existing),	(iv) One water use group/scheme representatives (if existing),	(iv) Chairpersons of all villages to share the WUA,	(v) One traditional leader (if applicable), and	(v) All VEOs of the villages to share the WUA,	(vi) One physically strong elder.	(vi) WEOs of wards where WUAs are to be formed,		(vii) One traditional leader (if a available), and		(viii) One physically strong elder.	<ul style="list-style-type: none"> Appraising the resources rigorously will enable the participants to understand the problems and prioritise solutions to the problems. Including 10 and 20 participants in the village and sub-catchment WUAs respectively will ensure that neither too few nor too many participants are involved, for efficient discussion of the issues at hand. Inclusion of sub-village representatives will facilitate getting an account of all the water sources. Including village government leaders will enable them to get insights about water and other natural resources so that they can be more cooperative with water leaders. Inclusion of WEOs will inculcate in their minds the fact that they are part and parcel of WUAs and make them ready to support WUA leaders in managing water resources, e.g. in handling cases of violation of water use rules. Inclusion of traditional leaders will help the PRA team to understand traditions regarding water and natural resources uses, e.g. how to deal with traditional forests like Nyumbanitu in Njombe District. Having a physically strong elder person is important to get from him/her narrations of past events about the resources and changes in water flows and amounts vis-à-vis the present situation.
Village WUA	Sub-catchment WUA																		
(i) One DFT member,	(i) Two 2 DFT members,																		
(ii) One sub-village, representative	(ii) Two to 5 village water leaders,																		
(iii) All the 5 village WUA leaders,	(iii) One representative of every water use group/scheme (if existing),																		
(iv) One water use group/scheme representatives (if existing),	(iv) Chairpersons of all villages to share the WUA,																		
(v) One traditional leader (if applicable), and	(v) All VEOs of the villages to share the WUA,																		
(vi) One physically strong elder.	(vi) WEOs of wards where WUAs are to be formed,																		
	(vii) One traditional leader (if a available), and																		
	(viii) One physically strong elder.																		
<p>6. PRA outputs presentation to all villagers in village meetings to explain to them about the resources and environmental issues assessed, problem rankings, and prioritised interventions</p>	<ul style="list-style-type: none"> The presentations will help the villagers to realise the types and nature of the problems and decide if they need a WUA or not to contain the problems. 																		
<p>7. Choosing village WUA leaders, avoiding choosing village government leaders to be water leaders. This should be done through a secret ballot to choose 5 leaders. One man and two women should be voted for to get a chairperson and a vice-chairperson. Two men and 1 woman should be voted for to get a secretary and an assistant secretary. Two men and 2 women should be voted for to get the treasurer. Village WUA leaders should be chosen from the sub-village and water user groups/schemes in the village.</p>	<ul style="list-style-type: none"> Avoiding choosing village leaders to be water leaders is meant to avoid over-loading them with leadership responsibilities. Voting for 1 man and 2 women to get a chairperson and a vice-chairperson is important to increase chances of women becoming WUA chairpersons, unlike during this study when there was no woman chairperson. Voting for 2 men and 1 woman to get a secretary and an assistant secretary is important to increase chances of the secretary being a man, in case the chairperson is a woman. Voting for 2 men and 2 women to get the treasurer is important to balance chances of the treasurer being either a man or a woman, unlike the situation found that most treasurers were women. The numbers of people recommended will result into voting for 5 men and 5 women, unlike the assertion found during field work that there were few women WUA leaders because women had got fewer votes. But the truth of the matter was that women were fewer among the people who were voted for. 																		



Step	Importance of the step
8. Choosing Sub-catchment WUA leaders from village level WUA leaders through a secret ballot. Five leaders should be chosen. For each of the 5 positions there should be 4 contestants: 2 men and 2 women. Someone who has lost in the elections at one position may be included only once more among those to be voted for, for another position.	<ul style="list-style-type: none"> The numbers of men and women recommended for being voted for will result in voting for at most 20 people: 10 men and 10 women. This will help avoid the assertion found during field work that there were few women WUA leaders because women had got fewer votes, while the number of women voted for was smaller than that of men voted for.
9. Preparation of the draft constitution. This should be done in a seminar involving the 5 top leaders of the WUA, all village level WUA leaders, all village government chairmen, all VEOs, all WEOs, all Ward Councillors, and all Division officers in a relevant sub-catchment.	<ul style="list-style-type: none"> The inclusion of all the people proposed is meant to tap their various expertise and experiences and inculcate in their minds a sense of ownership of the constitution so that they can be ready to enforce what it stipulates.
10. Draft constitution presentation to villagers in all villagers meetings. The village level WUA leaders will explain the draft constitution to villagers, receive their comments on it and seek their approval to forward the draft constitution for registration.	<ul style="list-style-type: none"> This is important to inculcate a sense of ownership of the constitution in the minds of the community members
11. Sending the draft constitution to the RBWO for registration through the DED where the District Council Lawyer will review it first	<ul style="list-style-type: none"> The draft constitution will be submitted with a covering letter to the District Council where the District Council Lawyer will read it to determine its soundness prior to forwarding it to the RBWO for registration.

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APPENDICES

Appendix 1: Terms of Reference for the Consultancy

PROCESSES, EXPERIENCES AND GUIDELINES FOR THE FORMATION OF SUB-CATCHMENT WATER USERS ASSOCIATIONS (WUAs) IN THE GREAT RUAHA RIVER CATCHMENT AREA – IRINGA AND MBEYA REGIONS

1. Document processes used in formation of WUAs (or equivalent institutions) in other parts of the world and lessons learned.
2. Collect, compile and analyze all existing relevant information and data on Sub-catchment WUAs, which were formed with the support of WWF and other actors in the Great Ruaha River Catchment Area.
3. Review Sub-catchment WUA formation Reports and summarise the process through which each of the Sub-catchment WUAs followed during its formation. The summaries should be in chronological order, starting with the first Sub-catchment WUA formed and ending with the last Sub-catchment WUA formed. Any additional information on the processes used by other organisations to form WUAs should also be captured.
4. Consult with the Facilitation Teams (WWF staff, RBWO and District Facilitation Teams (DFTs) and other key stakeholders, which participated in the formation of the Sub-catchment WUAs. Use the information collected from the consultations to further refine the WUA formation process summaries.
5. Consult with a cross section of WUAs across the catchment to seek their feedback on the process they went through (focusing on most recently formed WUAs who will have a more accurate memories of the processes they went through).
6. Describe the problems encountered and challenges faced during the formation of various Sub-catchment WUAs from both facilitation team and WUA perspectives.
7. Document/summarise the lessons that have been learned by drawing on the WUA formation process summaries, and describe the changes that have taken place in the Sub-catchment WUAs formation processes and the reasons thereof.
8. Develop guidelines, based on the findings of tasks 1 to 7 above, on the process that should be followed during future formation of Sub-catchment WUAs and the rationale/importance of each step in the process.
9. Recommend ways of further improving the process of Sub-catchment WUAs formation.
10. Complete and present a Draft Report on WWF experience on Sub-catchment WUAs formation to a Stakeholders Workshop (date to be determined and agreed between you and the WWF Programme Coordinator).
11. Incorporate comments from the Stakeholders' Workshop and submit the Final Report, not more than 23 June 2009.

Appendix 2: Tools Used to Collect Information for this Study



Appendix 2 (a): A Key Informant Interview Guide for Discussion with RBWO

For a Study on

PROCESSES, EXPERIENCES AND GUIDELINES FOR THE FORMATION OF SUB-CATCHMENT WATER USERS' ASSOCIATIONS (SUB-CATCHMENT WUAs) IN THE GREAT RUAHA RIVER CATCHMENT AREA – IRINGA AND MBEYA REGIONS, JUNE/JULY 2009

A. THE ROLES PLAYED BY RBWO IN WUA FORMATION

1. Specific roles that RBWO played during the formation of sub-catchment WUAs
2. Guidelines/principles used in the formulation of sub-catchment WUAs (Government, FAO, or...?)
3. Steps followed to formulate sub-catchment WUAs
4. Reasons given for the need to establish WUAs
5. Extent to which the WUAs formation process was in line with international goals/statements/policies (e.g. MDGs, Dublin Statement on Water and Sustainable Development, etc.) and national strategies/ policies/programmes (e.g. NSGRP, NAWAPO, Local Government Reform Programme, etc.)
6. Whether the WUA formation process was bottom-up or top-down. How?
7. Whether the process of electing WUA leaders was democratic. How?
8. Extent to which the processes of WUA formation implemented under the auspices of various stakeholders (LGAs, organisations, institutions, NGOs, etc.) in the GRRC Area were participatory
9. Extent to which there was collaboration among the above stakeholders if they worked concurrently on WUA formation in the same area
10. Position of WUA leaders in village government organisational structure (e.g. village committee to which WUA leaders belong and whether WUA and village leaders work in harmony?)

B. VIEWS OF RUFIJI BASIN WATER OFFICERS ON THE PROCESS OF WUA FORMATION

11. Extent to which the process was participatory (Tick in the appropriate cells in the table below)

Indicators of the process being participatory (1 = Strongly disagree), 2= Disagree, 3=Undecided, 4=Agree, 5=Strongly agree)	1	2	3	4	5
1. All water users were involved in the WUA formation process					
2. All sectors were involved in the WUA formation process					
3. Men and women were equally involved in the WUA formation process					
4. Youths were equally involved in the WUA formation process					
5. Gender implications were taken into account in the WUA formation process					
6. Communities' opinions were taken by DFT in the WUA formation process					
7. The process of WUA formation was bottom-up					
8. Before WUA formation, awareness was raised among community members					
Total score					

12. RBWO-related factors which constrained/facilitated WUA formation (How/Why?)
13. WWF/DFT/village leaders/villagers-related factors which constrained/facilitated WUA formation (How/Why?)
14. Problems/challenges faced by RBWO during WUA formation with respect to the facilitation process
15. Lessons learnt by RBWO from the WUA formation processes

D. SUGGESTIONS FOR IMPROVEMENT OF THE WUA FORMATION PROCESS IN FUTURE

16. How the constraints in Items 12 and 13 above were addressed and how they should be addressed in future
17. How the problems in Item 14 above were addressed and how they should be addressed in future
18. Shortfalls of the processes and suggestions for improvement of the processes of sub-catchment WUA formation used and for new guidelines/steps that should be followed in future for sub-catchment WUA formation and why
19. Whether there is a need to have WUAs for water for various uses, unlike having WUAs mainly for irrigation water



Appendix 2 (b): A Key Informant Interview Guide for DFT Members

For a Study on

PROCESSES, EXPERIENCES AND GUIDELINES FOR THE FORMATION OF SUB-CATCHMENT WATER USERS ASSOCIATIONS (SUB-CATCHMENT WUAs) IN THE GREAT RUAHA RIVER CATCHMENT AREA – IRINGA AND MBEYA REGIONS, JUNE/JULY 2009

D. BACKGROUND INFORMATION ON DFT

2. Description of DFT
3. When the DFT was formed
4. Why and how the DFT was formed
5. Routine activities of DFT

B. THE ROLES PLAYED BY DFT IN WUA FORMATION

6. Specific roles that DFT played in WUAs formation
7. Which communities in which the DFT members facilitated in the sub-catchment WUA formation
8. Guiding principles used in formulation of WUAs
9. Steps followed to formulate sub-catchment WUAs and whether the procedures were uniform for all WUAs
10. Reasons given for the need to establish WUAs
11. Extent to which the WUA formation process was in line with the main policy principles in water resources management as stipulated in the National Water Policy
12. Whether the WUA formation process was bottom-up or top-down. How?
13. Whether the process of electing WUA leaders was democratic. How?
14. Extent to which WUA formation processes implemented by various stakeholders (LGAs, organisations, institutions, NGOs, etc.) in the GRRC Area were participatory
15. Position of WUA leaders in village government organisational structure (e.g. village committee to which WUA leaders belong and whether WUA and village leaders work in harmony?)

C. VIEWS OF DISTRICT FACILITATION TEAM MEMBERS ON THE PROCESS OF WUA FORMATION

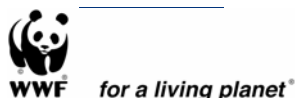
16. Extent to which the process was participatory (Tick in the appropriate cells in the table below)

Indicators of the process being participatory (1 = Strongly disagree), 2= Disagree, 3=Undecided, 4=Agree, 5=Strongly agree)	1	2	3	4	5
1. All water users were involved in the WUA formation process					
2. All sectors were involved in the WUA formation process					
3. Men and women were equally involved in the WUA formation process					
4. Youths were equally involved in the WUA formation process					
5. Gender implications were taken into account in the WUA formation process					
6. Communities' opinions were taken by DFT in the WUA formation process					
7. The process of WUA formation was bottom-up					
8. Before WUA formation, awareness was raised among community members					
Total score					

17. DFT-related factors which constrained/facilitated the process of WUA formation (How/Why?)
18. RBWO/WWF/village leaders/villagers-related factors which constrained/facilitated WUA formation (How/Why?)
19. Problems/challenges faced by DFT members during WUA formation with respect to the facilitation process
20. Problems/challenges faced by DFT members during WUA formation with respect to WUA perspectives
21. Lessons learnt by DFT members from the WUA formation processes

D. SUGGESTIONS FOR IMPROVEMENT OF THE WUA FORMATION PROCESS IN FUTURE

22. How the constraints in Items 16 and 17 above were addressed and how they should be addressed in future
23. How the problems/challenges in Item 18 above were addressed and how they should be addressed in future
24. How the problems/challenges in Item 19 above were addressed and how they should be addressed in future
25. Shortfalls of the processes and suggestions for improvement of the process of sub-catchment WUA formation used and for new guidelines/steps that should be followed in future for sub-catchment WUA formation and why
26. Whether there is a need to have WUAs for water for various uses, unlike having WUAs mainly for irrigation water



Appendix 2 (c): A Key Informant Interview Guide for Village Leaders

For a Study on

PROCESSES, EXPERIENCES AND GUIDELINES FOR THE FORMATION OF SUB-CATCHMENT WATER USERS ASSOCIATIONS (SUB-CATCHMENT WUAs) IN THE GREAT RUAHA RIVER CATCHMENT AREA – IRINGA AND MBEYA REGIONS, JUNE/JULY 2009

A. BACKGROUND INFORMATION

1. Village Ward Division District Region
2. Other villages with which this village shares a sub-catchment WUA
3. Number of menand womenin the sub-catchment WUA Committee

B. SUB-CATCHMENT WUA FORMATION PROCESSES

4. Stakeholders in the sub-catchment WUA
5. Steps followed to formulate the sub-catchment WUA
6. When the process of the sub-catchment WUA formation started
7. Organization(s) and Government Departments which initiated the process
8. The first people who went to the area to introduce the idea of WUA formation
9. People who facilitated the process of WUA formation
10. Reasons given for the need of establishing WUAs and whether they reflected felt needs of communities
11. Collaboration between WWF officers and local government officers during WUA formation
12. Minutes of meetings held during the process of forming the WUA
13. WUA leadership positions and how the leaders were obtained
14. Whether the WUA has a constitution, how and when the constitution was formulated
15. Whether the WUA is registered (1. Yes; 2. No), Date of Reg.....and Reg. No.....
16. Position of WUA leaders in village government organisational structure (e.g. village committee to which WUA leaders belong and whether WUA and village leaders work in harmony?)

C. VIEWS OF PARTICIPANTS ON THE PROCESS OF WUA FORMATION

17. Extent to which the process was participatory (Tick in the appropriate cells in the table below)

Indicators of the process being participatory (Tick the appropriate number) (1 = Strongly disagree), 2= Disagree, 3=Undecided, 4=Agree, 5=Strongly agree)	1	2	3	4	5
1. All water users were involved in the WUA formation process					
2. All sectors were involved in the WUA formation process					
3. Men and women were equally involved in the WUA formation process					
4. Youths were equally involved in the WUA formation process					
5. Gender implications were taken into account in the WUA formation process					
6. Communities' opinions were taken by DFT in the WUA formation process					
7. The process of WUA formation was bottom-up					
8. Before WUA formation, awareness was raised among community members					
Total score					

18. Village leaders-related factors which constrained/facilitated WUA formation (How/Why?)
19. RBWO/WWF/DFT/villagers-related factors which constrained/facilitated WUA formation (How/Why?)
20. Problems/challenges faced by village leaders during WUA formation with respect to the facilitation process
21. Problems/challenges faced by village leaders during WUA formation with respect to WUA perspectives
22. Lessons learnt by village leaders from the WUA formation process

D. SUGGESTIONS FOR IMPROVEMENT OF THE WUA FORMATION PROCESS IN FUTURE

23. How the constraints in Items 18 and 19 were addressed and how they should be addressed in future
24. How the problems in Item 20 were addressed and how they should be addressed in future
25. How the problems in Item 21 were addressed and how they should be addressed in future
26. Shortfalls of the processes and suggestions for improvement of the process of sub-catchment WUA formation used and for new guidelines/steps that should be followed in future for sub-catchment WUA formation and why
27. Whether there is a need to have WUAs for water for various uses, unlike having WUAs mainly for irrigation water

Appendix 2 (d): A Focus Group Discussion Guide for WUA Leaders and Members

For a Study on

PROCESSES, EXPERIENCES AND GUIDELINES FOR THE FORMATION OF SUB-CATCHMENT WATER USERS ASSOCIATIONS (SUB-CATCHMENT WUAs) IN THE GREAT RUAHA RIVER CATCHMENT AREA – IRINGA AND MBEYA REGIONS, JUNE/JULY 2009

A. BACKGROUND INFORMATION

1. Name of Sub-catchment WUA
2. Date Month and Year of sub-catchment WUA formation
3. Number of menand womenin the sub-catchment WUA Committee
4. Town where the sub-catchment WUA's office is located
5. Village(s) which the sub-catchment WUA serves
6. Ward(s) which the sub-catchment WUA serves
7. Division(s) which the sub-catchment WUA serves
8. District(s) in which the sub-catchment WUA is located
9. Region(s) in which the sub-catchment WUA is located
10. Position of WUA leaders in village government organisational structure (e.g. village committee to which WUA leaders belong and whether WUA and village leaders work in harmony?)

B. SUB-CATCHMENT WUA FORMATION PROCESSES

11. Stakeholders in the sub-catchment WUA
12. Steps followed to formulate the sub-catchment WUA
13. When the process of the sub-catchment WUA formation started
14. Organization(s) and Government Departments which initiated the process
15. The first people who went to the area to introduce the idea of WUA formation
16. People who facilitated the process of WUA formation
17. Reasons given for the need to establish WUAs and whether they reflected felt needs of communities
18. Collaboration between WWF officers and local government officers during WUA formation
19. Minutes of meetings held during the process of forming the WUA
20. WUA leadership positions and how the leaders were obtained
21. Whether the WUA has a constitution, how and when the constitution was formulated
22. Whether the WUA is registered (1. Yes; 2. No), Date of Reg.....and Reg. No.....

C. VIEWS OF PARTICIPANTS ON THE PROCESS OF WUA FORMATION

23. Extent to which the process was participatory (Tick in the appropriate cells in the table below)

Indicators of the process being participatory (1 = Strongly disagree, 2= Disagree, 3=Undecided, 4=Agree, 5=Strongly agree)	1	2	3	4	5
1. All water users were involved in the WUA formation process					
2. All sectors were involved in the WUA formation process					
3. Men and women were equally involved in the WUA formation process					
4. Youths were equally involved in the WUA formation process					
5. Gender implications were taken into account in the WUA formation process					
6. Communities' opinions were taken by DFT in the WUA formation process					
7. The process of WUA formation was bottom-up					
8. Before WUA formation, awareness was raised among community members					
Total score					

24. Villagers-related factors which constrained/facilitated the process of WUA formation (How/Why?)
25. RBWO/WWF/DFT/village leaders-related factors which constrained/facilitated the WUA formation process (How/Why?)
26. Problems/challenges faced by villagers during WUA formation with respect to the facilitation team
27. Problems/challenges faced by villagers during WUA formation with respect to WUA perspectives
28. Lessons learnt by villagers from the WUA formation process

D. SUGGESTIONS FOR IMPROVEMENT OF THE WUA FORMATION PROCESS IN FUTURE

29. How the constraints in Items 24 and 25 were addressed and how they should be addressed in WUA formation in future
30. How the problems/challenges in Item 26 were addressed and how they should be addressed in future
31. How the problems/challenges in Item 27 were addressed and how they should be addressed in future
32. Shortfalls of the processes and suggestions for improvement of the process of sub-catchment WUA formation used and for new guidelines/steps that should be followed in future for sub-catchment WUA formation and why
33. Whether there is a need to have WUAs for water for various uses, unlike having WUAs mainly for irrigation water

Appendix 2 (e): A Key Informant Interview Guide for Discussion with Mr. L. Haule

For a Study on

PROCESSES, EXPERIENCES AND GUIDELINES FOR THE FORMATION OF SUB-CATCHMENT WATER USERS ASSOCIATIONS (SUB-CATCHMENT WUAs) IN THE GREAT RUAHA RIVER CATCHMENT AREA – IRINGA AND MBEYA REGIONS, JUNE/JULY 2009

A. THE INTERVIEW'S KNOWLEDGE AND EXPERIENCES OF WUA FORMATION IN THE GRCA

1. Your full name
2. Your profession
3. Your occupation
4. History of WUAs in the Great Ruaha River Catchment Area
5. Specific roles you played in formulation of WUAs in the Great Ruaha River Catchment Area
6. Guidelines used to form WUAs
7. Differences in the processes of WUA formation under the auspices of various organisations, such as DfID, FAO, SMUWC, WWF-EU and reasons
8. Steps followed to formulate WUAs
9. Differences in steps used to form older WUAs like Mkoji and Halali in the 1990s and recent WUAs like Mpolo and MBUMTILU
10. Extent to which the WUAs formation process was in line with international goals/statements/policies (e.g. MDGs, Dublin Statement on Water and Sustainable Development, etc.) and national strategies/ policies/programmes (e.g. NSGRP, NAWAPO, Local Government Reform Programme, etc.)
11. Whether the WUA formation process was bottom-up or top-down. How?
12. Whether the process of electing WUA leaders was democratic. How?
13. Extent to which the processes of WUA formation implemented under the auspices of various stakeholders (LGAs, organisations, institutions, NGOs, etc.) in the GRCA Area were participatory
14. Extent to which there was collaboration among the above stakeholders if they worked concurrently on WUA formation in the same area

B. VIEWS OF RUFIJI BASIN WATER OFFICERS ON THE PROCESS OF WUA FORMATION

15. Extent to which the process was participatory (Tick in the appropriate cells in the table below)

Indicators of the process being participatory (1 = Strongly disagree), 2= Disagree, 3=Undecided, 4=Agree, 5=Strongly agree)	1	2	3	4	5
1. All water users were involved in the WUA formation process					
2. All sectors were involved in the WUA formation process					
3. Men and women were equally involved in the WUA formation process					
4. Youths were equally involved in the WUA formation process					
5. Gender implications were taken into account in the WUA formation process					
6. Communities' opinions were taken by DFT in the WUA formation process					
7. The process of WUA formation was bottom-up					
8. Before WUA formation, awareness was raised among community members					
Total score					

16. Lessons learnt by RBWO from the WUA formation processes

C. SUGGESTIONS FOR IMPROVEMENT OF THE WUA FORMATION PROCESS IN FUTURE

17. Suggestions for improvement/standardisation of the process of sub-catchment WUA formation used and for new guidelines/steps that should be followed in future for sub-catchment WUA formation and why
18. Whether there is a need to have WUAs for water for various uses, unlike now when WUAs are mainly for irrigation water
19. Challenges he faced in facilitating the processes of WUA formation with respect to WWF
20. Problems he faced with DFT
21. His views on the best way to formulate an apex WUA like Ndembera, MAMREMA, MACHIREMA or BWM-BDM (Whether it is better to start with sub-villages or water use groups)
22. The process of WUA registration and why it was taking too long a time

Appendix 3: Key Informants and Focus Group Discussants for this Study

SN	Name	Sex	Position	District
1.	Grace Chitanda	F	Hydrologist	Iringa
2.	Magreth Dionis	F	Basic Community Dev. Officer	Iringa
3.	Elisabeth Ngassa	F	Community Dev. Officer	Iringa
4.	Georgina Kazinja	F	Water Technician	Iringa
5.	Willie Mwarucanda	M	Basin Water Officer	Iringa
6.	Francis Isaya Lutambi	M	Chairman, JUBODOMLYA	Iringa
7.	Elicus C. Ngweta	M	Vice-Chairman, JUBODOMLYA	Iringa
8.	Alois Madati	M	Member, JUBODOMLYA	Iringa
9.	Mathias Nyenza	M	Member, JUBODOMLYA	Iringa
10.	Fatuma Omary	F	Treasurer, JUBODOMLYA	Iringa
11.	Augustine Shirima	M	Chairperson DFT, Mufindi	Mufindi
12.	Nassib Mmbagga	M	District Economist	Mufindi
13.	Natalioni Mdundwige	M	VEO, Ukelemi Village	Mufindi
14.	Ollaphu Michael Dakk	M	VEO, Tambalang'ombe Village	Mufindi
15.	Rajabu J. Kadege	M	Chairman, Chairman, LYAMUF WUA	Mufindi
16.	Mario Aujeni Msilu	M	Treasurer, LYAMUF WUA	Mufindi
17.	Estemina John Chalam	F	Member, LYAMUF WUA	Mufindi
18.	Renata Ngailo	F	Member, LYAMUF WUA	Mufindi
19.	Emerensiana Hava	F	Member, LYAMUF WUA	Mufindi
20.	Vitus Lamson Mgulund	M	VEO, Matanana Village	Mufindi
21.	Ezekiel D. Myinga	M	VEO, Bumilayinga Village	Mufindi
22.	Valence Nyagawa	M	VEO, Ulole Village	Mufindi
23.	Eliud Mangula	M	Member, MKEWE WUA	Mufindi
24.	Sebastian Mung'ong'o	M	Chairman, Matanana Village Water Umoja	Mufindi
25.	Julieta Mng'olage	F	Chairperson, Bumilayinga Village Water Umoja	Mufindi
26.	Veronika Mangula	F	Member, MKEWE WUA	Mufindi
27.	Frola Lalika	F	Member, Bumilayinga Village Water Umoja	Mufindi
28.	Damasi Myinga	M	Secretary, Secretary, Bumilayinga Water Umoja	Mufindi
29.	Neema Mgeni	F	Member, MKEWE WUA	Mufindi
30.	Renatus Mlwale	M	Chairman, Ulole Village Water Umoja	Mufindi
31.	Ben Mangula	M	Chairman, Ulole Village	Mufindi
32.	Norbert Kinabo	M	Chairman, DFT, Njombe District	Njombe
33.	Michael Haule	M	DFT, Njombe District	Njombe
34.	Adamson H. Msigala	M	Chairman, Mpando WUA	Njombe
35.	Sarah Mgya	F	Secretary, Mpando WU	Njombe
36.	Evaristo Mandele	M	Member, Mpando WUA	Njombe
37.	Elmano Nziku	M	Member, Mpando WUA	Njombe
38.	Hosea M. Msemwa	M	Member, Mpando WUA	Njombe
39.	Happy Nziku	F	Member, Mpando WUA, Njombe	Njombe
40.	Festo B. Msemwa	M	VEO, Makoga Village	Njombe
41.	Godwill N. Mwajombe	M	VEO, Mdasi Village	Njombe
42.	Emanuel J. Lulandala	M	VEO, Masilu Village	Njombe
43.	Yekonia M. Vahaye	M	Chairman, Wangama Village	Njombe
44.	Lazaro Tem Mbilinyi	M	VEO, Masage	Njombe

SN	Name	Sex	Position	District
45.	Frederick Eric Mwalongo	M	Chairman, Balali WUA	Njombe
46.	Beatus Naftali Mpinga	M	Member, Balali WUA	Njombe
47.	Sayuni Luponelo Vahaye	F	Secretary, Balali WUA	Njombe
48.	Rehema Kasiani Sanga	F	Member, Balali WUA	Njombe
49.	Shadrack L. Mbembati	M	VEO, Mdandu Village	Njombe
50.	William M. Mhema	M	VEO Mngate Village	Njombe
51.	Asha Mgaya	F	VEO, Itowo Village	Njombe
52.	Ashery Ludaliko Kilasi	M	Chairman, MBUMTILU WUA	Njombe
53.	Ela Vilagila	F	Member, MBUMTILU WUA	Njombe
54.	Pelesi Mbilinyi	F	Member, MBUMTILU WUA	Njombe
55.	Grace Gogi Mligo	F	Member, MBUMTILU WUA	Njombe
56.	George Kayanda Wandelage	M	Vice Secretary, MBUMTILU WUA	Njombe
57.	Esther James Sapali	F	Treasurer, MBUMTILU WUA	Njombe
58.	Kenneth L. Mlelwa	M	VEO, Korinto Village	Njombe
59.	Alex R. Kanyanye	M	VEO, Igeg'hedza	Njombe
60.	Essau E. Mpogollo	M	Chairman, Korinto Village	Njombe
61.	Joseph Sauga	M	Secretary, Halali WUA	Njombe
62.	Beno Kita Matowo	M	Chairman, MWAMAHA	Njombe
63.	Daud S. Mgeni	M	Vice-Chairman, MWAMAHA	Njombe
64.	Christina Nziku	F	Treasurer, MWAMAHA	Njombe
65.	Stephen Sungura	M	Chairman, MWAMAHA	Njombe
66.	Aneth Mkwama	F	Member, MWAMAHA	Njombe
67.	Yotamu Mteuele	M	Member, MWAMAHA	Njombe
68.	Idris A. Msuya	M	RBWO, Rujewa	Mbrarali
69.	John Makonyole	M	RBWO, Rujewa	Mbrarali
70.	Jophia J. Nzobonaliba	F	DFT Member, Mbarali	Mbrarali
71.	Anyubatile Seme	F	DFT Member, Mbarali	Mbrarali
72.	Ponsiano Evarusto Mhavila	M	VEO, Lyambogo Village	Mbrarali
73.	Abel J. Mwalibeki	M	VEO, Chimala	Mbrarali
74.	Juma Mwalisu	M	Chairman, MACHIREMA	Mbrarali
75.	Yuda MloweLOWE	M	Treasurer, MACHIREMA	Mbrarali
76.	Davis Stembela	M	Secretary, MACHIREMA	Mbrarali
77.	Mwakyalamila Emmanuel Reuben	M	Member, MACHIREMA	Mbrarali
78.	Richard Lupumilo Kivivi	M	Member, MACHIREMA	Mbrarali
79.	Yulida E. Mballa	F	Member, MACHIREMA	Mbrarali
80.	Thobias J. Mpululu	M	Member, MACHIREMA	Mbrarali
81.	Jane Mkamba	F	Member, MACHIREMA	Mbrarali
82.	Shahara Nduvaluva	F	Assistant Secretary, MACHIREMA	Mbrarali
83.	Adriano Nsemwa	M	DFT Member, Makete	Mbrarali
84.	Wahabi A. Bakari	M	Chairman, MWAMAMSWI	Mbrarali
85.	Asha S. Kimamle	F	Member, MWAMAMSWI	Mbrarali
86.	Godlove Elihdi	M	Member, MWAMAMSWI	Mbrarali
87.	Telezia A. Namwala	F	Assistatnt Secretary, MWAMAMSWI	Mbrarali
88.	Anyosisye H. Mwasaga	M	Chairman, MUWABOMU	Mbrarali
89.	Teddy Natahanaeli Luvanda	M	VEO, Mpolo Village	Mbrarali

SN	Name	Sex	Position	District
90.	Tanganyika Kakaobeli	M	Member, MUWABOMU	Mbrarali
91.	Neema Mgaya	F	Vice Chairperson, MUWABOMU	Mbrarali
92.	Twalib Mfumbulwa	M	VEO, Igurusi Village	Mbrarali
93.	Ajuaye S. Kapalamba	M	Secretary, MUWABOMU	Mbrarali
94.	Bevarine T. Mgoda	F	Community Development Officer, DFT Member, Mbeya	Mbeya
95.	Nyanga J. Ntengule	M	Chairman, BWM-BDM	Mbeya
96.	Martha Chales	F	Secretary, BWM-BDM	Mbeya
97.	Esnati Nsalanji	F	Treasurer, BWM-BDM	Mbeya
98.	Telezia Wahotile	F	Member, BWM-BDM	Mbeya
99.	Japhet A. Mwalusanya	M	Member, BWM-BDM	Mbeya
100.	Jeneta Sitivini	F	Member, BWM-BDM	Mbeya
101.	Omary Makolo	M	Member, BWM-BDM	Mbeya
102.	Julias M. Mwanibingo	M	Vice Chairman, BWM-BDM	Mbeya
103.	Aden M. Ngassala	M	WEO, Igawilo	Mbeya
104.	Wakaa Nkembo	M	VEO, Ikhoho Village	Mbeya
105.	Yusuph J. Hamdala	M	VEO, Inyala Vilage	Mbeya
106.	Leodgard Haule	M	National Coordinator, Songwe River Transboundary Catchment Management	Mbeya