

**COMMUNITY BASED ORGANISATIONS AND
NATURAL (WATER) RESOURCES MANAGEMENT: A
CASE STUDY OF THARAKA WOMEN WATER USERS
ASSOCIATION (TWWUA)**

**A PROJECT PAPER SUBMITTED IN PARTIAL
FULFILLMENT FOR THE MASTER OF ARTS IN
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DEVELOPMENT) AT THE UNIVERSITY OF NAIROBI**

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OCTOBER 2008

DECLARATION

This research report is my original work and has never been presented for a degree award in any other university.

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DEDICATION

This research work is dedicated to my husband James Nguo who was there for me morally and financial through out my studies, my daughter Sadella Makena who was a source of inspiration always smiling at mummy even when the going was tough and my Dad Kobia Lintari who always checked where I was at and reminded me that I need to finish my project.

TABLE OF CONTENTS

DECLARATION.....	i
DEDICATION.....	ii
TABLE OF CONTENTS.....	iii
ACKNOWLEDGEMENTS.....	v
ABSTRACT.....	vi
LIST OF TABLES.....	viii
LIST OF ABBREVIATIONS.....	ix
ANNEXES.....	x
1.0 INTRODUCTION.....	1
1.1 STATEMENT OF THE PROBLEM.....	5
1.2 RESEARCH QUESTION.....	6
1.3 STUDY OBJECTIVES.....	7
1.4 JUSTIFICATION.....	8
1.5 SCOPE OF THE STUDY.....	9
2.0 LITERATURE REVIEW.....	10
2.1 INTRODUCTION.....	10
2.2 NATURAL RESOURCES MANAGEMENT.....	10
2.2.1 Heterogeneity and collective action.....	13
2.2.2 Poverty, equity and CPR management.....	15
2.2.3 Constraints to collective action around water management.....	18
2.2.4 Women in Africa's development.....	19
2.2.5 The open access.....	20
2.3 THARAKA WOMEN WATER USERS ASSOCIATION.....	21
2.3.1 Name and identity of the organisatio.....	22
2.3.2 Vision, mission and values.....	22
2.3.3 Goals and strategies.....	23
2.3.4 Management amd membership.....	25
2.3 THEORETICAL FRAMEWORK.....	29
2.3.1. Social Capital Theory.....	29
2.4 CONCEPTUAL FRAMEWORK.....	32
2.7 OPERATIONAL DEFINITIONS.....	33
3.0 CHAPTER THREE - METHODOLOGY.....	34
3.1 INTRODUCTION.....	34
3.2 STUDY SITE DESCRIPTION.....	34
3.3 SAMPLING.....	36
3.4 DATA COLLECTION.....	36
3.4.1 Questionnaire.....	36
3.4.2 Group level interviews.....	37
3.4.3 Key Informant Interviews.....	38
3.4.4 Desk Study.....	38
3.4.5 Observation.....	38
3.4 ANALYSIS OF DATA.....	39
4.0 CHAPTER FOUR: STUDY FINDINGS AND ANALYSES.....	30
4.1 INTRODUCTION.....	40
4.2.0 CHARACTERISTICS OF TWWUA.....	40
4.3.0 CHARACTERISTICS OF THE MEMBERS.....	40
4.3.1 Sex of the Respondents.....	40
4.3.2 Marital Status of Respondents.....	40

4.3.3 Age of the Respondents.....	41
4.3.4 Occupation of Respondents	42
4.4.0 EFFECTIVENESS AND SUSTAINABILITY OF TWWUA.....	43
4.4.1 Reasons and Expectations for Joining TWWUA.....	43
4.4.2 Reasons that prompted Members enrolment.....	44
4.4.3 Respondents' Expectations Met by TWWUA.....	45
4.4.4 Activities Run by TWWUA.....	46
4.4.5 Challenges Facing TWWUA.....	47
4.5.0 PARTICIPATION OF RESPONDENTS IN TWWUA.....	49
4.5.1 Members' Contribution to TWWUA.....	49
4.5.2 Nature of Members' Involvement in TWWUA.....	50
4.5.3 ACTUAL BENEFITS TO MEMBERS	51
4.5.5 Beneficiaries outside TWWUA.....	53
4.5.6 Importance of TWWUA to the Community.....	54
4.6.0 Conclusion.....	56
5.1 INTRODUCTION.....	57
5.2 SUMMARY OF MAJOR FINDINGS.....	57
5.3 CONCLUSIONS.....	58
5.4 RECOMMENDATIONS FROM THE STUDY.....	59
5.5 RECOMMENDATIONS FOR FURTHER STUDY.....	60
REFERENCES.....	61

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ABSTRACT

Natural resources mobilisation and management at times has not been an easy task for communities and especially so for those living in arid and semi arid areas of Kenya. In other cases, like in the case of Tharaka and Kanthungu locations in Mwingi districts, communities and at times with collective responsibility with other stakeholders have organised themselves and are managing their natural resources-water. In Tharaka and Kanthungu locations, a community based organisation (CBO), Women Water User's Association (TWWUA) is managing a community water project.

The study is an investigation of a local water management institution (TWWUA), its characteristics and its impacts on collectively owned water resource management in Tharaka and Kanthungu locations of Mwingi district.

The main objective of this study was to investigate the local water management institutions (TWWUA), its characteristics and its impacts on collectively owned water resource management in Tharaka and Kanthungu location of Mwingi district. This study sheds light on how water management institutions shape the individual's action and expectations and their use of water resources and its implication on efficiency and sustainability of the commons.

The literature review was done by review of secondary data generally on local organised institutions and on TWWUA. This information was found in different books and journals in various libraries and at the TWWUA offices. The literature review gives understanding on natural resources management by local institutions,

collective action by members on the management and constrains that face these institutions and the members in the management of natural resources.

Data for the study was collected from TWWUA officials, members and a few key informants in the community. The information from TWWUA officials and members formed the basis on the characteristics, organisation and effectiveness of the group. More data was collected from key informants for control of the study. This data was collected by use of questionnaires. The data which was both qualitative and quantitative was analysed using SPSS.

Key findings and conclusions from the study were that, there was strong connection between the management of the self-help group and its water related activities to the empowerment of women in the Tharaka community. One of the major benefits highlighted by both members and nonmembers as accruing from the project was the empowerment of women in project management and general leadership with a woman aspiring for council for the first time in the aftermath of the formation of the organization.

In conclusion, the women-initiated projects like TWWUA are faring well with the resultant impact being the empowerment of women and equality with the men in leadership and other decision making spheres. TWWUA has managed to supply water to most of its members, conduct reflect classes for adult learners, and also start small scale income generating activities for its members; however, it has faced many challenges that include inadequate skilled personnel, cultural barriers, lack of financial resources and over reliance on donor support.

LIST OF TABLES

Table 1: factors identified by key authors as affecting local organizations for natural resource management

Table 2: Age of Respondents

Table 3: Occupation of Respondents

Table 4: Respondents' Year of Joining TWWUA

Table 5: Reasons for joining TWWUA

Table 6 : Respondents' expectations met

Table 7: TWWUA activities

Table 8: Members' contribution to TWWUA

Table 9: Benefits to Members of the Community outside TWWUA

List of Charts

Table 1: Marital Status of Respondents

Chart 2: Nature of members involvement in TWWUA

Chart 3: Benefits for members along the mission of the organization

Chart 4: Other benefits to members

Chart 5: Importance of TWWUA to the community

LIST OF ABBREVIATIONS

CBO	- Community Based Organization
NGO	- Non Governmental Organization
TWWUA	- Tharaka Women Water Users Association
CPR	- Common Property Resources
WHO	- World Health Organization
UNICEF	- United Nations Children's Fund

ANNEXES

Appendix 1: Information about TWWUA group

Appendix 2: Individual TWWUA members' interviews

Appendix 3: Key informants interview guide

Appendix 4: Observation Check List

1.0 INTRODUCTION

Ever since the publication of Hardin's articles 'The Tragedy of the Commons' there has been a growing debate on common pool resources, property rights, and resource degradation. The concept has been used to explain water resources management, overexploitation of forests and fisheries, overgrazing, air and water pollution, abuse of public lands, population problems, extinction of species, and other problem of resource misallocation (Stevenson, 1991). When property rights to natural resources are absent and unenforced i.e. when there is open access, no individual bears the full cost of resource degradation. The result is 'free riding' and over exploitation, what Hardin termed the 'Tragedy of the Commons' (Hardin, 1968). It was thought that a resource held under a common property resource (CPR) regime is inherently inefficient since individuals do not get proper incentives to act in a socially efficient way. The main goal of managing natural resources is to maximize the long-term economic rent. Until recently many scholars believed that community-based management generates little or no rent due to absent of proper management. As a consequence scholars have long questioned the incentive for efficient use of common pool resources under CPR regime (Gordon, 1954; Scott, 1955; Hardin, 1968) and solutions have been proposed, such as state control and management (Hardin, 1968) or privatisation of the commons (Demsetz, 1964). The property rights school argues that private property is the most efficient way to internalise the externalities that arise in former cases. It also makes the contention that private property rights will spontaneously emerge in reality to increase efficiency (Demsetz, 1967).

An increasing number of scholars, however, advocate that decentralized collective

management of CPRs by their users could be an appropriate system for overrating the 'tragedy of commons' (Berkes, 1989; Wade, 1989; Jodha, 1986; Chopra et al. 1989; Ostrom, 1990, 1992). More careful analysis of the foundation of CPR regimes in developing countries have shown that local institutional arrangements including customs and social conventions designed to induce cooperative solutions can overcome the collective action problem and help achieve efficiency in the use of such resources. (Gibbs and Bromley, 1989; Ostrom, 1990). Scholarship on the commons argued that Hardin confused common property with open access, failing to distinguish between collective property and no property (Ciriacy-Wantrup and Bishop, 1975). Even the common grazing lands in Hardin's classic 'Tragedies of the Commons' were well looked after for many centuries, before they declined for reasons unrelated to any inherent flaw in the commons system (Cox, 1985). The tragedy tends to be related to the breakdown of existing commons systems due to disruptions that have originated externally to the community (Berkes, 1989). Hardin's tragedy of the commons often results, not from any inherent failure of common property, but from institutional failure to control access to resources, and to make and enforce internal decision for collective use. Institutional failure could be due to internal reasons, such as the inability of the users to manage themselves, or it could be due to external reasons, for example an incursion of outsiders (Dove, 1993; Berkes and Folke, 1998).

Community natural resources management – and especially water management must play a key part with other approaches in poverty alleviation. Community water management permits a democratizing decentralisation of decision and accountability. Community water management well done, empowers people (particularly the poor and otherwise

disadvantaged) to take part in the decisions that define their own future. A study by Water Aid in Tanzania, documented the impact of borehole development and community management in terms of improvement in health of women, children, improved agriculture output, reduced expenditure on water and savings in women and children's water collection time, enabling them to spend more time in family activities and attending schools (Swallow, 2002). If community members then spend more time in doing productive roles, this works towards poverty alleviation in a community.

Natural resources mobilisation and management at times has not been an easy task for communities and especially so for those living in arid and semi arid areas of Kenya. In other cases, like in the case of Tharaka and Kanthungu locations in Mwingi districts, communities and at times with collective responsibility with other stakeholders, have organised themselves and are managing their natural resources- water. In Tharaka and Kanthungu locations, a community based organisation (CBO), Women Water User's Association (TWWUA) is managing a community water project.

Tharaka Women Water Users Association (TWWUA) is a Community Based Organization managed by women in Tharaka and Kanthungu locations. The organization is based in Ciampiu market and operating in Tharaka and Kanthungu locations of Mumoni Division, Mwingi district.

TWWUA was formed in 1999 to address problem of access to water in Tharaka and Kanthungu locations which adversely affects households in the two locations. The CBO

has a membership of 1,200 women. The CBO targets 2003 households and plans to reduce distance to water points to about 3 kms.

The vision of the organization is to have a society with access to water clean portable water.

Currently TWWUA is managing a multi million 74 km water project across the two locations of Tharaka and Kanthungu in Mumoni division with financial support of Action Aid Kenya – Tharaka and Kanthungu Development Initiative. The piped water flows by gravity and serves up to 15,000 people within the two locations.

The water project is an empowering tool for Tharaka and Kanthungu women who are culturally not allowed to own property. Through the project the women benefit economically through the sale of water.

There seems no reason to suppose a priori that community institutions are always efficient and equitable and they serve the purpose that the institutions were created for. There are multiple reasons for limited community involvement in the management of natural resources and especially water which would include participation mode, involvement of all community members, property rights of individual members and benefits from the project.

1.1 Statement of the problem

Water sector reforms in many countries in the global south call for greater involvement of local communities to undertake management of water resources. This thrust of policies on community participation in water management does not imply that communities are willing or are capable to undertake these responsibilities (Schouten & Moriarty, 2003). Despite having the innovative policies to promote community-based resource management in place, natural resources institutions are said to be unable to provide a significant contribution to the livelihood of poor and marginalized people due to their failure to take into account broader socio-economic and distributional issues. Poor users are not actually benefiting when all opportunity costs are accounted for in the assessment of costs and benefits of water management. There are some cases that people who could not contribute the costs of resource management have given up their participation.

Analysis of the impact of community-based institutions in managing common pool resources is becoming a central issue since management objectives and the nature of dependency on common property resources is somewhat different for different income groups. The distributive consequences of management institutions might not be only a crucial determinant of the extent of resource utilization but also an indicator of the level of poverty. With the expansion of community-based management regime, a question of equity in sharing the benefits from, and costs of, participatory water management has been emerging more acutely than ever before. Who controls and manages the water? Who makes decisions? What is the size and nature of benefits? How will women and the disadvantaged section of the society be empowered to address their social and political

constraints? These are the completely unanswered questions, which need to be properly addressed to give a new direction for participatory water management. (Hobley and Wollenberg, 1996).

The study seeks to investigate the local water management institutions (TWWUA), its characteristics and its impacts on collectively owned water resource management in Tharaka and Kanthungu locations of Mwingi district.

1.2 Research question

This study seeks to understand the relationship between water resources institutional arrangements through community based management and efficient use, equitable allocation, and sustainable conservation of common-pool water resources. The main argument of this study is that what makes social systems of common pool water resource management successful is sustaining the resource and distributing its benefits to the community members that affect institutional durability and long-term management of water resources at the local level. This study specifically addresses the following questions;

- .1) what are the characteristics of the local water management institution (TWWUA)?
- 2) How effective is TWWUA in managing water resource in Tharaka and Kanthungu locations?
- 3) What is the level of participation of TWWUA members in the management of water resources?

4) What are the perceived and actual benefits to TWWUA members from the institution and water management?

1.3 Study objectives

Main objective;

To investigate the water management organisation (TWWUA), its characteristics and effectiveness in water management in Tharaka and Kanthungu locations of Mwingi district.

Specific objectives;

1) To establish the characteristics of the water management organisation, TWWUA and its members in Tharaka and Kanthungu locations.

2) To assess the effectiveness of the institution in managing water resources in Tharaka and Kanthungu locations.

3) To examine the participation of TWWUA members in the water management

4) To examine members' perceptions of the actual benefits of TWWUA.

1.4 Justification

The reforms of the Water Act of 2002 introduced in Kenya have created space for the participation of rural communities in water management. At the same time, the act vests ownership of all water resources in the country in the State. Accordingly, community based water providers need to acquire licenses to continue providing water to their members. Acquisition of permit runs with land ownership and the current administrative systems to acquire permits are constraining (Mumma, 2005). Given the limited reach of state run water provision system in rural Kenya, the communities in these areas already undertake water management on their own accord. However, these provisions of the act diminish the incentives for communities to undertake collective water management.

Despite the quantity of studies carried out, relatively little is known about a number of key aspects of water resources management and poverty alleviation and in particular, contribution of communities in poverty alleviation through water management. There is lack of a clear link between water resources and poverty. Earlier studies have concentrated on water and hygiene and most of these studies have targeted urban and not rural areas. In Kenya, these research gaps are key and warrant empirical investigation.

This study will focus on establishing the characteristics of TWWUA, and its impacts on collectively owned water resource management in Tharaka and Kanthungu location of Mwingi district. It will shed light on how water management institutions shape the individual's action and expectations and their use of water resources.

1.5 Scope of the study

The study seeks to understand how water management institutional arrangements can result in efficient use, equitable allocation, and sustainable conservation of water resources. The main argument of this study is that what makes social systems of water resource management successful is sustaining the resource and distributing its benefits to the community members that affect institutional durability and long-term management of water resources at the local level.

The study focus on establishing the characteristics of TWWUA, and its impact on collectively owned water resources management in Tharaka and Kathungu locations of Mwingi district.

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter looks at the general situation in local management institutions, their determinants and their impacts on collectively owned natural resource management with particular focus on water.

It will also look at the constraints facing local management institutions in natural resources management.

Therefore, this will be a study on documented research in natural resources management by local institutions.

2.2 Natural Resources Management

Recent literature on CPR management criticized "Hardin's Tragedy of the Commons" often results, not from any inherent failure of common property, but from institutional failure to control access to resources, and to make and enforce internal decisions for collective use. These critiques argue that Hardin's tragedy of commons' is applicable only to the situation of appropriation of 'open access resources' and not to commons i.e. common property resources (Ciriacy-Wantrup and Bishop, 1975; Bromley and Cernea, 1989). In case of open-access and unregulated common property individuals do not get proper incentives to act in a socially efficient way. In the literature of common property broadly three different schools of thought have emerged on the institutional arrangements to avert the tragedy of commons. According to property rights school the problem of over

exploitation and degradation of common property resources (CPRs) can be resolved only by creating and enforcing private property rights (Demsetz, 1967; Johnson, 1972; Smith, 1981; Cheung, 1970). Private property is considered to be the most efficient way to internalise the externalities generated from over exploitation of the commons. The scholars of second school of thought advocate that only the allocation of full authority to regulate the commons to the external agency i.e. state property regime can reduce the overexploitation of CPRs (Hardin, 1968). Institution building at the community level for managing common-pool resources has emerged as a third possibility. An increasing number of scholars advocate that decentralized collective management of CPRs by their users could be an appropriate system for overrating the 'tragedy of commons' (Berkes, 1989; Wade, 1987,1988; Jodha, 1986; Chopra et al., 1989, Ostrom, 1990). Ostrom (1990) argues that collective action for CPR management will be long enduring and successful under conditions of well-defined boundaries, congruence between appropriation and provision rules, graduated sanctions, efficient conflict-resolution mechanisms and effective monitoring.

Some recent literature, however, argues that property rights by themselves do not provide adequate incentives and conditions for sustainable management. Appropriate cost-benefit sharing arrangements, together with empowerment of resource users, technical assistance to develop and strengthen local organizational capacities, and support equitable and sustainable management efforts are examples of other essential elements. The success of the property rights regime depends upon the congruence of ecosystem and governance boundaries, the specification and representation of interests, the matching of governance

structures to ecosystem characteristics, the containment of transaction costs, and the establishment of monitoring, enforcement and adoption processes at the appropriate scale (Eggertsson, 1990; Ostrom, 1990; Bromley, 1991; Hanna, 1992; Hanna and Munasinghe, 1995). While the aggregate gains from reducing common pool problems or promoting economic growth through the definition or redefinition of property rights are unlikely to be controversial, the distribution of wealth and political power inherent in the proposed rights structure will be a source of dispute (Libecap, 1989). Restricting the access of poor people to natural resources through changes in property rights structure in common-pool resources is likely to increase the level of poverty unless specific measures of compensatory transfer schemes are in place to safeguard the interests of the most vulnerable section of the community. There seems no reason to suppose a priori that institutions are always efficient and equitable and they serve the purpose that the institutions were created for.

The assertion that institutions are always optimal is ludicrous when confronted with reality. Institutions created by man are not always optimal, efficient and egalitarian. Without careful empirical analysis (which is rare) functionalist explanations may become justifications for irrational or non-functional institutions (Bates, 1995). There seems no reason to suppose a priori that competitive pressures are always sufficient to break up less than optimal institutions (Basu et al., 1987). Institutions do not always decrease transactions costs but might actually, when they are inefficient, increase transaction costs (Olsson, 1999). Based on review study on CPR management in Zimbabwe,(Campbell et al. 2001) argue that there is a fair degree of misplaced optimism about CPR institutions

since the formal rule-based system that form the cornerstones of CPR management are gradually replaced by donor-assisted intervention rooted in norm-based controls. (North, 1990) pointed out that not all institutions are efficient and powerful groups to serve their particular interests can capture institutions of collective action. In addition, it may be the richer members of the community that dominate local politics and organizations as found in JFM in India where benefits from the system goes to certain sectors of the community (Saxena, 1989). Understanding the determinants and impact of common property institutions and distributional implication of CPR regime is essential for informing water management policies and programs in Kenya where the water act is emphasizing promotion of community-based institutions for water resource management and poverty reduction through better management of the commons.

2.2.1 Heterogeneity and collective action

One of the emerging issues related to common property resource management is the group inequality and appropriation of resources from the commons. The relationship between socioeconomic heterogeneity and distributional implications of community-based resource management is becoming a growing concern in participatory resource management. (Bardhan and Dayton-Johnson 2000) extensively reviewed the case-study literature on heterogeneity and commons management. They noted a U-shaped relationship between inequality and commons management. Very high and very low levels of inequality are associated with better commons performance, while mid-range levels of inequality are associated with poor outcomes. However, heterogeneity and income inequality in community-based property rights structure is also said to be

conducive to the successful outcome of the collective action. (Olson, 1965) hypothesized that the possibility that groups where considerable heterogeneities exist may be privileged if those with the most economic interests and power were to initiate collective action to protect their own interests. (Baland and Platteau, 1997) also discuss the theoretical possibility of Olson's hypothesis especially when management of common pool resources involves important "non-convexities" in its production function.

Drawing upon recent theoretical advances in the analysis of cooperation, (Molians, 1998) undertook an econometric analysis of the determinants of successful collective action based on a survey of 104 peasant cooperative institutions in Paraguay. Molian's study shows that controlling as much as possible for the specific characteristics of the community and peasant committee, there is a U-shaped relationship between community inequality and cooperative performance. (Dayton- Johnson, 2000) developed a simple model of individual household's incentives in a community owned irrigation system and found that social heterogeneity, measured by the number of different villages from which the users of a given system are drawn, is consistently and significantly associated with lower levels of infrastructure maintenance.

Though there is growing literature on heterogeneity and performance of collective action, existing studies do not explain well the distributional implication of CPR regime in light of local level inequality, which is undoubtedly an important determinant of successful collective action. It is implicitly assumed that once the criteria for successful collective action are met, there will be egalitarian distribution. Granting community-based property

rights over CPRs without distributive consideration do not automatically enhance the access of poorer households to the local resources, who are often the prime target of community-based natural resource management program.

2.2.2 Poverty, equity and CPR management

It has been often argued that poor people extract more natural resources due to greater reliance on the natural resource base and also due to their high social discount rate. On the other hand, scholars argue that compared to non-poor, the poor may depend more on the commons in relative terms, but in the absolute terms their dependency is lower (Dasgupta, 1993), particularly for resources with good market opportunities. Consistent with growing theoretical literature on common-pool resource management, there is large amount of empirical research dealing with dependence of poor on the CPRs (Jodha, 1986, 1995; Beck and Ghosh, 2000). Beck and Nesmith (2000) note that common property resources contribute about 12% to the household income of poor rural households. Jodha's (1986, 1995) study from 80 villages in 21 districts in India concluded that CPR is contributing 15-25% of total income of poorer households. Jodha found that the privatization of CPRs as a strategy to help the rural poor yielded negative results and also reduced productivity of the commons. In his study of common pool resources in West Bengal, India, Beck (1998) observes that access to CPR by the poor is gradually decreasing across all study villages and agro-ecological regions. There is a very clear differentiation between benefits gained from CPR by poor and non-poor households.

In a study of 29 villages in South-eastern Zimbabwe,(Cavendish 1998, 1999) arrived at

even larger estimates. He observes that the proportion of income based directly on the commons is about 35%. Based on a qualitative assessment of babassu products in Maranhão, Brazil, (Hecht et al. 1988) also conclude that the products offer support to the poorest of the poor, especially the women.

However, McKean (1992) argued that entitlement to products of the commons varies to a surprising extent. She concludes that distribution of benefits in collective action reflects inequalities in private wealth. (Hill and Shields 1998) observed that community incentives in JFM in India are not so clear-cut, however, the main losers in JFM are fuel wood head loaders who are often from the poorest subgroup within the village. Moreover, it is the richer members of the community who dominate local politics and organizations as found in JFM in India where benefits from the system go to certain sectors of the community (Saxena, 1989). (Ribot 1995) for Senegal and (Andersen 1995) for India report how wealthy and influential villagers in control of supposedly democratic forest councils are able to use state resource laws for their personal benefits. (McKean, 1992) also reached a similar conclusion that distribution of benefits in collective action is often reflected in inequalities in private wealth and asset holdings. (Dasgupta 1999) notes that among Kofyar farmers in Nigeria obligatory labour on both communal projects and individual farms is drawn equally from all member households, but this benefits large cultivator disproportionately.

2.2.3. Constraints to collective action around water management

In the context of limited success of state and private water agencies to provide water to

rural communities, decentralization of water sector and community based approaches to water management have gained acceptance (Schouten & Moriarty, 2003) Water sector reforms in many countries in the global south call for greater involvement of local communities to undertake management of water resources. For instance, in Malawi, the government has introduced Community Based Management and Village Operation and Maintenance systems under which the local communities organize themselves into village health and water committees (WHO/UNICEF, 2000b). This thrust of policies on community participation in water management does not imply that communities are willing or are capable to undertake these responsibilities (Schouten & Moriarty, 2003). Non-involvement of communities in water supply management and inappropriate institutional structures has been identified as one of the constraints to development of water sector in Africa (WHO/UNICEFF, 2000b). At this point it becomes important to understand what factors prevent communities from investing in water management. As per a discussion on community poverty traps by (Swallow 2002), there are certain conditions that trap a community in low levels of action around investment in water management. Some of these conditions are: high fixed cost associated with water management vis-à-vis poverty level in the community, non-availability of credit to finance community investments, social capital present in the community to undertake collective water management, issues of property and tenure security, interference of neighboring communities. See **table 1** for factors identified by key authors as affecting local organizations for natural resource management.

Figure 1: Factors identified by key authors as affecting local organizations for natural resource management.

	Ostrom (1990, 1992b)	Wade (1988)	Oakerson (1985, 1992)	Tang (1992)	Bardhan (1993)
Physical and technical characteristics	<ul style="list-style-type: none"> • Structure • Flow patterns • Condition of the resource • Technology 	<ul style="list-style-type: none"> • Boundedness of resource • Size • Cost of exclusion technology 	<ul style="list-style-type: none"> • Capacity of the resources • Excludability of the resource • Divisibility – Physical boundaries 	<ul style="list-style-type: none"> • Area size • Resource supply • Possibilities of substitution 	<ul style="list-style-type: none"> • Boundedness of resource
Characteristics of the group of users	<ul style="list-style-type: none"> • Number of members • Time horizon • Proximity to resources and users • Extent of interaction • Skills and assets of leaders • Norms of behaviour/culture • Stability 	<ul style="list-style-type: none"> • Size of user group/number of members • Boundaries of the group • Location of resource and residence of users • Users knowledge • Users demand • Power structure • Mutual obligations 		<ul style="list-style-type: none"> • Number of users • Homogeneity • Sources of income – dependence on resource 	<ul style="list-style-type: none"> • Size of group • Shared norms • Group identification • Egalitarian structures/homogeneity • Openness • Stability; migration and mobility possibilities
Institutional arrangements	<p>Design principles</p> <ul style="list-style-type: none"> • Member and access rules • Resource boundary rules • Collective choice arrangements • Recognition of rights to organize by external agents 		<ul style="list-style-type: none"> • Decision – making arrangements • Operational rules • Collective choice rules • External arrangements 	<ul style="list-style-type: none"> • Operational rules • Collective choice rules • Form of governance – community vs bureaucratic system 	<ul style="list-style-type: none"> • Structures of punishment/sanctions • Monitoring mechanisms • External authorities' recognition of local norms
Relationships				resource, group and institution relationship	Ecological stress

2.2.4 Women in Africa's development

African women's fundamental contributions in their households, food production systems and national economies are increasingly acknowledged, within Africa and by the international community. This is due, in no small part, to African women's own energetic efforts to organize, articulate their concerns and make their voices heard. At both grassroots and national levels, more women's associations have been formed during the 1990s.

"Africa is overflowing with women leaders," notes Ms. Soukeyna Ndiaye Ba, President of Women's Development Enterprise in Africa, a Dakar-based non-governmental organization (NGO). "They lack only the training and the means to bloom." This highlights the next big step needed for advancing the position of women in Africa: strengthening their capacities and skills and expanding the opportunities for women to more fully develop their leadership roles. (Manuh, 1998)

Women converged on Dakar in 1994 to attend the African Women's Preparatory Conference. They came to articulate an African position for the Beijing Fourth Women's World Conference. The resulting African Platform for Action identified several priorities. These included combatting the increasing poverty of African women; improving women's access to education and health services. The Dakar conference also noted the emergence of numerous women's groups and NGOs in Africa and the increasingly concrete expression of their organizational potential.

The Beijing conference that followed in 1995 stressed the empowerment of women as one of the central development goals of the 21st century. It adopted a Platform for Action

which called for the mainstreaming of a gender perspective in the design, implementation and monitoring of all policies and programmes, including development programmes. It committed countries to design their own specific programmes and activities in consultation with women's groups and other NGOs to implement the Beijing Platform for Action.

UN agencies such as the UN Development Fund for Women (UNIFEM), the International Research and Training Institute for the Advancement of Women (INSTRAW) and UN Development Programme (UNDP) support gender awareness training for policy-makers in Africa, provide technical assistance and build strong gender components into their own programming and projects.

But women in Africa continue to face enormous obstacles. The growing recognition of their contributions has not translated into significantly improved access to resources or increased decision-making powers. Neither has the dynamism that women display in the economic, cultural and social lives of their communities through their associations and informal networks been channeled into creating new models of participation and leadership. (Manuh, 1998)

2.2.5 The open access

The open access regime is where the natural resources are seen as having no property rights or are unregulated (Kameri-Mbote, 2002). This also means that the resources are not owned by anyone and as such they have no rules regarding who can or cannot access the resources. This means that access and use is based on a first come first served basis (Ciriacy-Wantrup cited in Kameri-Mbote, 2002). This kind of regime envisages a chaotic

management scene of natural resources as open access users have no responsibility to any one. Common pool resource scholars view this regime as providing common users with no incentives to act in socially efficient ways. Critiques of Hardin's theory of 'tragedy of commons' see the tragedy happening only under this kind of regime (Ciriacy- Wantrup cited in Kameri-Mbote, 2002).

2.3 Tharaka Women Water Users Association (TWWUA)

Tharaka Women Water Users Association (TWWUA) is a Community Based Organization managed by women in Tharaka. The organization is based in Ciampiu market and operating in Tharaka and Kanthungu locations of Mumoni Division, Mwingi district.

TWWUA was formed in 1999 to address problem of access to water in Tharaka community which adversely affects households in the two locations. The CBO targets 2003 households and plans to reduce distance to water points to about 3 kms.

Currently TWWUA is managing a multi million 74 km water project across the two locations of Tharaka and Kanthungu in Mumoni division with financial support of Action Aid Kenya – Tharaka Development Initiative. The piped water flows by gravity and serves up to 15,000 people within the two locations.

The water project is an empowering tool for Tharaka women who are culturally not

allowed to own property. Through the project the women will benefit economically through the sale of water.

2.3.1 Name and identity of the organization

The name of the organization is Tharaka Women Water Users Association (TWWUA)

The organization is registered as a self-help group with the social development office under the ministry of culture and social services. Certificate registration number 3955 year 2001.

In the circumstances the name may be changed per the possibility of extending to other areas in Kenya with the approval of the AGM when circumstances demand that the name be changed.

The organization is non-political and non-profit making organization

Its main office is located at Ciampiu market in Tharaka location of Mwingi district.

2.3.2 Vision, mission and values

Vision

To have a society with access to water clean portable water

Mission

Provide water at reduced distances in Tharaka.

Values

- Working with women.

- Transparency and accountability.
- Honesty.
- Empowered women.
- Community participation.

2.3.3 Goals and strategies

TWWUA has the following goals and strategies clearly laied out in there strategy;

Goal 1: To improve access and distribution of safe drinking water

The strategies to attain this goal are to:

- 1 Provide portable water for domestic use at reduced distances through the existing water kiosk network throughout the year
- 2 Maintain a community water supply system within and outside the two locations of Tharaka and Kanthungu.
- 3 Expand the current water kiosks to areas where there is no access
- 4 Establish other sources of water such as earth dams and shallow wells

Goal 2: To ensure food security in Tharaka by improving food production through irrigation

Strategies include to;

- 1 Explore opportunities to tap water from Tana River for irrigation

- 2 Partner with the Ministry of Water, Agriculture and GTZ Small irrigation projects
- 3 Pilot the irrigation project

Goal 3: To empower women through capacity development

Strategies include to:

- 1 Establish and revive old reflect circles and other appropriate methods
- 2 Establish at least 7 reflect circles and recruit teachers and training materials
- 3 Operate adult learning classes for women through reflect circles to enable them know how to read and write. This will empower women with communication skills for better development.
- 4 Provide exposure training to learners

Goal 4: Strengthen governance and management in TWWUA

Strategies include to:

- 1 Train committee members on roles, responsibilities and staff supervision
- 2 Maintain sound financial management systems.
- 3 Develop human resources and finance policies and systems
- 4 Share vision, mission and values to all members
- 5 Improve the financial/water payment collection methods and systems
- 6 Effective management of staff particularly the water kiosk attendants

TWWUA was formed in 1999 and has a constitution and by-laws. Its vision is the provision of water to the local communities and also the empowerment of women in the community. The group has an operation strategic plan that was prepared with the assistance of Action Aid Kenya in 2007. The group aims at reducing the distance of access to clean drinking water in the community.

Some key informants were still divided on the legal status of the organization. Some call it CBO while others term it as a women group. However, there is general agreement of the role of TWWUA as the provision of water.

Operations

- TWWUA undertakes its operations in Kanthungu and Tharaka locations through the following strategies
- Maintaining sound financial management, administration and record keeping systems
- Providing potable water for domestic use at reduced distances against payments
- Maintaining a community based water supply system to all the people within and outside the two locations i.e. Kanthungu and Tharaka

2.3.4 Management and Membership

According to TWWUA constitution, membership is open to adult female with a registration fee of Kenya Shillings twenty (Kshs 20) which is to be submitted to the treasure. This is subject to adjustment by the committee.

Members should:

Be a woman of 18 years and above

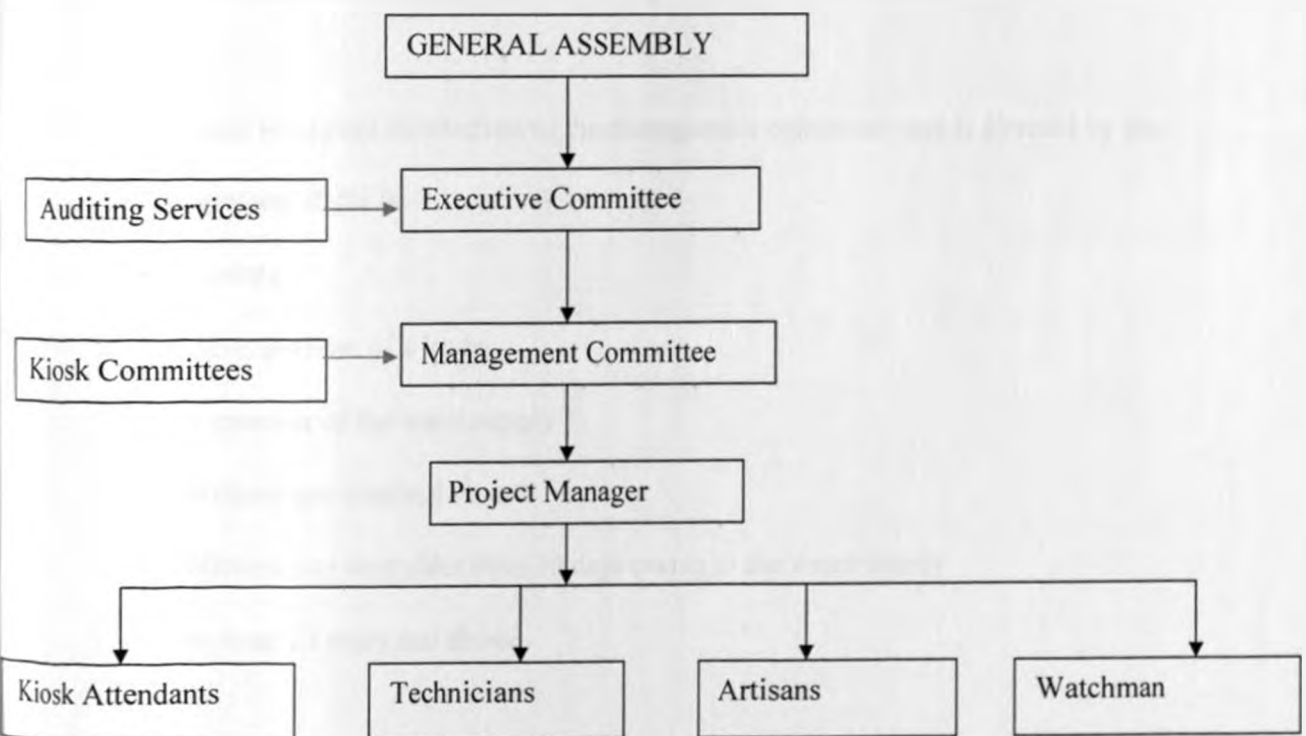
Of sound mind

Pay the registration fee or any subscription pay as determined by TWWUA committee

Be ready to comply with the rules and regulations of the organization

The membership of TWWUA stood at 1380 women by the time of the study. The membership registration fee is Ksh 20.

Governance and management structure



Management committee

- The management committee consists of office bearers, elected representatives from each water kiosks, which shall manage the affairs of the water supply
- Members of the management committee are elected at the general meeting from among the members of each water kiosk of water supply
- The management committee appoints from its members an executive committee comprising of the chair person, secretary and treasurer and not more than two other members who are responsible for the day to day management and conduct of the affairs of the water supply. The executive committee is answerable to the management committee and reports and seeks necessary approval from the management committee and is directed by the management committee.

A person is eligible for election to the management committee and is directed by the management if she is:-

- Literate
- Have qualities of a leader
- A member of the water supply
- Without any criminal record
- Without any debt older than 30 days owing to the water supply
- At least 25 years and above

The office bearers of the management committee shall be the chairperson, vice chairperson, secretary, assistant secretary and treasure elected at the general meeting.

All the seven executive committee members are literate with the least education level among them being primary education.

Powers of the management committee

- The management committee exercises all powers of the water supply except those reserved for the general meeting subject to any regulations duly laid down by the water supply in its general meeting or in these by laws and in particular have the following powers and duties
- To regulate, control, plan and administer the management of the water supply
- To consider and approve or reject applications for membership
- To prepare a programme of establishment for the general meeting
- To prepare for the general meeting a budget for the next financial year
- To assist and authorize the employment of staff and set their remuneration as shall be necessary for the achievements of the objectives of the water supply
- To recommend for adoption by the general meeting the rates to charge against the services provided to members of the water supply sufficient to cover all liabilities and obligations both outstanding and anticipated for the next financial year following the general meeting
- To maintain the true account of all monies received and a record where in members labor contributions are clearly recorded.
- To keep a true account of the assets and liabilities of the water supply
- To prepare and lay before the general meeting accounts and balance sheets duly audited provided that this shall be prepared within a period of not more than six months after the close of the financial year

- To enter into contracts and execute documents in furtherance of the objectives of the water supply
- To determine and authorize petty cash limits for paid staff
- To impose fines or penalties in accordance with any rules made in the water supply.

The officials of TWWUA included the chairperson, vice chairperson, secretary, vice secretary and treasurer. They were elected by the management, according to the chairlady and other executive committee members. The management here is the committee elected at every kiosk.

The group has an executive committee composed of seven members who plan activities or programmes and sub-committee who approve minutes drawn from the lowest level at the kiosk to the divisional level. Most respondents said that the committees were elected by secret ballot.

2.3 Theoretical Framework

This study is based on social capital theory

2.3.1. Social Capital Theory

The central thesis of social capital theory is that 'relationships matter'. The central idea is that 'social networks are a valuable asset'. Interaction enables people to build communities, to commit themselves to each other, and to knit the social fabric. A sense of belonging and the concrete experience of social networks (and the relationships of trust

and tolerance that can be involved) can, it is argued, bring great benefits to people. (Field, 2003)

Trust between individuals thus becomes trust between strangers and trust of a broad fabric of social institutions; ultimately, it becomes a shared set of values, virtues, and expectations within society as a whole. Without this interaction, on the other hand, trust decays; at a certain point, this decay begins to manifest itself in serious social problems... The concept of social capital contends that building or rebuilding community and trust requires face-to-face encounters. (Beem, 1999)

There is evidence that communities with a good 'stock' of such 'social capital' are more likely to benefit from lower crime figures, better health, higher educational achievement, and better economic growth. However, there can also be a significant downside. Groups and organizations with high social capital have the means (and sometimes the motive) to work to exclude and subordinate others. Furthermore, the experience of living in close knit communities can be stultifying - especially to those who feel they are 'different' in some important way.

According to Bourdieu, Social capital is the 'the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition' (Bourdieu, 1983). Bourdieu's treatment of social capital is somewhat circular; in summary it boils down to the thesis that privileged individuals maintain their position by using their connections

with other privileged people. Coleman's view is more nuanced in that he discerns the value of connections for all actors, individual and collective, privileged and disadvantaged. But Coleman's view is also naively optimistic; as a public good, social capital is almost entirely benign in its functions, providing for a set of norms and sanctions that allow individuals to cooperate for mutual advantage and with little or no 'dark side'. Bourdieu's usage of the concept, by contrast, virtually allows only for a dark side for the oppressed, and a bright side for the privileged. (Field ,2003)

Social capital refers to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them. In that sense social capital is closely related to what some have called “civic virtue.”

According to Putman, social capital is important because;

It allows citizens to resolve collective problems more easily... People often might be better off if they cooperate, with each doing her share. But each individual benefits more by shirking their responsibility, hoping that others will do the work for her.... [Resolving this dilemma is] best served by an institutional mechanism with the power to ensure compliance with the collectively desirable behavior. Social norms and the networks that enforce them provide such a mechanism.

It greases the wheels that allow communities to advance smoothly. Where people are trusting and trustworthy, and where they are subject to repeated interactions with fellow citizens, everyday business and social transactions are

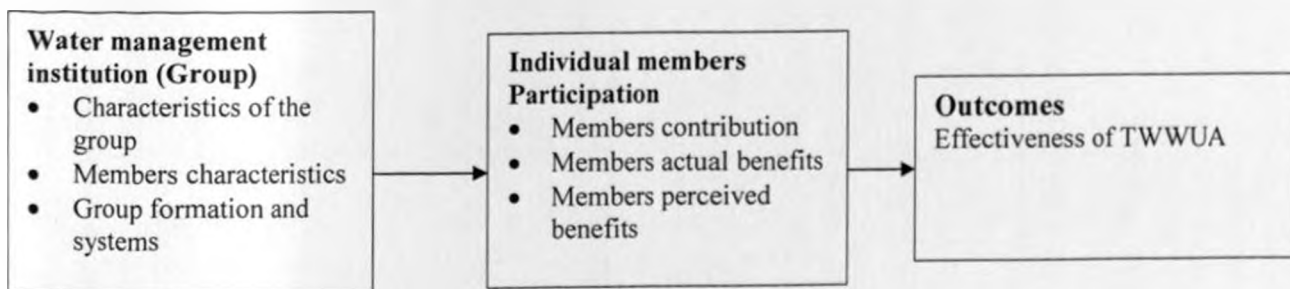
less costly....

It widens our awareness of the many ways in which our fates are linked. People who have active and trusting connections to others – whether family members, friends, or fellow bowlers – develop or maintain character traits that are good for the rest of society. Joiners become more tolerant, less cynical, and more empathetic to the misfortunes of others. When people lack connection to others, they are unable to test the veracity of their own views, whether in the give or take of casual conversation or in more formal deliberation. Without such an opportunity, people are more likely to be swayed by their worse impulses.... (Putman, 2000).

2.4 Conceptual framework

This study considers variables that have been hypothesized to condition success of community-based resource management. These are the characteristics of the water management institution, effectiveness of the water management institution, factors influencing participation of households, members and community reliance on the water system and outcomes. The study will be limited to these variables.

Figure 1; Conceptual framework for examining local organization in water management



Source; Own illustration 2008.

2.7 Operational definitions

Characteristics of the water management organization; Composition of the group, objectives of the group, scope, committee members

Effectiveness of the water management institution; The group meeting its objectives and meeting member's expectations

Participation; Individual member's contribution towards the effectiveness of the group

Perceived Benefit: What the members look at as benefits

Actual Benefits: The true benefits from the organization.

3.0 CHAPTER THREE - METHODOLOGY

3.1 Introduction

This chapter deals with methodology employed in this study. The purpose of this section is to outline the approaches and areas where the research will be conducted and how data will be obtained, analyzed and presented. According to (Prewitt 1975), research methodology entails "systematic procedures and techniques which help the researcher to avoid self-deception". This section covers site selection, unit of analysis, a sampling design, sources of data, and techniques of data collection and data analysis.

3.2 Study site description

Tharaka and Kanthungu locations are semi arid areas with unreliable rainfall. The area receives rainfall of approximately 400-500 mm per annum. A few rivers traverse the area and drain into River Tana, which is an untapped natural resource for the community in TWWUA's catchment area. Agriculture and livestock keeping constitute the economic mainstay of the local community. Due to low and unreliable rainfall, agricultural production is minimal. This has led to reliance on relief food from the government and NGOs. Other economic activities on a relatively small scale include sale of baskets, mats and honey.

Shortage of portable water in the area has been a major problem particularly when women and children have to walk long distances in search of water and therefore not able to focus on other socio-economic activities as the productive work time was spent fetching water for domestic use.

The area has poor communication infrastructure, which is vital for economic activities. There is only one all weather roads. Lack of bridges de-links the area from the world during the rainy season. Telecommunication services are now available, though scantily, through the mobile telephones.

The area being a semi arid area has unreliable rainfall and inadequate water for domestic purposes. Women and children have to walk tens of Kilometers in search of clean water mainly from the river beds. This makes it difficult for them to attend to other social economic activities as most of the time is spent fetching water. Children's education is affected as well as they are not able to attend school regularly especially during the dry season as they have to walk long distances in search of water.

TWWUA is managing a water projects which aims at reducing distance to water points. This has already been done in part of the area. This study seeks to identify and establish the characteristics of TWWUA in water management in Tharaka and Kanthungu locations.

The research selected the site because she speaks the language and she has also worked with one of the major donors to the group for over three years. These factors provided the researcher with understanding of the area and also easy of communication with the group members. So the site was purposively chosen.

3.3 Sampling

A sampling design refers to part of the research plan that illustrates how cases are selected for observation (Singleton et al 1988).

This study interviewed TWWUA members to achieve its objectives. The researcher worked with the TWWUA Chairlady for an updated list of members. A sample was then drawn from the updated list of TWWUA members from the institutions offices. The researcher used systematic sampling to draw a sample from the list. For the purpose of the study, a sample of 50 out of 1380 members was interviewed.

3.4 Data Collection

This is an exploratory study which identified and established the characteristics of TWWUA organisation in Tharaka and Kanthungu locations. For the purpose of this study, the researcher used mixed model method where the research mixes both qualitative and quantitative research approaches.

3.4.1 Questionnaire

A questionnaire is a key input in any study because it influences the degree to which the study objectives are addressed. The questionnaire in this study was used for individual interviews with TWWUA members. The questionnaire had both open ended and closed questions.

This research designed and administered a semi-structured questionnaire format to

TWWUA members in Tharaka and Kanthungu divisions. As the objectives of this study are specific, questions were developed and written before hand and asked in the same order. However, inquiries were asked outside the realm of the written questions but within the general field under investigation. One major reason for using a semi-structured interview was that the objectives of the study were fulfilled while other information pertinent to the study were gleaned.

The interview format were pre-tested and improvements were made before proceeding with the actual data collection. Research assistants from the Tharaka speaking community were recruited to assist with the interviewing because of the time consuming nature of this method. Ability to speak Kitharaka was an advantage because the beneficiaries were more eloquent and felt less inhibited to speak in their local language. The criteria used in recruiting the research assistants included their communication skills, maturity, approach and physical presentation. The research assistants will be trained and be involved in the pre-testing of the interview format.

3.4. 2 Group level interviews

For the purpose of this study, the researcher conducted a group level interview. The interview was conducted with TWWUA officials. This was done by the researcher by the use of a checklist. This was a group discussion with the TWUUA officials so as to get information on the organisation of TWWUA as a group.

3.4.3 Key Informant Interviews

Interviews with at least 6 key informants in the division were carried out. Key informants included the local authorities by a chief and an Assistant Chief, an official from a donor agency, religious leaders and Community Based Organizations leaders. These individuals were people with good knowledge of the history of water resources management and its impact on livelihoods in the location. The individuals assisted in verifying the information given by the group members.

3.4.4 Desk Study

A desk study was undertaken on community resource management and its impact on poverty alleviation, specifically looking at water resource management in Tharaka location. The researcher studied the group reports, accounts, minutes and records for deeper understanding of the group. There was also detailed information on community resource management available in the local libraries such as the Jomo Kenyatta Memorial Library, Departmental libraries at the University of Nairobi, the British Council Library in Nairobi and on the internet. The study reviewed this literature, which gave secondary information to build on the study.

3.4.5 Observation

The researcher used observation method to verify some of the data collected from the group members. This included the water collection points for the community members, did they collect their water at their door steps or did they have to walk some distances. This also included checking out the water infrastructure, pipes, tanks and general set up.

3.4 Analysis of Data

Qualitative data analysis is a process whereby general statements on the nature of data collected are made. Once data is collected from the semi-structured interviews, an initial preview was done followed by a process whereby data on the variables from each observation was categorized. These categories were as exhaustive and as mutually exclusive as possible. Data was then coded and entered into a management information system using the Statistical Package for Social Sciences (SPSS) computer application. Subsequently, descriptive statistical tools were utilized to obtain logical answers to the queries raised in this study.

In the analysis of data collected in this study, the first step was summarization, which included calculating proportions, measures of central tendency, standard deviations and looking for patterns of distribution in the information collected (Blalock 1979).

Information from key informants and secondary sources was reviewed and used to enrich the information collected from the sample under study. Based on the sample results, findings were interpreted using sociological theories highlighted in this study.

A final report was produced from the findings. However, was not conclusive and general for the entire population as this research utilized a non-probability sampling method in developing the sampling frames and therefore inferences made about the population may be not be scientifically accurate.

4.0 CHAPTER FOUR: STUDY FINDINGS AND ANALYSES

4.1 Introduction

This chapter presents the study findings and analyses. There is a detailed description and discussion of the socio-demographic characteristics of respondents of the study; the participation of the respondents in TWWUA and their understanding of the organizational ideals; the nature of TWWUA with a reflection formation, management and membership, effectiveness and sustainability of managing water resources in Tharaka, the importance of TWWUA to the local community; and a summary of the major findings. For the purpose of this study, we administered 50 questionnaires and received 100% back.

4.2.0 Characteristics of TWWUA

Our first objective was: To identify and establish the characteristics of TWUUA and its members in water management in Tharaka and Kathungu locations

4.3.0 Characteristics of the members

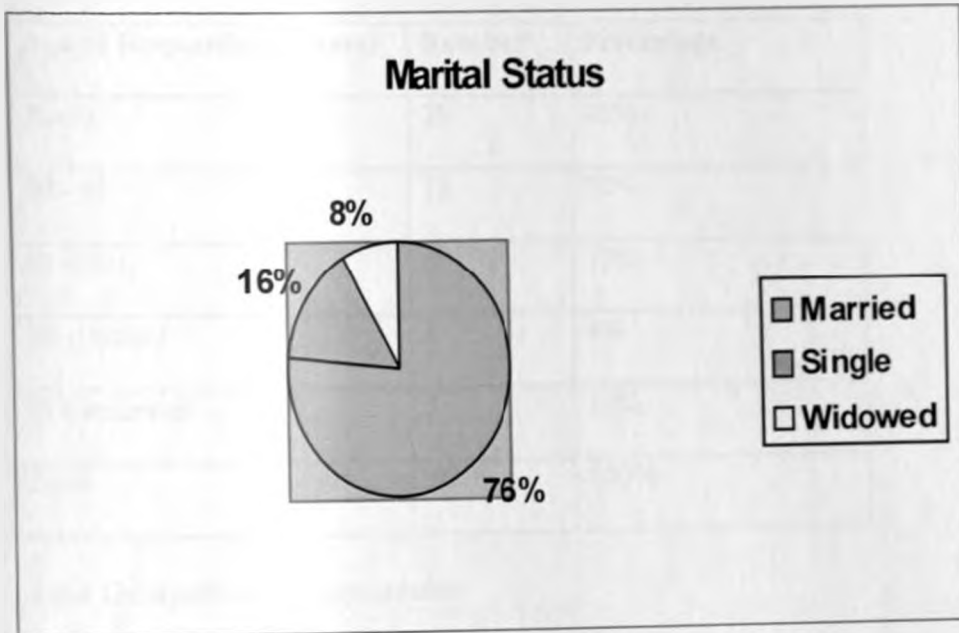
4.3.1 Sex of the Respondents

About 99% of the general respondents were female except one whose role is to patrol the water source and piping system.

4.3.2 Marital Status of Respondents

Majority of the members of TWWUA were married. They made 91.2% of the respondents.

Chart 1: Marital Status of the Respondents



4.3.3 Age of the Respondents

The members of TWWUA had an average age of between 20 and 40 years. This represented 70% of the respondents. It can be deduced that the organization gives some leadership opportunity to young people as exemplified by the large percentage participation of ages 20-40 years.

Table 2: Age of Respondents

Age of Respondent (Years)	Number	Percentage
20-30	20	40%
30 - 40	15	30%
40 - 50	6	12%
50 - Above	4	8%
Not indicated	5	10%
Total	50	100%

4.3.4 Occupation of Respondents

A greater percentage (86%) of the members of TWWUA engaged in farming and commercial activities. This means it's the water management that has brought these members together since they are engaged in other productive activities. They all agreed that the short distances to water points has seen improvement to their various economic engagements.

Table 3: Occupation of Respondents

Occupation	Number	Percentage
Farmer	29	58%
Business People	14	28%
House Wife	5	10%
Teacher	2	4%
Total	50	100

Conclusion

The organization keeps records of minutes, accounts, membership registers and inventory of assets. This helped in proper day to day running of the organization. In addition, the organization ensured that the secretary and treasurer were literate.

Meetings were held regularly. The management meetings were held every month or in not more than three months. The annual general meeting was held every year. Members who missed more than three meetings without sufficient reasons were removed from the organization.

The group is well organised and has systems in place. The group has a constitution and a strategy in place. Meetings are held accord to the constitution and minutes are taken, circulated and well organised in a file found in the group,s office.

4.4.0 Effectiveness and Sustainability of TWWUA

Our second objective was: to assess the effectiveness of the institution in managing water resources in Tharaka and Kathungu locations

4.4.1 Reasons and Expectations for Joining TWWUA

TWWUA was formed in 1999 and 60% of the respondents are founder members and 40% have joined subsequently. Contrary to the respondents saying that there are many members increasing, the trend presented here indicated a decrease in membership enrollment. Most of TWUUA members are married ladies from data above. The decrease in the number of membership can be explained by the fact that during inception, there were already many married women in the area and the number of women getting

married each year is not as high.

Table 4: Respondents' Year of Joining TWWUA

Year	Number joining	Percentage
1999	30	60%
2000	12	24%
2002	5	10%
2003	3	6%
Total	50	100%

The respondents gave a number of reasons that prompted their enrollment into TWWUA.

They include the following:

- Solidarity with other women for community development
- To benefit monetarily from water sales and workshop handouts
- To get nearer clean drinking water
- For adult education classes
- To gain management and other development skills.

4.4.2 Reasons that prompted Members enrolment

These reasons presented the enrollees mixed understanding of the vision and mission of the organization, but looked at deeply, what comes out clearly is the vision towards

development of the area. The idea of women involvement in development can be seen as a drive from the very inception of the group. The organization stands primarily for provision of water and secondarily for women empowerment, according to the respondents.

Table 5: Reasons for joining the organization

Reason	Number	Percentage
Reduced Distance /Clean Drinking Water	22	44%
Monetary	12	24%
Solidarity	8	16%
Gain Development Skills	6	12%
Adult Education	2	4%
Total	50	100%

4.4.3 Respondents' Expectations Met by TWWUA

Most of the members (50%) who have indicated that their expectations were met benefited from reduced distance to water points and accessibility to clean and safe drinking water. Whereas the rest of the members had doubts on whether their expectations were made, this still depended on the initial expectation of each the members. Those who wanted water believe that their expectations were met while those

who expected money still harbored doubts on the organization. Others have shown that some of their expectations were met but they were yet to receive any cash benefits. But there were some social benefits that included having the first woman assistant chief in the area and an aspiring woman councilor.

The table below indicates whether the members' expectations for joining the group were met within the duration they were members. Access to clean water and women empowerment were clear to most of the members.

Table 6: Respondents' Expectations Met

Expectations Met	Number	Percentage
Yes	25	50%
No	16	32%
Partly	7	14%
No Answer	2	4%
Total	50	100%

4.4.4 Activities Run by TWWUA

All members interviewed were clear that management of the water project was the main activity of the organization and it has been the major project for the organization so far. Alongside water management, the organization runs other activities. However, these activities are run along smaller groups that form the main TWWUA as an organization. The members have subdivided themselves into groups that meet at the kiosks level. It is

at this point that various activities that are not water management are run. The members gave the following as the activities that they run in their smaller groups:

Table 7: TWWUA Activities

Activity	Number	Percentage
Farming (Communal)	18	36%
Basket and Mat Weaving	14	28%
Poultry and goat rearing	10	20%
Attending Reflect Cycles (Adult Learning)	8	16%
Total		100%

The committee and manager responded that the organization is guided by a constitution and clear-cut by-laws that delineate the vision of the organization as the provision of water and women empowerment. The members agree and they stated that all these smaller activities were clearly directed towards women empowerment.

4.4.5 Challenges Facing TWWUA

On the challenges facing the organization, the respondents gave the following:

1. Mismanagement of funds and opportunities for the growth of the organization
2. Inadequate financial resources for the extension of the project
3. Vandalism of water pipes probably for local brewing
4. Inadequate water supply at times to some kiosk due to fuel shortage

5. Too much expectation of the committee members by the community
6. High rate of illiteracy among the members and general lack of skills
7. Disturbances from men and no cooperation at times; cultural barriers; these can also be as a result of having women alone in the management making the men develop negative attitude towards the project.
8. Mistrust between the members and the management committee.

The group may be faced with a number of challenges but this does not stop one from seeing the power of an organization.

Conclusion

The groups' membership was not well trained according to the members of the Focus Group Discussion. Some were trained but not in detail. The group therefore did not have enough skilled manpower to repair pipes or other water extension related services and relied on specialized personnel on hire which were very expensive for the group. There were also inadequate financial resources available to the organization. The organization relied on CDF, Action Aid Kenya and members' contributions that were meager. The returns from the sale of water is also too little. Water was sold at Ksh 1 for 20 liters. Sale of water is the only major income generating activity undertaken by the organization but the members and the committee have a very strong feeling that they can do more. The group is already exploring increase in water charges from Kshs 2 to Kshs 4 per 20 Litre.

The organization on the other hand has some assets that included premises, computers,

guest house that was foreseeable, tables, chairs. The guest house is a great asset to the organization for its an income generating activity which they are considering scaling up.

From the above, considering that most members expectations for joining the group have been met and the group objectives are also being met, TWWUA stands out as an effective organization.

4.5.0 Participation of Respondents in TWWUA

Our third Objective was: to assess participation of TWWUA members in water management

4.5.1 Members' Contribution to TWWUA

Members are willing to contribute towards the course of the organization. Members say that they make cash and labor contributions to the organization. Members make a registration fee of Ksh 20 which has since been increased to Ksh 30. Some members have also from time to time donated up to Ksh 500 of their own accord, this confirms that the membership socio-economic situation. Members are contributing towards the well being of the group which builds on the organization and spirit of the group.

Table 8: Members' Contribution to TWWUA

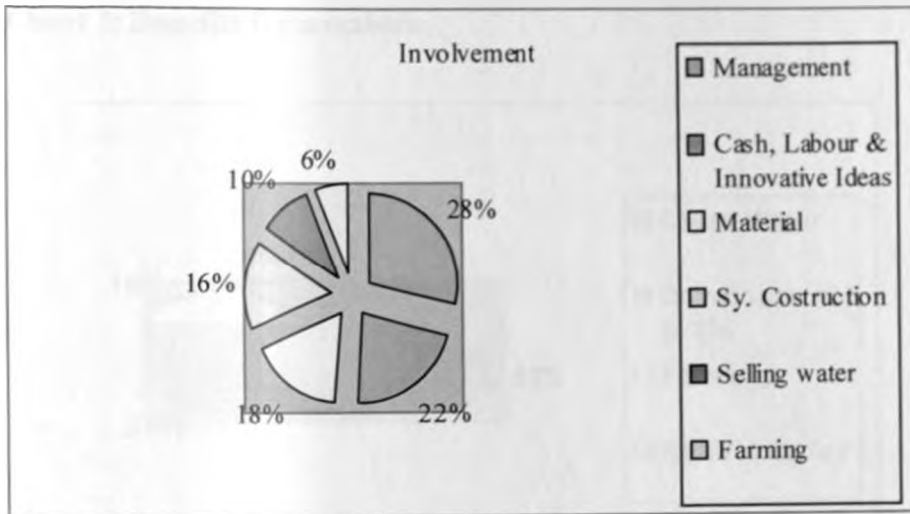
Contribution	Number	Percentage
Cash	24	48%
Cash & Labour	12	24%
Labour	7	14%
Material	5	10%
None	2	4%
Total	50	100%

4.5.2 Nature of Members' Involvement in TWWUA

The respondents indicated that they get involved in the management and activities of TWWUA by doing the following:

1. Helping in the management water project
2. Buying their own water pipes and water meters
3. Helping in kiosk and water tank construction
4. Selling of water in the kiosk
5. Farming
6. Contributing cash, labour and innovative ideas.

Chart 2: Nature of Members' Involvement in TWWUA



There is clear division of labour among the members of the group and this involvement greatly displays some element of ownership of the organization.

4.5.3 Actual Benefits to Members

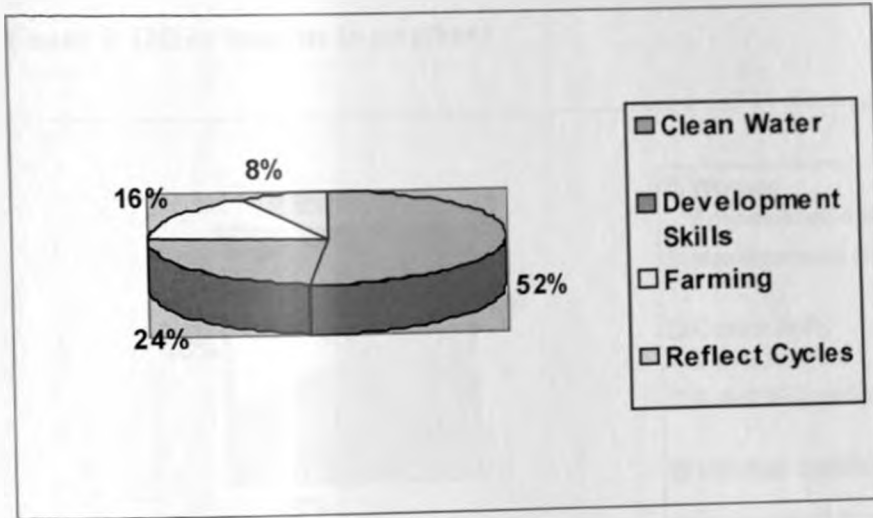
Our fourth objective was: to examine the benefits of the community from the water project management by TWWUA

The respondents listed the following benefits as accruing from being a member of TWWUA:

1. Acquiring socio-development skills
2. Getting an opportunity to engage in quality farming
3. Learning through the reflect circles i.e. adult education

4. Accessing clean drinking water

Chart 3: Benefits for members



From the above responses one can tell clearly that members appreciate and benefit from the group beyond its mission and objectives. Members are able to appreciate the organization and effectiveness of the group especially towards member's empowerment. Therefore, there is reason to believe that the members have owned the vision and mission of the organization.

4.5.4 Perceived benefits by members

The members were also asked to list other benefits they accumulate by being members.

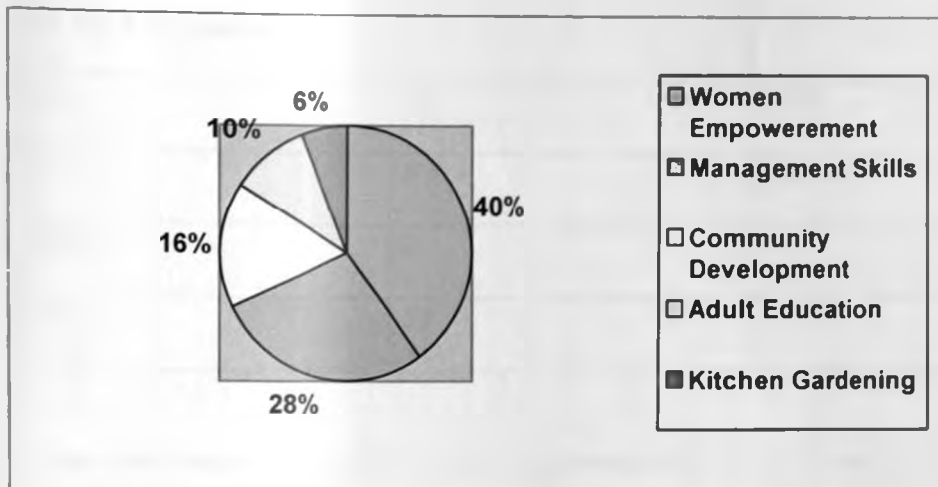
They responded as follows:

1. Access to water and management skills, and employment opportunities
2. Participation in reflect circles i.e. adult education
3. Engaging in kitchen gardening

4. Women empowerment

5. Community development

Chart 4: Other benefits to members



Members are able to see benefits beyond the women empowerment and access to water.

4.5.5 Beneficiaries outside TWWUA

There was acknowledgement from the responses of the strategic importance of TWWUA projects to other people outside TWWUA. However, the respondents gave mixed reactions as shown on the table below.

Table 9: Benefits to Members of the Community outside TWWUA

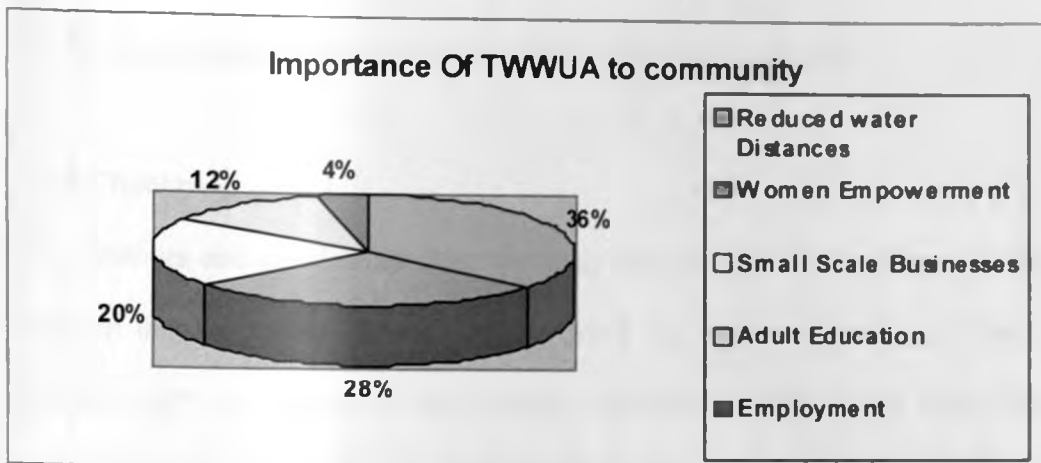
Benefits to community outside TWWUA Membership	Number	Percentage
Yes	40	80%
No	8	16%
Partly	2	4%
Total	50	100%

Those who responded *yes* (80%) cited empowerment of other women, reduced distances to water, access to farm produce like cabbages at affordable prices, and participation in reflect circles. This means the group has met its target and should be encouraged as a development and empowerment tool.

4.5.6 Importance of TWWUA to the Community

The following were the major advantages of TWWUA to the Tharaka community according to the respondents:

Chart 5: Importance of TWWUA to the community



1. Empowerment of women—women have known their rights like reporting domestic violence at the chief's office, owning a project, having aspirant women councilors i.e. women in leadership, having women in school management committees, girl child education.
2. Reduction in water collection distances and availability of water for drinking, access to water by public utilities like polytechnic, dispensaries, schools, improving agricultural activities.
3. The initiation of small scale businesses like basket weaving has helped other members of the community to generate income for their families.
4. Reflect classes/ circles have improved the rate of literacy in the community because the classes do not benefit members of TWWUA alone but also a cross-section of the community incorporating both male and female nonmembers of TWWUA.

5. Employment opportunities in TWWUA construction projects.

4.6.0 Conclusion

Key findings and conclusions from the study were that, there was strong connection between the management of the self-help group and its water related activities to the empowerment of women in the Tharaka community. One of the major benefits highlighted by both members and nonmembers as accruing from the project was the empowerment of women in project management and general leadership with a woman aspiring for council for the first time in the aftermath of the formation of the organization.

5.0 CHAPTER FIVE - SUMMARY CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

These chapters will summaries findings of this study and provide conclusions from the study and give recommendations for further study.

5.2 Summary of Major Findings

The main objective of this study was to investigate the local water management institutions (TWWUA), it characteristics and its impacts on collectively owned water resource management in Tharaka and Kanthungu location of Mwingi district.

The literature review was done by review of secondary data generally on local organized institutions and on TWWUA. This information was found in different books and journals in various libraries and at the TWWUA offices. The literature review gives understanding on natural resources management by local institutions, collective action by members on the management and constrains that face these institutions and the members in the management of natural resources.

Data for the study was collected from TWWUA officials, members and a few key informants in the community. The information from TWWUA officials and members formed the basis on the characteristics, organisation and effectiveness of the group. More

data was collected from key informants for control of the study. This data was collected by use of questionnaires. The data which was both qualitative and quantitative was analysed using SPSS.

The study found out that there were both weaknesses and opportunities in the management of water resources by TWWUA. There was strong connection between the management of the self-help group and its water related activities to the empowerment of women in the Tharaka community. One of the major benefits highlighted by both members and nonmembers as accruing from the project was the empowerment of women in project management and general leadership with a woman aspiring for council for the first time in the aftermath of the formation of the organization. There is also the first female assistant chief who was the first chairlady and thereafter manager of TWWUA before becoming an assistant chief. The women membership, on the other hand, was conversant with the vision, mission and objectives of the organization.

The organization still relied heavily on external support, lacked skilled manpower as most of its members were illiterate. In addition, there was also misconception from male members of community of their noninvolvement in the management of TWWUA

5.3 Conclusions

In conclusion, the women-initiated project (TWWUA) is faring well with the resultant impact being the empowerment of women and equality with the men in leadership and other decision making spheres. TWWUA has managed to reduce water collection

distances in the community, supply water to most of its members. conduct reflect classes for adult learners, and also start small scale income generating activities for its members; however, it has faced many challenges that include inadequate skilled personnel, cultural barriers, lack of financial resources and over reliance on donor support.

Local groups like TWWUA are well placed in managing local natural resources because they are in the best know how and undestand the problems facing them best.

5.4 Recommendations from the Study

The study recommends the following for future management of women projects like TWWUA at the grassroots level:

1. A policy framework should be developed by the government in recognition of the role played and challenges faced by grassroots women projects.
2. Financial assistance should be offered to the women projects at the local level.
3. Illiteracy and ignorance among women should be eradicated as a priority towards empowering women.
4. Training opportunities on management should be extended to women projects at the local level.
5. Legislation should be enacted to promote the participation of women in key leadership positions and curb against inhibitive cultural barriers towards enjoyment by women of their rights.

5.5 Recommendations for Further Study

There is need to carry out a comprehensive future study on the following:

1. The management challenges facing women grassroots development organizations/ projects.
2. The influence of culture on the state of illiteracy of the women of Tharaka.
3. The community perception of women-run projects among the local communities.

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Appendix 1: Information about TWWUA group

This interview guide will be used to collect information from the TWUUA group officials. The interview guide will assist the researcher to get information on the characteristics, effectiveness and organisation of TWWUA as a group.

A. Characteristics

1. When was TWWUA formed?
2. Does it have a constitution and by-laws?
3. Is the group registered?
4. Why was the group formed?
5. Is there a constitution
6. Has the group prepared its strategy? When was the strategy prepared? Who helped the group in its preparation?
7. What is the vision of the group?
8. What are the group objectives?
9. Number of group members over time. Has the number been increasing or decreasing?
10. What is the composition of TWWUA membership?
11. Who are the officials and how were they chosen?

B. Effectiveness and Organisation

1. Do you keep any group records?
 - Minutes
 - Accounts
 - Membership register
 - Assets

2. Leadership

- Does the group have a committee?
- How many officials does the group have?
- How are these leaders chosen?
- Has the group ever experienced any problems and how were they resolved?
- What is the composition of the leadership?
- Check the qualifications of the chairperson, secretary and treasurer; their education, experience and training.

3. Meetings

- Committee meetings
- General meeting
- Level of attendance of both meetings

4. Do members make any contributions to the group?

- In cash, materials or labour

5. Are members benefiting from the water project? How?

6. Are other community members who are not members of TWWUA involved in the water project? How?

7. What are the challenges facing the group in managing the water project?

8. What are the benefits of being in the group?

C. Sustainability

1. How is the structure of the group and what are the responsibilities at each level?

- Main committee
- Sub-committee

2. What resources does the group have?

3. Does the group have any education/capacity building activities?
4. Do members have skills to repair pipes, pump or other resources?
5. Does the group have support from the outside? What type of support?
6. Does the group have any income generating activities? Which are these activities?
7. Does the group have any assets? Which are these assets?
8. Is the group running its activities without outside support? If no, will it be able to do so in future?

Appendix 2: Individual TWWUA members' interviews

This interview guide will be used to collect information from the TWWUA group.

Discussions will be held with individual members. This will give information on members' involvement, benefits to members, their participation and their reasons for joining the group.

Name;-----

Age; -----

Sex; -----

Occupation; -----

Marital Status; -----

Participation; TWWUA members

1. When did you join TWWUA?
2. What were your reasons for joining the group?
3. What were your expectations as you joined the group?
4. Have your expectations been met? If yes, in which way? If no, why?
5. What are the activities of the group?
6. Do you make any contributions to the group? In what way, in cash, materials, or labour?
7. How are you as a member involved in the group activities?
8. Do you benefit from these activities? How?
9. Are there any other benefits apart from getting water?
10. Are other community members who are not members of TWWUA involved in the water project? How?
11. According to you, what are the challenges facing the group in managing the water project?

Appendix 3: Key informants interview guide

This guide will be used by the researcher to verify the information given by the group members. Some informed members of the community like the area chief, any donors of the group, and some religious leaders in the area will be interviewed.

Name;-----

Age; -----

Sex; -----

Occupation; -----

Marital Status; -----

Participation; Non TWWUA members

1. What do you know about TWWUA?
2. What could you say about TWWUA and water management in this area?
3. Does TWWUA involve other community members rather than the CBO members in the project?
4. What could you say are the advantages of TWWUA managing the water project?
5. What challenges face the CBO in the water management?
6. Do other community members benefit from the project? How?
7. What could you say TWWUA is doing to sustain the project?
8. Are there any other benefits to the community rather than the water?

Appendix 4: Observation Check List

1. Points at which the community members collect their water
2. Organisation of the water system: source, piping, distribution
3. The water source
4. Other group activities