

C. 1

THE ROLE OF COMMUNITY PARTICIPATION AND PARTNERSHIPS IN
RURAL DEVELOPMENT: A CASE OF RURAL WATER SUPPLY PROJECTS IN
MATILIKU DIVISION - MAKUENI DISTRICT. //

BY

Josephat Muendo Wasua, B.A (Hons) Sociology, 1995, Egerton University.

A Thesis submitted in partial fulfillment for the degree of Master of Arts (Planning)
in the Department of Urban and Regional Planning, Faculty of Architecture, Design
and Development, University of Nairobi.

August 2001
Nairobi
Kenya

FOR USE IN THE
LIBRARY ONLY

University of NAIROBI Library



0444097 0

DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

Signed  Date 8/15/2001

Josephat Muendo Wasua

(Candidate)

This Thesis has been submitted for examination with my approval as university supervisor.


Signed _____ Date 9/10/2001

Professor Samuel Akatch

(Supervisor)

This Thesis has been submitted for examination with my approval as university supervisor.

Signed _____ Date _____

Mrs. Heilen Nzainga

(Supervisor)

DEDICATION

This work is dedicated to my mother Joyce Mwikali Wasua who toiled tirelessly over the years of my schooling and my daughter Lillian Kalekye.

ACKNOWLEDGEMENTS

This research would not have been successfully completed without assistance and contribution of many individuals and institutions. It is not possible to give a list of them all. I am indebted to the Government of Kenya through the Ministry of Lands and Settlement, which funded this research and my full course study in the postgraduate programme.

I pay special gratitude to Mr. Mutuva, the Makueni District Water Engineer and the Matiliku Divisional Water Engineer for valuable information, which shaped the study. I sincerely wish to thank my supervisors' professor Samuel Akatch and Mrs. Hellen Nzainga for the great guidance, valuable criticisms and constructive comments, which helped to develop the study. I cannot forget to thank Dr Mochache, professor Ngau and Mr. Maleche for their guidance in the preliminary stages of the study.

Finally I am indebted to my colleagues at the university and to Lenny Wachira and Mbugua who spared time to type the whole work and Domitillah Ndinda for her moral support. And many more thank you so much!

LIST OF ABBREVIATIONS

ACP-EU	Africa- Caribbean- Pacific- European Union
ASALs	Arid and Semi Arid Lands
CBS	Central Bureau of Statistics
CDSS	Chobe District Settlement Strategy
CWPs	Communal Water Points
DDC	District Development Committee
DFRD	District Focus for Rural Development
DRA	Demand Responsive Approach
GOK	Government of Kenya
ICs	Individual Connections
IDRC	International Development Research Centre
IDWSSD	International Drinking Water Supply and Sanitation Decade
IIRR	International Institute of Rural Reconstruction
MIDP	Machakos Integrated Development Project
MOCSS	Ministry of Culture and Social Sciences
MOWD	Ministry of Water Development
NGOs	Non Governmental Organization
NWMP	National Water Master Plan

PPA	Participatory Poverty Assessment
PVOs	Private Volunteer Organizations
RWS	Rural Water Supply
SIDA	Swedish International Development Agency
UN	United Nations
UNCHS	United Nations Centre for Human Settlement (Habitat)
UNDP	United Nations Development Project
UNESCO	United Nations Education Scientific Cultural Organization
UNICEF	United Nations Children Education Fund
WCED	World Commission of Environment and Development
WEDC	Water, Engineering and Development Centre
WHO	World Health Organization
WVI	World Vision International

ABSTRACT

Matiliku Division is one of the 16 divisions in Makueni District, which is an Arid and Semi Arid Land (ASAL). The region suffers from water scarcity. Rainfall is low and unreliable. The region has experienced the presence of many Non Governmental Organizations (NGOs) and other External Support Agencies (ESAs) that have engaged in funding of rural water supply projects. The planning process leading to the implementation of the water projects in Matiliku Division involved several actors each with its own role as indicated in the study. The actors included the local community, the ESAs and/or NGOs and the Government.

Even though each actor (partner) played specific role, there was lack of coordination. Water being a basic necessity for any community, the local community had to be coerced to provide labour during the implementation of the projects. The local administrators were instrumental during the coercion process.

The study entailed the collection of two types of data namely, primary and secondary data. It made use of descriptive survey method and blended it with focused synthesis based upon available literature. Data collected from the field was analyzed using the Statistical Package of Social Sciences (SPSS). The methods of analysis involved both descriptive and inferential techniques as well as measures of association (correlation - regression analysis).

The study found out that the collaboration of the ESAs with the Government was not obvious unless where it was absolutely necessary. Such collaboration was evident in cases of technical expertise where one party had knowledge at its disposal while the other lacked it. Issues of finances were major causes of conflicts between them especially in

procurement of materials. There was no level playing ground for the various actors hence conflicts always arose between them.

The study found out that the water supplies had adequate yields that could meet the present, future and the ultimate water demands up to the years 2009 and 2019. However water was usually not available. Unreliability of the water supplies was the critical problem facing the population in the supply area. This had led to the populations in the projects' catchment area to depend on water from other sources that were at far distances beyond the stated Government limit. Operation and maintenance problems were major problems leading to water wastage hence unreliability of the water supplies.

Another revelation from the study is that the future sustainability of the water projects implemented through the combined efforts of various actors was at stake. The water projects were not functioning to their capacity, vandalism and wastage were a common phenomenon. The benefits accrued from the projects were minimum. The projects had not been extended beyond their first phases. All the above problems are related to the way the water projects were planned and implemented.

The study recommends that the role of the Government and ESAs should no longer be that of providing but enablers of other actors to succeed. This calls for collaborative efforts, initiatives and participation of all stakeholders at all the levels in the planning and implementation process. But of importance is the aspect of having a (common) shared vision, which should be guided by the legal and policy framework.

The study unveils that the planning process should be continuous and interactive, each step informing and reinforcing the other and *vice versa*. For instance though the plan

implementation comes at the end it should be thought of at initial stage and move along the design stage. Also of importance is that institutional arrangements and procedures among the all actors involved in the planning and implementation process of rural water projects must be well understood and appreciated by all if it is to lead to sustainable projects.

TABLE OF CONTENTS

Declaration	i
Dedication	ii
Acknowledgements	iii
List of Abbreviations	iv
Abstract	v

CHAPTER ONE: INTRODUCTION

1.0 General Overview	1
1.1 Statement of the Research Problem	5
1.2 Research Questions	10
1.3 Objectives of the Study	10
1.3.1 General Objective	10
1.3.2 Specific Objectives	10
1.4 Study Assumptions	11
1.5 Justification of the Study	11
1.6 Definition of Terms	13
1.7 Research Methodology	15
1.7.1 Target Population	15
1.7.2 Sample size and sampling procedure	15
1.7.3 Methods and Tools of Data Analysis	17
1.7.3.1 Primary Data Sources and Methods	17
1.7.3.2 Secondary Data Sources and Methods	19
1.7.4 Methods of Data Analysis	20
1.7.5 Scope of the Study	20
1.7.6 Study Limitations	21
1.8 Organization of the Study	22

CHAPTER TWO: LITERATURE REVIEW AND CONCEPTUALIZATION OF THE STUDY

2.0 Introduction	24
2.1 Partnership as a Development Approach	25
2.1.1 Levels of Partnerships	28

2.1.2	Community Partnership.....	28
2.1.3	Partnerships among Governmental and Non-Governmental Agencies/ESAs.....	30
2.2	An Overview of Government Policy on Rural Development and Water Supply	36
2.3	Role of ESAs and NGOs in Rural Development.....	45
2.4	Community Participation and its Role in Rural Development	50
2.5	Other Issues to Consider When Planning for Water Supply Projects	60
2.6	Summary of Literature Review.....	61
2.7	Conceptual Framework	63
 CHAPTER THREE: BACKGROUND INFORMATION OF THE STUDY AREA		
3.0	Introduction	66
3.1	Location and Size.....	66
3.2	Water Resources and Surface Water Potential.....	66
3.3	Relief and Drainage.....	71
3.3.1	Hydrogeology and Geology	71
3.3.2	Soil and Vegetation.....	72
3.3.3	Hydrological Potential	73
3.4	Climate	73
3.5	Land use pattern	75
3.6	History of Water Projects in Matiliku.....	76
3.7	Socio- Economic Profile.....	80
3.7.1	Population: Density and Distribution.....	80
3.7.2	Incomes and Income Generating Activities.....	81
 CHAPTER FOUR: THE EXTENT OF WATER SUPPLY IN MATILIKU DIVISION		
4.0	Introduction	83
4.1	Sources of Water	83
4.2	Collectors of Water and Mode of Water Transport.....	88
4.3	Distances to Improved Water Outlets.....	90
4.4	Water Supply and Demand	95

4.5 The Future and Ultimate Water Demand	100
4.6 Per Capita Water Consumption.....	101
4.7 Determinants of Per Capita Water Consumption	102
CHAPTER FIVE: POLICY IMPLICATIONS ON COMMUNITY PARTICIPATION AND PARTNERSHIPS IN WATER SUPPLY	
5.0 Introduction	109
5.1 Community Participation in Matiliku Water Supply Projects.....	109
5.2 The Role of Local Administration in Implementation of Matiliku Water Projects	116
5.3 The Role of External Support Agencies and the Government in the Planning of Water Projects	118
5.3.1 The Water Act Cap 372.....	118
5.4 The Sustainability of the Water Projects.....	123
5.5 Summary of Research Findings	130
5.6 Policy Implications.....	138
5.7 Institutional Challenges.....	140
5.8 Enabling Policies for Local Action.....	141
5.9 Conditions for Community participation and Partnerships	142
CHAPTER SIX: RECOMMENDATIONS AND CONCLUSION	
6.0 Introduction	143
6.1 Recommendations.....	143
6.1.1 Localized Solutions to Water Shortage	143
6.1.2 Change in Planning Approach.....	145
6.1.3 The Way Forward for Sustainable Water Supply in Matiliku Division ..	151
6.2 Conclusion.....	156
6.3 Areas of Further Research	157
Bibliography	158
Appendices.....	164

LIST OF MAPS

3.1 Geographical location of Makueni District.....	68
3.2 Location of Matiliku Division in the District context.....	69
3.3 Drainage system of Matiliku Division.....	70
3.4 The water supply system.....	79
6.1 The Water Supply Proposals and conservation.....	155

LIST OF TABLES

1.1 Distance traveled to the nearest.....	7
1.2 Sampling table.....	17
2.1 Chobe District Settlement Strategy.....	34
2.3 A typology of participation.....	58
3.2 Population projections by location.....	80
3.3 Population Densities by sub-location.....	81
4.1 Sources of water.....	84
4.2 Reasons for using water from more than one source.....	85
4.3 Reasons for not getting water from the improved water outlets.....	68
4.4 Distances to improved water supply outlets.....	90
4.5 Distances to other alternative water sources.....	91
4.6 Problems of sources of water.....	92
4.7 Activities to be performed if respondents spend less time.....	94
4.8 Water supply yields and mode of distribution.....	96
4.9 Domestic water demand.....	96
4.10 Water demand for education institutions.....	98
4.11 Number of communal water points.....	100
4.12 Future and ultimate water demand.....	101
4.13 Distances versus water consumption.....	104

LIST OF FIGURES

2.1 Various actors and likanges in water supply.....	64
--	----

3.1 Monthly rainfall during the 1998-2000 period.....	74
4.1 Collectors of water.....	88
4.2 Modes of water transport.....	88
4.3 Other activities performed by water collectors.....	89
5.1 Reasons for the initiation of water projects.....	110
5.2 Stages of participation.....	111
5.3 Ways of participation.....	112
5.4 Reasons for participation.....	113
5.5 Role of local administrators.....	117
6.1 Collaboration and shared vision model for actors.....	149

LIST OF PLATES

Plate 1 A communal water point (kiosk) closed and vandalized for Ikomba Water project.....	87
Plate 2 The water intake for ikomba Water project completely covered with undergrowth.....	93
Plate 3 The water intake for Kisinzi Water project covered with a wire mesh and stone debris.....	93
Plate 4 A "rotten" water tank for Kilinga Water project.....	94
Plate 5 School children going for an errand to the river for water.....	95
Plate 6 A pierced PVC pipe for Ikomba water project.....	124
Plate 7 A vandalized water kiosk for Ikomba Water project.....	125
Plate 8 A worn out G.I pipe at a river crossing oozing water for Ikomba Water project.....	126
Plate 9 Unrepaired PVC pipe for Kilinga Water project.....	126
Plate 10 A pool of water formed from a burst pipe for Kilinga water project.....	127
Plate 11 "Illegal" irrigation practice at Ikomba water project.....	128
Plate 12 A water pipe left running at Ikomba Water project.....	129
Plate 13 Unrepaired pipe leading to an IC for Kisinzi Water project.....	128
Plate 14 Rainfall harvesting through roof catchment.....	144
Plate 15 Scooping water from the dry riverbed.....	144

CHAPTER ONE: INTRODUCTION

1.0 General Overview

Water is the basic supporter of man's activities and hence all living organisms depend on water, which must be in good state for survival, (UNESCO, 1998). The Greek philosopher Pinder, 5.B.C cited by Winstrand (1978:283) said, " water is the best of all things". This statement is true when viewed in the light of man's recorded history for it supports life and civilization. Therefore, the entire history of mankind could be written in terms of our need for water. From the ancient times, man realized that water was essential for survival and hence early civilizations flourished on lands made productive by great- rivers; such as the Tigris and Euphrates in Mesopotamia, Nile valley in Egypt, the Indus valley in India and the Huang- Ho in China.

Water is an eminently renewable resource. The water stocks are available for recharge either through hydrologic cycles or through man- directed means. Yet all too often it is used as a non- renewable resource World Bank (1987:11). Worse, it is rarely available in the right amount, at the right place at the right time largely because precipitation is either excessive or deficient. Moreover, demand for water in several parts of the world is increasing more rapidly due to rising standard of living. The world scenario has never been static; for instance, population has been increasing ever since man appeared on earth in contrast to the constant water resources. In any part of the world, true development means improvement of the quality of life of the people regardless of their source of

livelihood. This in effect means that the populations have to be supplied with the necessary services that sustain life.

In order to improve the welfare of the local people, many governments have attempted to provide water through the initiation of several water projects in rural and urban areas. Such projects have been implemented through partnerships between the governments and donors or External Support Agencies (ESAs). However, majority of the people have remained untouched by these changes. In Kenya especially in the Arid and Semi Arid Lands (ASALs) we have caricatures of stalled water projects dotting the republic. Though the Government has had a policy of supplying water for all by the year 2000, today being past the set period, minimum success has been achieved. This is well exemplified in the policy documents such as the Interim Poverty Reduction Strategy (2000), which indicates that 50 per cent of the households in the country do not have access to safe-drinking water.

Critics such as Lelo (1999) notes that the major cause for stalled projects lies in the way development process is conceived, designed, packaged and disseminated. The centralized 'Top-down' approach perpetuates a situation whereby decisions are made from the top and implemented from below. Local people have continued to be treated like empty vessels, which have no idea of what is good for them. The approach used by the government and donors to design rural development projects seems to have failed to meet the set targets such as water for all at reasonable distances by the year 2000. Such a challenge for water sector calls for effective planning and intervention methods from Governments and other international agencies on how to meet the demand for the same.

A different approach of initiating development is required in order to be able to meet the deficit that has not been met using previous approaches such as the "top-down approach" and also to counter the problems which emanate from the applied approaches.

Moreover, Samson and Dwight (1990) notes that the adequacy of water supplies to meet the varied demands placed upon the water depends on the quality as well as quantity of the resource. Water is rarely pure, all ground water and surface water naturally contain minerals dissolved from soil and rock and even precipitation usually contains impurities picked in the atmosphere. The Human Development Report (UNDP, 1998), reports that nearly 30 per cent of the population in Developing Countries, comprising of more than 1.3 billion people lack access to safe drinking water and nearly over 2.5 billion lack basic sanitation. The most affected people by this water shortage are found mainly in the rural areas, particularly in the Less Developed Countries. By 1970, only 14 per cent of the people in the rural areas in Developing Countries had access to safe supply of water that rose to 29 per cent by 1980 (Gueifer, 1981). In recognition of this deficit, the United Nations Organization (UNO) declared the 1980's to be the International Drinking Water Supply and Sanitation Decade (IDWSSD) with the aim of satisfying the world population with clean water and sanitary disposal of human wastes by the year 1990 (Holdgate, 1972). Through the initiatives and assistance of UNICEF, SIDA and other agencies, 2,269,5000 people were being served from improved outlets by 1972. This represented 14.3 per cent of the country's population. The progress in water supply has therefore been disappointingly slow. This was witnessed even soon after the initiation of the Rural Water Supply (RWS) program in Kenya. Carruthers (1972:3) for instance noted that only 9 per cent of the population had house connections and standpipes by then.

At the local level, and as if in response to the IDWSSD, the Kenya Government had set itself in the 1966-1970 Development plan a goal of providing water for all population by the year 2000 at a reasonable distance. However, several years down the road not much has been achieved. This is well evident as the National Development plan 1997-2001 states that 75 per cent of urban population has access to safe drinking water, while 50 per cent of the rural population has access to potable water from various schemes. The above percentages have been declining due to non-performance of existing schemes. In the ASALs only 16.9 per cent of the population have access to safe water.

The UNCHS (Habitat 1998), reports that the supply of clean water to all populations in the world can simply eradicate poverty and social stress. This can be attained through releasing time formerly used in fetching water for other economic activities and solution to the grueling work of carrying water for long distances. According to the Interim Poverty Reduction Strategy paper for the period 2000-2003, the poor in Kenya constitute more than half of the population of the country and that regardless of Poverty, over 50 per cent of Kenya's households do not have access to safe drinking water.

A poor person is sometimes defined as someone lacking access to water in the Participatory Poverty Assessment report (PPA, 1996). The provision of safe water supplies was regarded as part of rural development (GOK, 1970). The study is geared towards analyzing the Government efforts to achieve the above goal in Partnership with other support agencies in a localized area in Kenya namely, Matliiku Division in Makueni District.

1.1 Statement of the Research Problem

in order to carry out a detailed study, the main research question was "why projects implemented by NGOs and other External Support Agencies in partnership with Government have not been sustainable despite the heavy investments? This is studied on the basis that water is a basic need and an important catalyst for economic and social development in the country. The Government in recognition of this fact, immediately after independence realized that the provision of water was going to be a major factor in promoting development in all sectors of the economy and committed itself to the supply of water to all within reasonable distance (GOK, 1970). This was meant to ensure that water supply did not become a constraint to the country's development. Guided by this policy, the Water Department, which operated from various ministries before becoming a full-fledged Ministry in 1974 embarked on intensive water development program in both rural and urban areas. The people themselves also joined in the spirit of *Harambee* (pulling together) and initiated a large number of self-help water projects in various parts of the country.

The public sector hence began to play a major role in the provision of water supply services to the people to an extent that it later overshadowed the self-help initiative. This resulted in a systematic trend of taking over self-help water supplies. This trend however later proved to be a financial burden for the public sector to bear particularly in the operation and maintenance of huge network of water supplies all over the country. This saw the coming up of donor support that mainly provided the much-needed financial resources hence the coming up of many new schemes in the country. Matitiiku Division

in Makueni District, Eastern Province is one of the zones, which benefited from these efforts. Several water projects were initiated through the combined efforts of the Government and External Support Agencies (ESAs) especially in the 1980s and early 1990s.

in line with this support the National Water Master Plan (NWMP), adopted the development target for provision of safe and reliable water within a reasonable distance of 2 kms for all by the year 2010. However, a Survey by the Welfare Monitoring Survey II conducted by World Bank and UNICEF (1994) indicated that 10 per cent of the population in urban areas and 65 per cent in rural areas did not have access to safe drinking water. From the comparison of these targets and actual values, it can be said that majority of the population residing in rural areas still depend on contaminated water sources. With the just ended drought in the year 2000 in the country, the situation was even worse in both rural and urban areas.

In addition, as outlined in the National Poverty Eradication Plan (1999-2015), women who are the main collectors of water, in dry areas and dry seasons may have to spend half the day travelling and queuing for water due to scarcity. This places heavy cost in terms of the time of the already vulnerable and stressed families. Rural projects as noted by Chambers (1983), are often intended to benefit the rural poor and vulnerable groups. However, for projects to succeed they have to be sustainable that is serve the people both in the present and in the future. According to Tolba (1997), at least 80 per cent of rural water supply projects are likely to stop operating after their financiers leave or after

handing them over to the local communities due to poor management of the projects by the local communities.

Kenya's experience with the Rural Water Supply Programs shows disappointing results as most water projects have stalled or collapsed completely. The provision of water has not at any one time in the past kept up with the demand. The development initiatives and management systems have demonstrated poor performance. By the close of 1978, for instance out of about 800 completed schemes only 200 water schemes were fully operational while the remaining 600 water schemes were either under-utilized or non-functional (GOK, 1980). Poor maintenance and lack of initiative further heightened the distance problem to improved water sources in the country. The 1974/1975 integrated Rural Survey of 1,483,422 smallholdings showed the following results about the distance scenario. The analysis is presented in Table 1.1.

Table 1.1 Distance travelled to nearest water outlet.

Per cent of holdings at distance in miles							
Province	Season	0 to 1	1 to 2	2 to 4	4 to 8	Above 8	average
Central	Wet	88.5	11	0.6	0	0	20.02
	Dry	83.1	15	2	0	0	20.02
Coast	Wet	66.8	23.4	9.4	0.4	0	20
	Dry	43.3	22.4	19.1	10.9	4.4	20.02
Eastern	Wet	85.3	10.8	2.6	1.2	0.2	20.02
	Dry	60.8	18.8	9.3	9.4	1.7	20
Nyanza	Wet	83.5	14.9	1.6	0	0	20
	Dry	69.5	26	4.5	0	0	20
R/Valley	Wet	90	9.9	0.1	0	0	20
	Dry	69.9	25.4	4.3	0.4	0	20
Western	Wet	91.1	8.7	0	0.2	0	20
	Dry	86.5	13	0.2	0.2	0	19.98

Source: (Adapted from MoWD, 1980:16.)

AMREF (1998), notes that there have been cases where the projects implemented through the assistance of external finance in partnership with the Government stall or collapse, leaving the communities with the very problems they had or even worse situations. In other instances, some projects have ended up benefiting only a section of the people or decorating homes with taps that are often dry or whose water quality and quantity is unsatisfactory. In a partnership development approach different actors are supposed to work in collaboration for a common goal with each supplementing the efforts of the other. The partnership can either be between institutions or with the community and it is expected to yield better results due to the supplementing efforts from the different parties. The success of these partnerships requires coordination and commitment between the parties involved. Although Government policy documents hind on the general participation of the people in development planning, they do not address how the local communities can participate in projects involving partnerships between Government and ESAs. The Matiliku case is expected to reveal ways of strengthening effective community participation in partnership development efforts.

In Matiliku Division, the existing water schemes are not evenly distributed. Public drawing water points are further spaced and in some instances some of the utilities are not operational due to vandalization. The collectors of water, mostly women and children spend a large part of their time fetching water for domestic uses. A reconnaissance Survey of the study by the researcher revealed that they spent between 2 to 4 hours and sometimes up to 5 hours per day. They cover distances of up to 6 km to improved water points that is beyond the range in the Government policy on rural water supply of 2km to a water point. A high proportion of the regions populations have no

choice but to depend on traditional outlets for their domestic water needs. The above problems have been witnessed in the study area although several water projects were initiated during the 1980s and early 1990s funded by Donors and other ESAs in response to the IDWSSD of the same period. Some of the water projects in the region include the Kisimzi and Isololo water projects funded by the Catholic Church in partnership with the Kenyan Government; the Ikangavya, Manooni and Kilinga water projects funded by European Union through the Machakos Integrated Development Project (MIDP). Others are the Ikomba water project funded by the World Vision International in partnership with the Kenya Government. Each of the water projects was to serve the residents of the seven sub-locations in the division with water. In all the schemes, water flows by gravity. The general objective during the implementation of the water schemes was to provide water for domestic use at reasonable distances.

By the time of the study most of the individual connections and communal water points did not have constant water supply and others did not have water at all. The water kiosks, which serve as communal water points have their structures, vandalized. Water supplies whose water flows by gravity are expected to have minimum operational problems but this was not the case in the study area. Generally, the water projects are no longer functioning while others are on the verge of collapsing due to constant operation and management problems. This being the case, burst pipes are never repaired in time to avoid water wastage. In areas where water is available, taps are left running leading to mass water loss especially in the upper sections of the water distribution system. Others practice unplanned for irrigation. This has led to low water supply or complete lack of water in the lower sections of the water distribution system.

1.2 Research Questions

In the light of the foregoing scenario the research questions for the study are as follows:

1. How did the local communities, the donors or External Support Agencies and the Government participate during the planning of the water projects?
2. How are the local communities organized to manage the rural water projects?
3. What factors hinder the water projects sustainability?
4. How does distance to a water supply point determine the amount of water consumed?
5. What can be done in order to have sustainable water projects?

1.3 Objectives of the Study

1.3.1 General Objective

The goal of the study is to find out ways of strengthening the role of the local community in rural development in order to ensure sustainability of the water supply projects.

1.3.2 Specific Objectives

The specific objectives for the study are as follows:

1. To assess the extent to which the community was involved in the projects.
2. To assess the organizational capacity in partnership to handle rural water projects.
3. To determine the institutional roles of various actors in the water development process.
4. To assess factors that hinder the water projects sustainability.
5. To assess the effect of distance to water outlets on water consumption.
6. To recommend planning strategies which can be adopted to attain sustainable water projects.

1.4 Study Assumptions

Following the research problem and the objectives set, the following are the study assumptions:

- 1) That the level at which the local community is involved in the planning of a water project influences the projects' sustainability.
- 2) That Projects initiated through partnership fail because of lack of adequate organization for their sustenance.
- 3) That the distance to a water outlet determines the per capita water consumption.

1.5 Justification of the Study

The research study on Rural Water Supply Project is of great importance and worth in Kenyan context. First as stipulated in the National Development Plans (1966-1970, 1970-1974 and 1979/1983), the Kenyan Government set itself towards a National goal of providing potable water for all by the year 2000. Also in the National Poverty Eradication Plan 1999-2015), the Government has a goal of creating universal access to safe water by year 2010. A study on Matiliku rural water supplies is thus in line with Government policy on water.

The objective of the study is much more modest, namely to clarify some of the issues in development approaches. The development approach is partnership and community participation in rural development. The reasons for this selection are as follows:

- Rural water systems represent a good entry point into usual obstacles and problems faced in rural areas.

- Water has always been high on the list of community "felt needs" and is our acknowledged basic need.
- The partnership approach is a new phenomenon, so the experience is amenable to policy testing.

A study on "Partnership" as a development approach deviating from the traditional idea of aid in order to solve rural problems offers an opportunity whereby findings from the study can be used to derive recommendations that can be used by Government and other ESAs working in partnership to foster development.

In addition, the Government of Kenya has emphasized the importance of local communities' participation in development. It is the Government's idea that it is not enough for local communities to merely benefit from whatever program the Government or ESAs initiate without the involvement of the people (*Sessional Paper No. 1 of 1986; Development Plan 1979/1983; District Focus for Rural Development 1983*). The Matiliku case thus serves as a good example for analyzing the Government strategy in solving rural problems.

The study is also based in ASAL region that had witnessed the presence of many Donors/NGOs funding water projects. The study is expected to test the extent of viability of the projects funded by the ESAs in the rural areas. The water projects implemented through such efforts are characterized by frequent breakdowns, which are not attended to in time. It is necessary to learn from past mistakes and recognize the causes of the failures. From such findings, guidelines will be developed for the planning, construction, operation and maintenance of small water supply systems in the region and Kenya in general.

Finally, studies on partnerships by Mwangi, S.W (2000) in Nakuru Town, Roberts *et al* (1996) in Leicester Environment City and Darlow, A and Newby, L (1997) are all related to implementation of Local Agenda 21 (UNCHS, 1996). In Chapter 28 of the Agenda 21, Local Authorities in each country are called upon to undertake consultative processes with their populations in order to achieve consensus on a Local Agenda 21 for their community. The above studies have all been based on urban environments without reference on rural development. A study on partnerships in rural development in Matiliku Division is of significance, as it will unveil on whether the same principles can be applicable in rural set up.

1.6 Definition of terms

Community participation: -This is used to refer to the involvement of the rural or local people in the initiation, design, implementation and monitoring of rural water projects.

Sustainable water project: - This refers to the ability and the accessibility of all people supplied, and at all times, to enough safe drinking water at reasonable distances. The delivery in this case is via an appropriate technology, which the users can afford out of the prevailing situations.

Partnership: -This is collaborative working between the Government (for this case a department) and an external agency such as NGOs to promote development in the rural areas through the provision of social services.

Non-Governmental Organization (NGO): - This is any foreign agency or external support to the rural community working in cooperation (partnership) with the Government to foster rural development.

Community Based Organizations (CBOs): - This is a grouping of people (several families) who come together to provide services that may be lacking. The self-help groups that usually spring up to fill up gaps left by the national and local governments in the development process.

Safe water: - This refers to water, which is not contaminated and free from health risk.

Reasonable Distance: - This is a state when members of a household do not spend a disproportionate part of the day in fetching water for family needs. WHO gives 0-400metres as the most reasonable distance to an improved water outlet or source. GOK (1999) gives it as 2Km. For the study the GOK standard is adopted.

Catchment Area: - It refers to a region designed to be served by a specific water project. This is either a sub-location or several villages in a sub- location.

Coercion: -Refers to provision of labour under duress.

Participation: - This refers to the involvement of different stakeholders in the planning process of a development project.

1.7 Research Methodology

The research study entailed the collection of two types of data namely, secondary and primary data. It made use of descriptive survey method and blended it with focused synthesis based upon survey of recent available literature.

1.7.1 Target population

The research focused mainly on the household as the unit of analysis. Those households falling within the catchment area of water project constituted the study population. This included both the completed and uncompleted phases of the water projects. The population was based on villages served by the water projects. The number of the target population was referred from secondary data from Divisional Water office.

1.7.2 Sample Size and Sampling Procedure

The study area had 6 gravity fed water projects. Owing to the vastness of the area, constraint of time, funds and homogeneity among research variables, which included the nature of technology used, and the manner in which the projects were initiated, for the study three projects were sampled using simple random numbers. This was in order to avoid subjectivity in the selection. The population was stratified into 2 strata, those getting water from the projects and that getting water from traditional water sources. The researcher sampled 100 households for the 3 projects, where by 75 households were for those getting water from the projects and 25 households for those getting water from traditional sources but falling within the proposed designs of the projects. The latter acted as a control group for the study and 8 households were sampled for each water project.

The 25 households for each water project were sampled using a list of water users from each project management committees. The researcher prepared a list of those with individual (house) connections and those drawing water from communal water points/kiosks. Using systematic random sampling the researcher selected the first household randomly and then the 4th household for those with individual connections, and the 10th household for those drawing water from communal water points/kiosk. For each set of households, the researcher sampled 5 and 20 households respectively. This was done in order to avoid subjectivity in the study.

For the control group, the researcher identified the unimplemented phase 11 of each project and then using the Survey plan (line) as a transect line, identified the furthest point where the water line was proposed to cover. The researcher then sampled 3 households randomly, where by the first household was selected randomly and then every 5th household following land parcel adjudication numbers.

The sampled 3 projects were serving 3047 households with water in the study area. If the researcher went by research requirements of a sample size that ranges between 10 to 30 per cent of the total population, then a maximum of 304 households would have been interviewed. However, given the constraint of time, homogeneity among research variables and the nature of the study the above sample size of 100 households was selected.

Breakdowns of the projects were as shown in Table 1.2.

Table 1:2 Sampling Table

Location	Sub-location	Water project	Households	Sample
Kalamba	Kalamba	Kisinzi	1151	34
	Nziu	Ikomba	1046	33
Kithumba	Kithumba	Kilinga	850	33
Total			3047	100

Source. (Field Survey, 2000.)

1.7.3 Methods and Tools of Data Collection

Both primary and secondary data were used in the study.

1.7.3.1 Primary Data Source and Methods

Field Surveys were carried out to collect the primary data. A standardized questionnaire was administered on samples of household heads or other responsible members of the family falling within a particular catchment area of a water project. Other questionnaires were administered to Government officials such as local administrators and District Water Engineer (DWE), and NGOs and or external support agency officials. The questions consisted of both closed-ended and open-ended questions area.

The household questionnaire was geared towards getting information concerning the following:

- (i) How the local community had benefited from the provision of the water?
- (ii) How the water projects are managed and the local people's opinion on the reliability of the water project?

- (iii) The problems faced by the local community in getting water for use from the Project?
- (iv) How the local community was prepared from the initial stages to run and manage the water projects by the Donor and Government?

The questionnaire for local administrators was geared towards soliciting the following information.

- (i) The role of each of the following during the initiation, design and implementation of water projects:
 - (a) Local community
 - (b) Local administration
 - (c) Donor or External Support Agencies
 - (d) Government (Ministry of Water)
- (ii) How decisions concerning the running of water projects were made?
- (iii) How elections for water committees' are or were done?

The District water Engineer questionnaire was formulated to solicit the following data.

- (i) How local communities were incorporated in projects, which were implemented through partnership between Government and Donors.
- (ii) How and what resources were put in place to ensure the water projects' sustainability.
- (iii) Problems encountered in working in partnership, with Donors and local communities.

From the Donor/NGO/ESAs officials, the questionnaire was geared towards getting information concerning the following:

- (ii) How the local communities were involved in the water projects that were to benefit them.
- (iii) How the ESAs or Donor partners with the Government in water development projects.
- (iii) How sustainability of the water projects is planned for.
- (iv) Problems encountered in working in partnership with government and the local community.

Other methods used for data collection included use of general observation of the water distribution system with regard to identifying any observable operation problems; the general characteristics of the water users and how the water was used for economic and social benefits. Oral interviews, by use of key informants were used on persons who were identified in the field especially those who had lived in the research area for a long period and had knowledge about the projects' history. Photographs were taken showing the general conditions of the communal water points, individual connections and how people got water from the projects. Such type of data is used as a back up of the primary and secondary data collected.

1.7.3.2 Secondary Data Source and Methods

Existing literature relevant to partnership and community participation was reviewed from the libraries, which involved both published and unpublished materials. These included books, journals, newspapers, government publication and office reports at the district and divisional level. The Literature reviewed enabled the author to formulate the conceptual framework in Chapter Two. The maps for the study area and projects designs were also referred from the District Water office.

Information from the existing literature was used as background information and in identifying the existing gaps as well as acting as the yardstick to measure the findings on community participation and partnership development approach.

1.7.4 Methods of Data Analysis

Various methods were used to achieve the research objectives. Data collected from the field was input in the computer and analyzed using the Statistical Package for Social Sciences (SPSS). The data for the first up to the fourth objective was analyzed in descriptive and inferential form by use of percentages and frequencies. For the fifth objective of the study, quantitative methods of data analysis were used and this involved use of descriptive statistics and measures of association (correlation-regression analysis). Multiple Linear regression analysis was used to determine to what extent distances to water outlets could explain the changes in per capita water consumption, at 0.05 significance level using F-test. This analysis revealed that for each additional kilometre to a water outlet, there was a predictable decline in per capita water consumption of 1.93 litres. The study also revealed that there was no significant relationship between distance and the amount of water consumed since the computed F-statistic was less than 0.05. Correlation-regression analysis was used to interpret the relationship between family size and per capita water consumption. Tables, maps pie charts, and plates were used to present the data collected.

1.7.5 The Scope of the Study

The study identifies the major areas of community participation in partnership development approach. This was done through examining the conditions under which

the local people were involved in identification, design and implementation of the existing water projects in the study area. The level at which the local communities were involved in the water projects is unveiled

The study focuses on gravity water projects, which were implemented through partnership between the Kenya Government and ESAs (NGOs or Churches) at the community level during their planning process. Other schemes such as the protected springs and hand pumps, which are prevalent in the area, were not of concern in the study. The study is based in Matiliku Division in Makueni District because of the prevalence of non-functional water projects implemented through the same efforts.

Data was sought from the households falling within the catchment areas of the water projects, Government officials (District Water Engineer and local administrators) and the ESAs.

1.7.6 Study Limitations

The major limitation for the study was that it proved impossible to assess the total amount of water consumed per day and distances to the nearest sources of water. This was because the study was carried out during the month of December when rains were heavy (around 221 mm). Hence, owing to the nature of rocks in the study area, surface water was in plenty and this interfered with the respondents' view on the magnitude of the water problem in the area and the amount of water consumed. There was limit in time making it impossible to undertake a comparative assessment of the distance coverage and water consumption pattern over different seasons.

During the study it was not possible to compute the total number of people falling within the projects catchment areas not using water from the projects and records from the management committee did not reflect the real populations served with water from the project. To counter act this limitation, secondary data was used from the Divisional Water office, which was also not up to date.

1.8 Organization of the Study

The research was destined to cover 6 water projects in Matiliku Division but due to limitation of time and funds the author sampled 3 projects, which were located in two locations. The projects studied are gravity fed and were implemented through the combined efforts of the ESAs and the Government of Kenya to benefit the local community. The two locations are situated along the Emali-Wote road and to the south of Wote town, which is the Makueni District headquarters. The research study set out to find out why projects implemented through the combined efforts of the ESAs and the Government have not been sustainable beside the heavy investments.

The study is organized in six chapters. Chapters one provides a general overview, statement of the problem, objectives of the study, study assumptions, justification and scope of the study, definition of terms and study methodology. Chapter Two contains relevant Literature Review to the research topic and the study's conceptual framework. It highlights on the following sub-topics: -

- Partnership as a development approach
- Levels of partnerships.
- The Government policy on rural development and water supply.

- The role of ESAs and NGOs development.
- The role of community participation in rural development.

Chapter Three introduces background information to the study area. It highlights issues such as location, physical characteristics and resource endowment and an analysis of the water projects found in the study areas. It also outlines the areas' socio-economic profile. Chapter four analyzes and interprets the data collected about the water availability in the study area. It highlights on the performance of the water projects, supply and demand as well as factors determining per capita water consumption.

Chapter five focuses on the role of community participation in partnership development approach. It expounds on the role of different actors during the projects' planning process. It highlights the problems associated with lack of community participation in development efforts involving two or more partners; hindrances to projects' sustainability and policy implications. It finally expounds on the summary of research findings.

Chapter six is the final chapter and consists of the research implications, the recommendations that arise and conclusions. Areas of further research are also indicated based on the findings.

A study on partnership in rural development provides a special study gap. From the above breakdown of chapters, guiding key areas are brought forward through contributions of scholars in related topics based on Government policies. Such information would aid in formulating a theoretical understanding on which the study is based. The next chapter therefore presents contributions of other scholars in community participation and partnerships in rural development

CHAPTER TWO: LITERATURE REVIEW AND CONCEPTUALIZATION OF THE STUDY

2.0 Introduction

Concepts central to the Local Agenda 21 (UNCHS, 1996) process such as partnerships and participation are also useful in rural development. The following discussion embraces issues in partnership as a development approach in both the developed and developing countries. It attempts to assess the character of "partnerships" which are evolving. It focuses on both formal and informal partnerships. It is an approach of all stakeholders in the development processes mainly the government, the donors or NGOs and the local community. The governments' concern in such a partnership is well understood by focusing on the government policy on rural development and water in specific. The role of the Donors or NGOs and other External Support Agencies is well exemplified. The chapter highlights on the meaning of community participation and the typologies of community participation in order to bring in light the role of the local community in partnerships.

The above approach is taken because of the challenges in the development process which at present requires going beyond the traditional role of guiding or controlling such process but incorporating frameworks for the multiple actors to share visions and commit themselves and co-operate in achieving desired goals. In rural areas, most development projects are donor-driven hence coordination among the various stakeholders is essential in order to ensure future sustainability. This is in order to ensure that such donor-supported projects are sustainable once the donor support is shelved. The development

approach of "Top-down" has been criticized and the opposite i.e. the "Bottom - up approach" has been advocated for by Alifa, 1999; Maleche, 1998, UNCHS (Habitat) 1997; Pretty 1995; and Chambers 1994. With the former development approaches, poverty and ignorance still persist in many African countries even after four decades. Water projects initiated by 1980s and early 1990s have stalled as indicated in the problem statement. This points to the need for the new strategies. The empowering of the local people in any development process is for instance very important. The role of donors and the government need also to be clarified so that conflicts do not arise or dependency syndrome does not develop among the local communities where projects are implemented. With partnership it is expected the actors will operate at the same level with each supporting the other in the development process.

2.1 Partnership as a Development Approach

Mehta (2000:73) notes that a partnership is a sort of formal association or contract in which each partner has obligations, rights and responsibilities. It is a mechanism through which different actors mutually take advantage of their comparative strengths while minimizing their weakness.

In the ACP-EU (2000:3) Partnership Agreement, dialogue plays a key role in the success of development cooperation activities. Partnership goes hand-in-hand with ownership and mutual confidence. In a more constructive and positive spirit, good governance is a fundamental element of the new agreement. Each country must own and be accountable for its policies. The agreed framework for cooperation, programming and implementation

gives concrete substance to the partnership approach and allows for progress in the co-ordination process.

The magnitude of water problems in the country definitely requires such a concerted action, bringing together the Government, ESAs, the local communities and other stakeholders. Given the scarcity of funds available to central governments to meet the needs of its population, it is necessary to forge alliance with NGOs, CBOs, and the international and multi-lateral agencies. NGOs may have funds, the government has the technical expertise, while the local communities owns the land and have access to locally available materials.

Partnership is a mechanism of ensuring that the comparative advantage of different actors in the development process is exploited in a mutually supportive way. The strengths and weaknesses of the public sector, the NGOs are harmonized so that the maximum use is made of the strengths while minimizing the potential for inefficiency caused by the weaknesses. It thus embraces community participation and foreign aid.

Darlow, A and Newby, L (1997) notes that partnerships do not achieve results as a matter of course but commitment, resources and the right set of people and circumstances are all needed if they are to work. Partnerships have limitations as well as benefits. Without doubt, partnerships can oil the wheels of change and it would be grave mistake to abandon them.

In another study by Roberts (1990) in the Leicester Environment City: Learning how to make Local Agenda 21, partnerships and participation deliver found out that partnership

arrangements such as the specialists working groups can be extremely valuable in creating relationships between individuals and organizations that encourages joint working. But using a formal partnership structure, such as working groups will not necessarily result in significant in-house action within participating organizations or in major projects within the community. To be precise, the Environment City Project demonstrated that partnerships arrangements are of great value if they embrace a commitment to dialogue and to mutual understanding and with emphasis on action.

Bennett and Krebs (1991) notes that weak conceptualization allows dominant social actors to ideologically appropriate the notion of partnerships within the urban environmental management process to reproduce existing asymmetric power relations. Advocates of partnerships assume that different institutions are willing and have the capability of working with one another.

Davidson (1996) notes that many social scientists have come to realize and admit that knowledge and information for development initiatives require joint ventures through intensive communication, interactions and negotiations of all actors. Governments can also not afford to supply all what they had promised at the independence e.g. water for all by the year 2000: (GOK, 1966) and hence the need for participatory planning and alternative development approaches that promote the tapping of resources from all.

Musunba (1997:2) notes that since independence, traditional rural development approaches have increasingly been criticized due to their top down, technocratic and sectoral nature. The developing countries have failed to meet the rural needs. The rate of population growth has overwhelmed the financial, human and institutional resources of

the governments. Thus a greater proportion of the rural populace do not have access to social welfare services like water. The provision of these services in a rural area like Matiliku calls for broader and enabling management framework based on stakeholder involvement and efficiency. The framework includes: -

- Participatory formulation of policy and plan;
- A broad based strategic approach to formulation of policy objectives;
- Realistic design, implementation, monitoring and evaluation of programmes;
- Enhancement of human, capital, physical and natural resources;
- Improved performance of institutions and information handling; and
- A productive partnership among all interests groups.

Partnership emerges out of the challenge facing development agencies in the bid to promote development. It is a way of integrating effort through the formation of strong and active alliances or “strategic partnerships”.

2.1.1 Levels of Partnerships

According to (WEDC 1997:62) there are two levels of partnerships: -

2.1.2 Community Partnership (Local Participation)

The first most important form of partnership will be with the communities in the pilot areas. The project needs to work with the communities to reinstate a sense of ownership and responsibility. Positive traditional knowledge needs to be understood and advantageously used by the project (WEDC, 1997). This is what on the other hand is referred to as community participation. This form of partnership can be defined as an

organized opportunity where stakeholders voluntarily take part where their voices can be heard in rural development and decision-making process. It is guided by shared vision and one of the necessary conditions to do this work is that the environment should be politically stable and respectful of human rights, democratic principles and the rule of law and good governance. The association of the civil society and the promotion of a direct involvement of all stakeholders are major components that doubtless contribute to the success of the partnership as noted in the ACP-EU Partnership Agreement (2000:3). It also indicates vividly that for partnerships to be successful the community should support such initiatives, the involvement of civil societies, economic and social players in the development process. It stresses the need for information, support for capacity building, the principle of consultation of non-State players on reforms and economic, social and institutional policies to be supported by the community; involvement of non-State actors in the implementation of programmes and projects; and the encouragement of networking and strengthening links. The inclusion of civil society and economic social actors in this partnerships is a further a new feature. The objective is to involve these parties in the definition of strategies and priorities, which hitherto were the exclusive jurisdiction of governments. The aim is therefore to establish mechanisms, which reconcile State responsibilities, and recognition of the increasing role-played by the non-State actors in the development process. The involvement of civil society in the partnership is not as simple as might appear at first sight, but is a complex issue because of the disparity of local situations, which in effect calls for imagination, flexibility and pragmatism by the leaders of such a process.

2.1.3 Partnerships among Governmental and Non- Governmental Agencies/ESAs (Institutional Partnerships)

In the (WEDC 1997.66) it is noted that ways through which the partnership is demonstrated are by sharing roles among the agencies, resources and information generated among the implementing agencies. The bottom line of the partnership is to achieve efficient and effective use of resources both at the level of the government and NGOs. Such a partnership has an aspect of cost-effectiveness in term of human resource contributing their time and expertise to activities within the schedule of institutional framework. It is a cooperative working arrangements aimed at achieving a specific objective (Katajima, 1997).

It is important to note that most development activities involve partnership of some kind (WEDC, 1997). The partnership may include almost any combination of the following:

- An international funding and/or facilitating agency (Multilateral, bilateral or Non-governmental);
- A National or Local Government department(s);
- A National or Local Non-governmental organization (NGOs);
- A Local Community Based Organization (CBOs) and
- The individual beneficiaries themselves.

In trying to achieve the greatest impact from the work they support, international agencies often work in partnerships with the Government ministries or Departments of the developing countries. In this way the government institutions are strengthened and individual staff capacities are built by involvement in the development process. These

institutional and individual lessons may be technical, social, economic or managerial fields. As government departments around the world withdraw from direct implementation of development activities and take more strategic role in the sector for which they are responsible such as through setting policy, managing funding allocations and overseeing equitable distribution of service, then it becomes important to build capacity in these roles. Active participation in planning, monitoring and evaluation in the development programs can assist this.

It is on the above basis that Davidson (1996:445) notes that the challenge of rural development requires a framework for multiple actors to share visions to commit themselves to action and co-operate in achieving it. The vision for such a case here is sustainable rural development projects. The process of building consensus on development gives increased chances of sustainability.

Even though partnerships between government and private sector or CBOs have become a fashionable approach, it is not an easy process due to lack of coordination and commitment between the participating parties. It can turn out to be a major disappointment. Partnerships rely on a clear focus on common areas of interest and understanding of individual interests. It is in the process of planning that partnerships can best be forged right from the beginning and not only at the end of the process when a source of funding or other commitments are required.

Blower (1993:240) notes that stakeholders may in many ways be rivals for resources. They can only work together in areas where there is a clear commonality of interests. It should not be seen that the *ad hoc* groups are themselves sustainable; except in the

situation that the problem of opportunity that binds them together is itself sustainable. Also from the existing literature on institutional partnerships, definitions of what constitute institutional partnerships in urban environmental management and rural development are mostly generalized, indeterminate or often non-existent. This inflexibility and lack of precise definition have undoubtedly encouraged the rise of partnership on the political agenda. The lack of an adequate conceptualization of partnership is exposed when faced by the practicalities of policy formulation, implementation and evaluation. Basing on these facts, scholars such as Stoker and Young (1993) have highlighted on the important factors for this approach such as trust, information exchange and mutual dependency in successful partnership arrangements. Given the scale and wide-ranging nature of challenge of sustainable development, there is no doubt that work by all sectors can lead to better coordination and can help ensure that organizations work in harmony. They can also mean wider support for sustainable development initiatives and hence increase the chances of success.

However there are limitations to what partnerships can achieve and, if managed badly, partnerships arrangements can result in conflict, frustration and wasted time. Mwangi, S.W 2000:14) identifies some of the key lessons from partnerships as the follows: -

- *The role of multi-sector partnerships must be absolutely clear.* Partnership-based groups will tend to waste time discussing what their functions if it is not obvious from the onset.
- *The notion of numerically equal partnership between sectors on all occasions can be naive.* The board of Leicester Environment City and the early specialist working groups' attempted to create numerically equal representation of the public, private and voluntary sectors. However, it is more important that partnerships bring together a

broad spread of those with most ability to act, are seen to be reasonably balanced and are well informed about the hopes, concerns and ideas of the wider community.

- *Successful partnerships are usually based around mutual gain.* Ideally, organizations should get at least as much out of partnerships as they put in and this may mean concentrating on specific opportunities.
- *Partnerships must bring together not just the right organizations but also the right individuals to represent them.* Ideal representatives combine a rare blend of seniority, commitment, time and ability. It is especially important that the chair of any group be selected with these attributes in mind.
- *The practicalities of partnerships are important.* They need to be realistically resourced and meetings need to be of a suitable size and frequency.
- *Back-up support organizations help partnerships to achieve success.* Access to staff resources, budgets and information are all-important. The ability to carry out research on behalf of a partnership and to work network with other organizations also increases the chances of success.
- *In practice, one organization or another will need to start the ball rolling and make the first move in bringing a partnership of organizations together.* So long as they do not have objectionable vested interest and given suitable resources, independent voluntary or "arms-length" organizations can be well placed to do this.
- *Partnership meetings and relationships need to be carefully facilitated and should be action-oriented.* At times multi-sector partnerships meetings can be very difficult to facilitate. Often, influential and energetic individuals with widely differing paradigms and agendas will sit around the table. Such meetings can be inclusive in terms of specific commitments and actions arising.

In partnership approach as noted in Table 2.1 of the case of Botswana's Chobe District Settlement Strategy (CDSS), all people have a part to play, it encourages ownership of proposed plans, enhances conflict resolutions and overall sustainability of projects.

Table 2.1 Chobe District Settlement Development Strategy

All are partners in the CDSS implementation process for global District settlement strategy (DSS) to work: -

Let the people start to implement things around them, let them create its action groups at village level. This will form the nucleus from where the larger district actions will start.

In Chobe everybody has a role.

- Women have a voice. let them use it.
 - Men have vigour, let them use it.
 - The youth have the determination, let them use it.
 - The government has the resources and power. let them be judiciously used to give the people an enabling environment for development.
 - The international community has the approaches, let them be adopted and applied.
- You see that in Chobe all can do something and that all work in partnership. This is the approach for the DSS....

Source: (Chobe DSS Team, 2000).

In the above strategy, the implementation process should be seen as the activity of everyone, although all cannot lead. The CDSS has been developed through participation by all. Its implementation has to be the work of all. Leadership must however be with the local community that is the most affected. It is a shift from the "Top-Down approach" in decision-making where decisions are made by national level "experts" and "disseminated" to the rural people through seminars and quickly organized visits by the

provincial administrators. Information is normally passed in haste to the local people as noted by Lelo (1999).

Warah (1997), in Mehta (2000:73) has outlined the following as the advantages of partnership approach: -

- The approach provides mechanisms for resolving the "needs or demand gap" in provision of basic services;
- It enables different sectors to gain access to each other's skills and resources;
- It provides a mechanism for sharing risks and maximizing returns on investment; and
- it ensures that all stakeholders have a say in the development of their communities.

in the partnership process, governments should create an enabling environment that facilitates action by the stakeholders as noted by (Mehta, 2000:74). These could include creating legal, fiscal and regulatory frameworks that can be used in mobilizing the energies and resources of all stakeholders. Less expensive measures can be adopted to speed up the process. For example existing CBOs projects could be provided with technical advice and support from the government or department(s). An atmosphere of good will in itself encourages the foundation of new projects. Their initial expenses can sometimes be reduced as the local people provide free labour, which will cut down costs.

Participation can be enhanced in the following ways as outlined by Mehta (2000:77): -

- Institutions capacity- building through training and developing for local level initiatives by NGOs, CBOs and others on how to deal with rural problems.
- Developing mechanism for co-ordination in order to share resources and experiences, exchange substantive information which other partners disseminate

on analysis of rural problem indicators, thus avoid overlapping or duplication of effort. For instance rural people can provide labour while NGOs can provide the funds for the purchase of materials while the government or department(s) can provide the technology required in rural development projects.

- Encouraging more participatory methods that involve local communities, NGOs, churches and other external support agencies.

Before an analysis of the roles of different actors in water development projects are elaborated it is important to expound on the Government policies on water and rural development.

2.2 An Overview of Government Policy on Rural Development and Water Supply

As indicated in chapter one, the provision of safe water supplies is part of rural development (GOK, 1970). As a result of these the Government put in place policies on water and rural development.

The term rural development has been defined to mean different things depending on the area and context of concern. Chambers (1983) notes that to people outside a rural setting, rural development would mean "desirable change in rural areas" and is identified with such economic growth parameters as modernization, increased agricultural production, socialist forms of organization, health, transport and water.

The World Bank has defined rural development as being:

"..... a strategy designed to improve the economic social life of a specific group of people, the rural poor. It involves extending the benefits of development to the poorest among

those who seek livelihood in rural areas. The group includes small scale farmers, tenants and the landless."¹

Lele (1975), defined rural development as improving the living standards of the mass of low income population residing in rural areas and making the process of their development self-sustaining.

Perhaps a more refined and improved version of this definition is given by Chambers (1983) who says that:

"Rural development is a strategy to enable a specific group of people, poor rural women and men, to gain for themselves and their children more of what they want and need. It involves helping the poorest among those who seek a livelihood in rural areas to demand and control more of benefits of development; the group includes small scale farmers, tenants, and the landless".²

This definition still suffers from the problem of a general assumption in most literature dealing with rural development that lifestyles of the rural dwellers can be improved if and only if development programs are initiated from above by the Government or other development agencies. According to this view the best the rural people can do is to enjoy the fruits of a development program and since they are already "undeveloped" they cannot participate in efforts directed towards improving their standard of living.

Despite that drawback, the definition by Chambers helps to focus on the rural majority and those in the greatest need to improve their standards of living. Therefore, from Chambers' point of view the primary objective of rural development is secure and decent livelihoods that can be attained through increased productivity. This view of

¹ World Bank (1975a: 2) Rural Development, World Bank.

² Chambers (1983:147) Rural Development Putting the Last First.

rural development addressed itself to such issues as poverty, unemployment and inequality. These sentiments are equally shared by the UN, which puts it that rural development is:

"... the outcome of series of quantitative and qualitative changes occurring among a given rural population and whose converging effects indicate in time, a rise in the standard of living and favourable changes in the way of life of the people concerned. It does not mean isolated programmes of 'community Development' 'agricultural extension' 'health and nutrition'".³

Ndungu (1989:22) notes that these definitions help us appreciate and understand the types of change we expect in the rural areas. However, they suffer from two major drawbacks. First they show that developments can only be realized when it is "given" or "enabled" by those who "have it" or "own it". To those in power this is what development is. Secondly, the definitions suffer from lack of specificity. The definitions are too general without a clear indication of how development takes place and who are the direct beneficiaries

Development according to this view is not just mere programmes in projects and tangible monumental or structures. It includes that intangible but real improvement in the welfare of a people. So far from the above it is clear that it is not enough to initiate a programme in rural area and hope that development will be realized. Of importance is how development can be initiated. Chambers (1975) distinguishes between two types of approaches that are prevalent on developing countries. The first he calls "spreads and take-up programmes", where services are pushed out from the centre and are taken up by the people in the periphery. Here initial beneficiaries are those better placed geographically economically and socially. The Second the type he calls the "Last - First programmes", and the aim here is to

³ United Nations (1971:1) *Integrated Approach to Rural Development in Africa in Africa*.

give priority to the poor. In both cases the elite are likely to hinder the attainment of the objectives. These approaches do not indicate how the rural or local people can be involved in the development process. It is this same kind of mentality that has been adopted in partnerships where the communities are relegated to the periphery in developments that are to benefit them.

In Kenya, the idea of rural development was borne of the Kericho Conference in 1966 where social scientists government planners, administrators and other leaders met to discuss issues related to rural development. One of the points made was that the Government should develop a comprehensive approach to rural transformation, which would include short-term measures to promote rural development. The Special Rural Development Programme, (SRDP) was launched in which a series of small pilot projects were established to test the concept of integrated rural development. However, such an approach was top-down, technocratic and sectoral in nature. It thus failed to address the rural development needs. A greater proportion of the rural populace does not have access to social welfare services such as water.

A review of Government policy shows that little direct attention was paid to rural development in the First Development Plan for 1966-1970 and also in the *Sessional Paper* No. 1 of 1965 on which most parts of the development plans based. Development trends continued in the same direction as in colonial times whereby interests of the rural areas were relegated to the progress of urban areas and export economy. The problems in rural areas have emanated from these policies.

The rate at which the urban population was growing due to natural growth and rural urban migration attracted by higher wages and better facilities in the urban areas, was much faster than the Government could cope with in term of providing the necessary facilities and infrastructure. The Government therefore saw the need to improve conditions in the rural areas as a way of checking migration to urban areas. It is for this reason that the Second Development Plan for 1970-1974 incorporated the policy for regional development under the strategy of directing an increasing share of total resources available to the nation in rural areas. The same strategy was adopted and strengthened in the Third Development Plan for 1974-1978 by reinforcing the process of decentralization of development planning and implementation to the district level.

The objective of the rural development strategy was to improve the overall standards of rural life at least at a faster rate than the rate of increase in average incomes in the country. This did not just imply raising incomes but other services such as education, water, and health, towards levels that existed in urban areas.

The Fourth Development Plan for 1979-1983 also recognized the need to continue with rural strategy but gave special reference to the development of ASALs. This was because of the realization that the problems of such marginal lands, be they social, economic, or environmental were complicated enough to warrant integrated co-ordination among various Government ministries. The Ministry of Agriculture was to play a major role of developing programmes and establishing co-ordination procedures of ASALs. Planning was on regional basis (on the basis of major watersheds and agro-climatic areas), but

implementation was on district basis relying on established administrative systems and ensuring local level participation in assessing the needs and priorities.

This fourth Development Plan regarded providing low-income groups both access to opportunities and basic needs (water included) as central to success of this strategy. However due to poor coordination between the ministries, performance of work on sectoral level and poor follow up procedures, projects implemented failed and the ASALs have lagged behind as regards the availability of essential services like water.

The Fifth Development Plan 1984/1988 tended to continue with the same trends as in the previous plan in as far as rural development is concerned. The plan however stressed the need for the recognition that rural and urban areas are highly inter-dependent. The latter provides markets for rural production and is the source of goods for rural households. On the other hand the dependence of urban areas on rural areas is even greater because the urban areas do not have the ability of providing their own subsistence needs. To a large extent therefore, the rural areas provide urban areas with the necessary raw materials for manufacturing and service industries, which influence the economic base of any urban centre.

The Sixth and the Seven Development Plans had similar emphasis for rural development. The Eighth Development Plan (1997-2001) notes that neglect of rural areas in the process of industrialization may pose serious problems if rural urban migration accelerates. Two strategies in the plan are District Focus for Rural Development (DFRD) and Rural Urban Balance Strategy. The District Development Committee (DDC) was to be a major organ for the implementation of these strategies.

The First Development Plan (1966-1970) recognized that water should be treated as an important natural resource, which should be carefully planned with a view of enhancing its contribution to economic and social welfare. The plan was concerned with the provision of water for human and animal consumption for irrigation, for manufacturing and power development among others. It also recognized the need to provide adequate and clean water to rural areas, which had been previously ignored by the colonial Government. The Second Development Plan 1970-1974 revealed the achievement of water supply was 15 per cent of the rural population had access to piped water but still most people had to spend 3-4 hours carrying water especially from distant streams, ponds, or wells. The Government realized that this diverted tremendous time for other possible activities e.g. cultivation, animal husbandry more intensive childcare and necessary leisure. The Government objective therefore was changed to provide water so that it releases from $1/2 - 3/4$ of the time spent on water collection in rural areas. This was because the Government had recognized that the provision of water was fundamental condition for rural development and hence mounted the Rural Water Supply Programme whose objective was to provide potable water supplies to all households by the year 2000 A.D. However, as was indicated in the problem statement this has not been achieved since only 32 per cent of the rural populations have been supplied with piped water (GOK, 1999).

In 1974, a Ministry for Water Development (MOWD) was created as a principal agency for management, development, operation and maintenance of water supplies, sewerage disposal and pollution control. This was in recognition of the great importance of water in promoting health, sanitation and economic growth. The ministry then took over rehabilitation of county council water supplies programme and some 800 rural water schemes of which 600

were not functioning due to various reasons such as lack of capacity to maintain (GOK 1979:195).

By the time the Fourth Development Plan was drawn up, only 1.5 million people were being served by an improved water supply (as opposed to the targeted 3 million by end of the third Development Plan period). The Government realized that the costs of inputs to the water development programme had outstripped the rate of increase in resources available for the same. Water development activities had to compete for scarce resources at a time when other very pressing needs were emerging. This necessitated the call for external support in the water sector.

The Fifth Development Plan 1984/88 showed that the average water supply was 4 per cent in eastern province and 20 per cent in central Province. The Plan stated that by 1984, water had moved closer towards rural households and in most regions average distances to sources of water had halved to the extent that no region had attained more than 1.8 km away from water point in the dry seasons. This was necessitated by the coming up of NGOs and other donor agencies that intervened in water provision, in partnership with the Government. However, the situation at present in most areas like Matiliku division has changed since the distances to improved water outlets have increased as some of the projects have stalled or collapsed completely.

According to the Eighth Development Plan (1997-2001), 75 per cent of urban population have access to safe drinking water with only 50 per cent of the rural population having access to potable water from various schemes.

The benefits of water in rural development are worth noting. Klasse-Boss (1969) gives in details the expected benefits of rural water schemes as follows: -

- (i) Direct economic benefit; whereby the rural water supply is likely to encourage the farmers to increase or improve their livestock. Improved cattle will imply more production, hence products sold will boost their finances.
- (ii) Indirect economic benefit; this includes the time released from water carrying by the farmer and his family. The actual benefits here depend on the size of the farm, the type of crops and the availability of labour to carry the essential tasks especially at peak of labour requirement periods.
- (iii) Health benefits; that the new water supplies will be reliable and free from health hazards. A better health standard may increase the working capacity of the people and hence production and income.
- (iv) Social benefits; the personal relief from heavy job of carrying water, thus the people may spend such time meeting friends and leisure activities.

In Africa women are primarily responsible for providing the water for the household as noted by White *et al* (1972). Women may have to spend half the day traveling and queuing for water as water resources dry up. Women also perform other duties in the family such as child bearing and farm duties (G O K.1999).

The need for poverty eradication arises from the persistence of poverty despite past efforts to combat it through National Development planning and special programmes since independence. The National Poverty Eradication Plan (1999) stipulates out how poverty can be reduced through improvements in the water sector, by setting goals and targets as: reduce time spent by woman on fuel, wood and water collection, increase by 8

percent each year until 2004 access to safe drinking water by poor households and by 2010, create universal access to water.

2.3 Role of ESAs and NGOs in Rural Development

These have increasingly gained international recognition as active partners in providing development solutions that cater for basic needs of marginalized families in overall development process.

NGOs or private volunteer organizations (PVOs) as they are also called are often wrongly looked down upon as trivial players in the development field. Yet as reported by Pickford (1982:36), NGOs spend in aggregate more than 130 million US dollars a year on water projects. In addition, they tend to operate direct service projects at the community or village level using low cost technology that is relatively easily maintainable.

Accordingly to Malena (1995:13), the term NGO is very broad and encompasses many different types of organizations. In the field of development, NGOs range from large Northern based charities such as World Vision to community based self-help groups in the South. They include research institutes, churches, and professional associations and lobby groups.

The World Bank (1995) identifies two categories of NGOs: -

Operational NGOs –whose primary purpose is designing and implementing of development-related projects

Advocacy NGOs –whose primary purpose is to defend or promote a specific cause and seek to influence the policies of the Government.

According to Bebbington *et al* (1993), the recent explosion of interest in NGOs seems set to continue, as they have become new darlings of donor agencies. This is not because they are a new phenomenon in Africa but the scenario where donors have been faced with the crises and inefficiencies of their traditional Government counterparts now want to work with NGOs in programmes geared towards sustainable development. For instance in response to the International Drinking Water Supply and Sanitation Decade (IDWSSD) of the 1980's several NGOs focused on this issue. Pickford (1982) notes that Water Aid in the United Kingdom, Global water in United States fall in the category of dedicated water NGOs and similar organizations in Finland, Denmark and Ireland. Such organizations tend to focus on public education about the importance of water development.

According to Clark (1991), due to the nature and quality of individual NGOs varieties, it is extremely difficult to make generalizations about the sector as a whole. Despite this diversity some specific strengths associated with NGO sector includes:

- Strong grassroots link
- Field based development
- The ability to innovate and adopt
- Process oriented approach to development.
- Long term commitment and emphasis on sustainability
- Cost effectiveness.

The most identified weaknesses of the NGO sector include:

- Limited financial and management expertise
- Limited institutional capacity
- Low levels of self-sustainability
- Isolation and lack of inter-organizational communication and/or coordination
- Small scale interventions
- Lack of understanding of the broad social or economic context (Clark, 1991).

However the above weaknesses, Malena (1995) notes that NGOs can contribute to the quality, sustainability and effectiveness of rural development projects. NGOs partnership with the Governments can represent an opportunity to scale up their activities and extend their impact beyond the micro-level. Again it must be emphasized that NGO sector is extremely heterogeneous. While many NGOs are credible, competent and enjoy community ties, others may be inexperienced, inefficient or stronger in rhetoric rather than action. A well-chosen NGO partner engaged in an appropriate manner can bring the following contributions in water projects: -

Innovation- Given their small size and flexible nature, NGOs are generally well placed to develop and experiment with new approaches and innovative practices.

Project uptake- NGOs which work directly with local communities can play an important role in transmitting information to beneficiaries and enhancing the uptake of projects benefits.

Project reach- Extending project benefits to those who need it most is a challenging task. The poorest and most disadvantaged members of society are often the most difficult to reach living in remote transient situations and beyond the sphere of public service networks.

Participation- Popular participation is increasingly recognized as an essential ingredient for achieving effective sustainable development. They play an important role in promoting participatory approaches in their financial rural development projects.

Sustainability- Past experiences has shown that development sustainability is enhanced when communities play an active role in project activities. Malena (1995) notes that working through CBOs is an effective means of building community ownership and ensuring a long-term institutional presence in the community once the project is over.

Bebbington *et al* (1993), on the other hand notes that NGOs appear to have particular strengths in working with rural poor favouring a participatory approach to rural development in general and in particular water provision. The interest of NGOs is also inspired by more instrumentalist concerns. Many donors and Governments seem to perceive NGOs as a means of filling gaps in public programmes opened up as the state withdraws from different development activities. In the instrumentalists' vision, NGOs are viewed as vehicles for implementing programmes previously executed by the state. For instance the Government policy in the 1970/74 and 1979/83 Development Plans was to provide water to the entire population by the year 2000 AD and this inspired many NGOs and external agencies to initiate water projects mainly in ASALs.

In the recent time, commentators on sustainable development have argued the need for partnership between the Government (public sector) and NGOs in order to capitalize on the comparative advantages of both as noted by (Bebbington *et al.*, 1993).

The UNCHS (Habitat, 1991:12) notes that NGOs are third parties in development. They are better placed than the State or market organizations to carry out five functions: -

- i. Stimulating and promoting the growing demand of people for the support of local initiatives.
- ii. Assisting local groups and communities to organize and develop own projects and programmes.
- iii. Advising Governments on formulation and implementation of community support policies.
- iv. Mediating between the community and the State and other corporate powers, the primary role of third parties.
- v. Raising public consciousness about the underused capacity of CBOs and NGOs.

Generally, these NGOs cannot be seen as potential source of funding. They receive their funding from bilateral donors or international NGOs and use them "in house" for the implementation of their work programmes. UNCHS (1988) notes that some NGOs have established themselves in developing countries because this gives them access to donor funding. In many cases the provision of services is the source of an important partnership between the NGOs Government and communities. A partnership where the Government provides technical assistance, the community provides labour and the NGO coordinates construction and improvement work. The partnership allows the people to fulfill a decision-making role in the development of the project.

UNCHS (Habitat, 1988) believes that NGOs play a significant role in working with CBOs and help them in their development efforts. NGOs are often originators, enablers and implementers of new ideas and models. In many instances NGOs and CBOs have succeeded in demonstrating alternative solutions to meeting community needs through specific projects or programmes. The Matiliku case serves as an example where water projects were funded by NGOs to solve water scarcity.

NGOs fill a special role in the implementation of the Water Decade that is (*The Mar de Plata* conference in 1977 on the conventional wisdom of clean drinking water for all by 1990). Because they are independent of Governments they can be flexible and innovative, they can implement their programmes very fast, and they can play a unique role in involving the communities they serve in project implementation. As a result, the World Bank, various UN agencies and several bilateral aid programmes have turned increasingly in recent years to collaborative arrangements with NGOs. This is because they feel NGOs often have the skills and commitment to carry out grassroots programs that Government agencies do not. In addition they can do so at much more cost-effective level. Pick ford (1982). However these aspects are also their undoing since they may lack vision and capacity to perform some activities hence the need for partnership. It is important to note that if there is no commitment and coordination between the partners the above positive tenets by NGOs cannot be achieved.

2.4 Community Participation and its Role in Development

According to the *Sessional Paper* No. 1 of 1999 on water policy, the common practice in the water sector has been that communities are marginally involved in the entire

development process. However, in the changing economic conditions, it has become inevitable that local communities should be involved at all stages of development efforts. Like rural development, various scholars have defined community participation in divergent ways. The United Nations Centre for Human Settlement (Habitat, 1988) defined the concept community participation in the context of squatters settlement projects as "the voluntary and democratic involvement of beneficiaries in contributing to the execution of the project, in sharing the benefits there from and in making decisions with respect to setting goals, formulating the project and preparing and implementing the plans" UNCHS (1988:3).

Chauhan *et al* (1983:9) notes that while the language of community participation has been incorporated into development jargon, the concept remains cloudy, meaning very different things to different people. It is an umbrella phrase that shelters a range of different (though overlapping) approaches, often less high-sounding in practice than in theory.

According to Narayan (1995:5) definition on participation includes some measure of contributing, influencing, sharing or redistributing power and of control, resources, benefits knowledge and skills to be gained through beneficiary involvement in decision-making. It is a means to define not as an end in itself: the goal therefore is to optimize participation to achieve the desired project goals not simply to maximize participation.

Participation is a multidimensional dynamic process, which takes varying forms and changes during the project cycle and over time, based on interest and need. Narayan (1995) usefully distinguishes among levels of participation, all four which may co-exist

in a project. The levels comprise information sharing, consultative, decision-making and initiating action. Any participatory programme involving members of a community should be designed in such a way that the involvement in the initiation of projects as well as participation in project management can be incorporated in design of programmes. It can entail the involvement in the planning process with the view of increasing trust and confidence in the agency initiating a programme so that people can accept as their own, plans and decisions made by such an agency for them in solving their problems (Crenson 1974:354).

WHO (1991) notes that community participation is not a spontaneous automatic process. It requires an initiative to launch it and management to organize it. In practice community can participate only through community institutions and these institutions do not need to be created out of nothing. Usually a variety of institutions are already in existence, some with high degree of organization and considerable power to influence peoples attributes and behaviour. Such institutions include women organizations, political parties, burial societies and religious bodies.

Wileden (1970) notes that literature on community development/projects indicates that community activities can be organized on four principles namely; felt need, agreed upon goals, involvement and Co-operative principle thus requiring full participation of members of the community who are the beneficiaries or target group of the project.

According to Chitere and Mutiso (1991), in Kenya the lack of human resource is evident in massive development projects, which are proposed and introduced in communities with little or no consultation with the people they are intended to benefit. Thus NGOs

and Government departments may propose massive projects, which may, owing to lack of enough resources for implementation drag several years, or even when completed the projects may not be sustainable that it may not be functional or collapse after a short time. It would seem that most policy makers and implementers, huge monetary contributions to development projects is all that development is about. Such an approach may nurture dependency rather the self-reliant development.

Yen's pioneering work in rural reconstruction contrasts sharply with this approach. Yen argues that development is more than just this visible result or out puts (Mayfield 1985:44). He contends that development involves a process leading to self-sustaining human development. Yen puts it that:

...the rural people should participate in each step of the implementation in such a way that ultimately it becomes their activity, their accomplishment...⁴

The way people's participation is achieved is evident in the following lines of the International Institute of Rural Reconstruction's (IIRR's) Credo, (Mayfield 1985:44):
Go to the people, live among the people, learn from the people, plan with the people, start with what the people know, and build on what the people have.

Chitere and Mutiso (1991), assert that the community members are not barren, but rather have potential as human beings that can be developed. Some have formal education or many have worked outside their home communities for several years, or may have undergone certain types of training and acquired some skills. In addition, some may be experts of some forms of traditional knowledge and skills. The local people's potential is

⁴ Mayfield (1985:44) Go to the people: Releasing the rural poor through people's school system.

also strengthened by the fact that they usually own land and may have other resources like livestock, crop produce, and farm implements. With these basic assertions, the main question is, how such can be brought in where there is partnership of two other development agents.

Mbithi (1974) observed that there is need for the local community to actively participate in the designing, planning and implementation of development programmes. Experience in Eastern Africa and Central Kenya has shown that traditional community development approach inherited from the colonial administration has had problems leading to limited success. For instance there has been disharmony.

"...in the identification of local requirements and planning needs in the identification, mobilization and allocation of local resources."⁵

Furthermore, even more serious Mbithi adds that rural change programs tended to be imposed upon rural communities irrespective of their expressed needs or abilities. (Mbithi 1974:171).

The disharmony is then seen in the form of isolating planning from implementation so that on the one hand is planning a centralized activity in the hands of the Government as any two partners and implementation on the other in the form of imposed programme. This is what Thirkildsen (1988:18) calls "planning without implementation" which leads to "implementation without planning", which is typical in the "control oriented approach" of development. In this approach participation tends to play a minor role in planning and implementation. This is because it is assumed that user participation may conflict with

⁵ Mbithi (1974:171) Rural Sociology and Rural Development.

the desire by donors and the recipient to control activities from above. This is because of the notion that the partners' activities will fit beneficiaries' needs and that user acceptance: resource commitments and knowledge can be mobilized at will if and when needed. This is normally a wrong perception, as the study will reveal.

However, at times, outsider intervention is needed to set the ball rolling, to play the role of what Mbithi (1974) calls "enlightened catalyst" working along with the people to define the community's felt needs as well as to formulate appropriate strategies and programmes to meet these needs. Naiya (1977) discusses this point by citing the extractionist school of advocacy for public participation whose conviction is that there isn't much that a local community can do to effect development without the intervention and the initiative of outside agencies and Government. For Naiya (1977), Kenya's community participation has gradually evolved to resemble this extractionist system.

UNCHS (Habitat, 1988) stipulates that beneficiaries of a project should be given the opportunity of participating fully in decision-making. The project staff should not go ahead to execute a project assuming that the beneficiaries are going to accept it. Rather there should be full incorporation of the community in all the stages of the planning process. This is applicable even when the community has appointed some representatives. In this case the representatives must have a close link with the community so that in effect, there will be close contact between the project staff and the beneficiaries. Furthermore, even when local leaders or community representatives hold meetings with the community to discuss the proposed project in order to hear what the

community say, this would avoid a situation whereby the local leaders do not represent the people's interests but theirs.

Chauhan *et al* (1983) has the view that participation almost never means choosing the technology, developing it and controlling its management. Too often, participation in community projects tends to be treated like market research for a new consumer product. If the community is indifferent to this "product", it is assumed that the answer is to advertise the benefits more widely and educate the "target population" that this is what they *should* want. At times instead of generating independence such "participation" creates greater dependence on distant authorities. But communities are often wiser than their mentors, and refuse to abandon old facilities even as they begin to use new ones. If a new technology should fail, and pipes run dry, for instance, the people may still have their old ponds.

Rahnema (1992) notes that the term participation has often been used to justify the extension of control of the state and to build local capacity and self-reliance. At times it has been used to justify external decisions, while at times it has been used to justify devolving power and decision-making away from external agencies; it has also been used for data collection and for interactive analysis. But "more often than not, people are asked or dragged into participating in operations of no interest to them, in the very name of participation"(Rahnema 1992).

Mwangi, S.W (2000:79) notes that participation can help build long-term capacity and enhance the ability of local people to manage and negotiate development projects. Participatory planning can help raise the status of groups facing discrimination, such as

women, by providing the opportunity to play a role in the development process. It also brings users and service providers, both governmental and private, into a direct relationship and in this may have greater impact on accountability of these suppliers. While participation can be thought of as the yarn that binds together actors in the public-private interface, many argue that there are drawbacks to participatory approaches. For example, they may be time-consuming and require a considerable investment of resources, which can present challenge to projects that operate with limited resources. Participation can be a source of tension and sometimes even a destabilizing force in project planning in that it can inappropriately unbalance existing socio-political relationships. This can undermine the relationships that the participatory process seeks to foster between the actors in the public-private interface.

Pretty (1994) has identified seven different typologies of participation as follows: -

Table 2.2: A Typology of Participation

Typology	Component of each type
Passive participation	People participate by being told what is going to happen or what has already happened. It is unilateral announcement by administration or by project management; people's responses are not taken into account. The information being shared belongs only to external professionals.
Participation in information giving	People participate by answering questions posed by extractive researchers and project managers using questionnaire Survey or similar approaches. People do not have the opportunity to influence proceedings, as the findings of the research or project design are neither shared nor checked for accuracy.
Participation by consultation	People participate by being consulted and external agents listen to views. Those external agents define both problems and solutions, and may modify these in the light of people's responses. Such a consultative process does not concede any share in decision-making and professionals are under no obligation to take on board people's views.
Participation for material incentives	People participate by providing resources, for example labour, in return for food, cash or other material incentives. Much <i>in situ</i> research and bioprospecting falls in this category, as rural people provide the resources but are not involved in the experimentation or the process of learning. It is very common to see this called participation, yet people have no stake in prolonging activities when the incentives end.
Functional participation	People participate by forming groups to meet predetermined objectives related to the project, which can involve the development or promotion of externally initiated social organization. Such involvement does not tend to be at early stages of project cycles or planning, but rather after major decisions have been made. These institutions tend to be dependent on external initiators and facilitators, but may become self-dependent.
Interactive participation	People participate in joint analysis, which leads to action plans and the formation of new local groups or the strengthening of existing ones. It tends to involve interdisciplinary methodologies that seek multiple perspectives and make use of systematic and structured learning processes. These groups take control over local decisions, and so people have a stake in maintaining structures or practices.
Self-mobilization	People participate by taking initiatives independent of external institutions to change systems. Such self-initiated mobilization and collective action may or may not challenge existing inequitable distributions of wealth and power.

Source: Pretty, 1994.

From the above typology, the term "participation" should not be accepted without appropriate qualification. The problem with participation as used in types 1 to 4 is that the "superficial and fragmented achievements have no lasting impact on people's lives"

(Rahnema, 1992). Such forms of participation can be employed, knowing they will not lead to action.

The success of community-based rural development projects depends on the behaviour and attitudes of outsiders:

While directly repressive measures against popular participation have recurred throughout history and up to the present, the anti-participatory character of dominant ideologies has provided the most pervasive form of control, as they have moulded the attitudes of different classes and groups to one another. Hardy mental stereotypes about the innate character and propensities of social classes, castes, "races" distinguished by physical traits, and groups having cultural or religious affiliations different from those of dominant group, have served this purpose. So have the cultural stereotypes through which most societies have maintained the subordination of women. In more subtle ways, dominant classes have consigned others to the more modest roles for which heredity and processes of socialization qualify them.⁶

From the foregoing, community participation in decision-making involves and encompasses community empowerment to initiate, design, plan and implement development programmes. Furthermore, this approach should not be mere involvement of the people in what has already been decided upon and sometimes already initiated by the Government and the development agency.

Dissanayake (1987) notes that it is not enough to involve a community in latter planning stages of a development project because in the first place the project they are being involved in, may have been poorly or wrongly identified thus failing to meet the felt needs of the community.

⁶ Steifel M & Wolfe (1994:10-11). A voice for the excluded-popular participation in development: utopia or necessity?

Kortak (1985) believes that people should come first at all stages of the development projects that affect them. Putting people first in development interventions means eliciting the needs for change that they perceive, identifying culturally compatible goals and strategies for change, and developing socially appropriate, workable and efficient design for innovation. It also involves using rather, than opposing existing groups and organizations; drawing on participants informal monitoring and evaluation of projects during implementation; and gathering detailed information before and after implementation so that socio-economic impact can be accurately assessed.

2.5 Other Issues to Consider when Planning for Water Supply Projects

In addition to community participation and partnerships in water supply other issues that should be considered when planning for a water supply system include management, operation, maintenance, and institutional arrangements.

The history of water management is the episode of socio-economic and cultural development of human race. A number of civilizations have flourished or perished depending on how good or how bad is their management of water. The implementation of water projects involves financial investment but unfortunately in a number of cases the expected returns are not realized while the projects are commissioned but are only partly implemented. Writers like Kulp (1972) hold the notion that the problem is caused by irrational management practices.

The success of water project is hinged on how it is operated and maintained which depends on the existence of a systematic and comprehensive-working principles built on

operational experience (IDRC, 1980). Other school of thought hold the view that the failure of water supply is caused by lack of proper supervision of maintenance and lack of conscientious technically disciplined personnel capable of professional execution of public service (Water Supply and Management Report, Vol. 5 No. 3).

In institutional arrangements, it has been noted that even a well-planned water supply system can fail due to subversion from within the society. In many cases, avoiding opposition from powerful and influential sections of the rural community is essential if the programme is not to be subverted from within (IDRC, 1980,16). This is so because in such undertakings, it is the powerful and/or the influential who are usually the critics who are most outspoken and have powers to subvert such systems. Illegal dealings may result to lack of water in some sections of the reticulation system.

6 Summary of Literature Review

The literature review has shown that partnership in development is one of the most remaining yet frustrating aspects of development theory and practice. It is a dynamic process that transcends the narrow boundaries of any given development discipline. The reported benefits of partnership are multifarious; they extend to virtually every aspect of development in every country at every point in time. It is a fundamental tenet of recent founded strategies of attaining basic needs and hence improvement of the general welfare of the people concerned.

Generally the pertinent issues identified are as follows: -

- There is lack of coordination and commitment between the government, NGOs or ESAs and the local communities in development projects initiated through partnerships.
- There has been lack of capacity by the Government ministries (sectors) to undertake specific tasks assigned hence failure in achieving development.
- The level at which to involve the local communities in the planning process has not been well articulated.
- Governments normally withdraw from development projects involving NGOs and local communities.
- There is contradiction as to what level the community should be involved in the planning of water development projects.

Why then is partnership frustrating? It is largely due to the fact that planners and policy analysts cannot agree on what the concept means, how the partnership should be mooted and who should be represented or involved in the process. This implies that participation and partnerships might be abused by some partners who might have "hidden agenda". But it appears to be agenda for future development efforts. But what exactly is it? Why does it work? What evidence exists which explains how it can be promoted if not actively programmed? Is it really operational as part of a development strategy? How can the community be involved in partnership approach? These are questions for which ready answers do not exist. One reason for this gap in knowledge is the lack of precise definitions of fundamental terms and a conceptual framework with which to analyze past

experiences. Although there is a growing body of literature on this subject much of it is still anecdotal and extremely limited in coverage to urban environments.

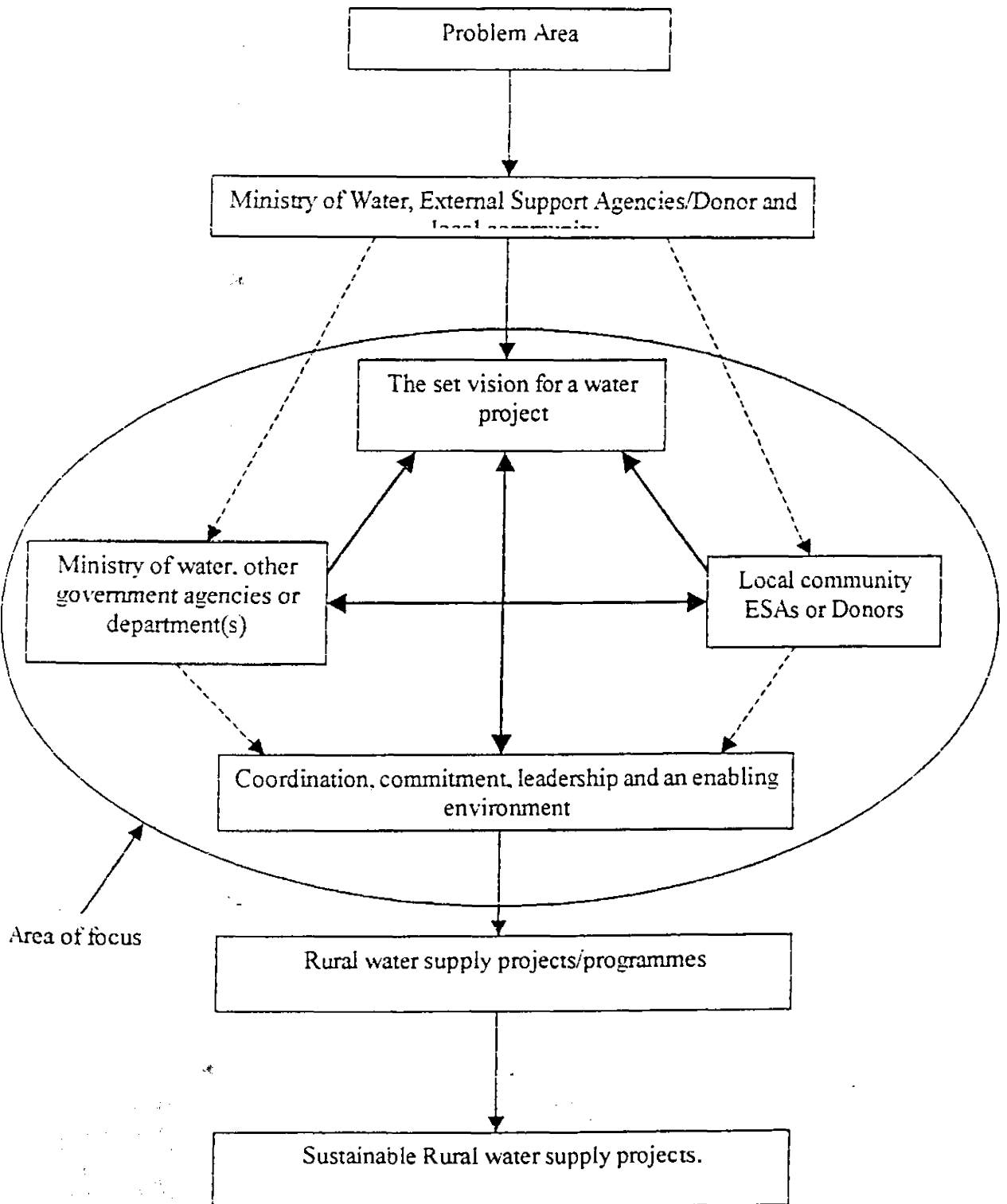
2.7 Conceptual Framework

The study examines partnership in rural development and how the local community can be involved in the planning process. The community should occupy specific role in any development effort that affects it. Projects implemented through partnership between Government and other External Support Agencies have not been sustainable, and this has called for another approach. Issues of operations and maintenance are critical in infrastructure projects, which requires future technical expertise, otherwise who will operate and maintain such projects?

On the other hand inadequate planning of the water projects, insufficient training and capacity building at the local level, inappropriate technology and inadequate considerations of suitability are some of the reasons for projects failures. This therefore calls for a different approach in development strategies in which the beneficiaries, the Government (Ministry) and ESAs play collaborative and committed working relations as shown in Figure 2.1.

The arrow directions, which are two-way, mean collaboration is two-way, whereas the arrangement of the boxes and the flow of the lines constitute the plan envisioning. The oval arrangement where the actors are shown symbolizes consensus and operation at the same level to come up with the set vision.

Figure 2.1: Various Actors and Linkages in Water Supply



Source, Author, 2001

The conceptual framework shows the various actors involved in water supply projects. At the top in the framework we have a problem, which can be identified by any of the actors, that is the Government through specific ministries or department(s), the ESAs and the local community. The oval structure comprising of all the actors in the partnership development approach and the two-way arrows means that collaboration is two way and the actors operate at the same level hence the setting of a common vision. Each actor through commitment, coordination, leadership and the existence of an enabling environment works towards the achievement of the set vision (plan).

The linkages between these actors provide a potential for having an integrated vision hence each actor works towards its achievement and this is likely to lead to sustainable projects. The Government and its specific department(s) set the policy for action, and using its resources at disposal and power it can judiciously create an enabling environment. It also has specialized manpower. The donors or ESAs also have resources and provide the incentives, which influence the performance of field staff. The local community has the accessibility to locally available resources, which can be utilized for the development of such projects. Also at disposal is the free labour, which can be used to cut costs. Such projects are likely to be sustainable since all act as one for a common cause. On another dimension there is need for support, guidance and continuing flow of inspiration from those who make policies and set standards. Without this kind of back up from policy makers, they are not likely to involve people and hence failure of the ultimate plan.

CHAPTER THREE: BACKGROUND INFORMATION ON THE STUDY AREA

3.0 Introduction

Chapter three presents a background analysis of Matiliku area. Its main features are the physical aspects, the resource endowment and the socio-economic dimension. Specific emphasis is placed upon the water resource and supply state.

3.1 Location and Size

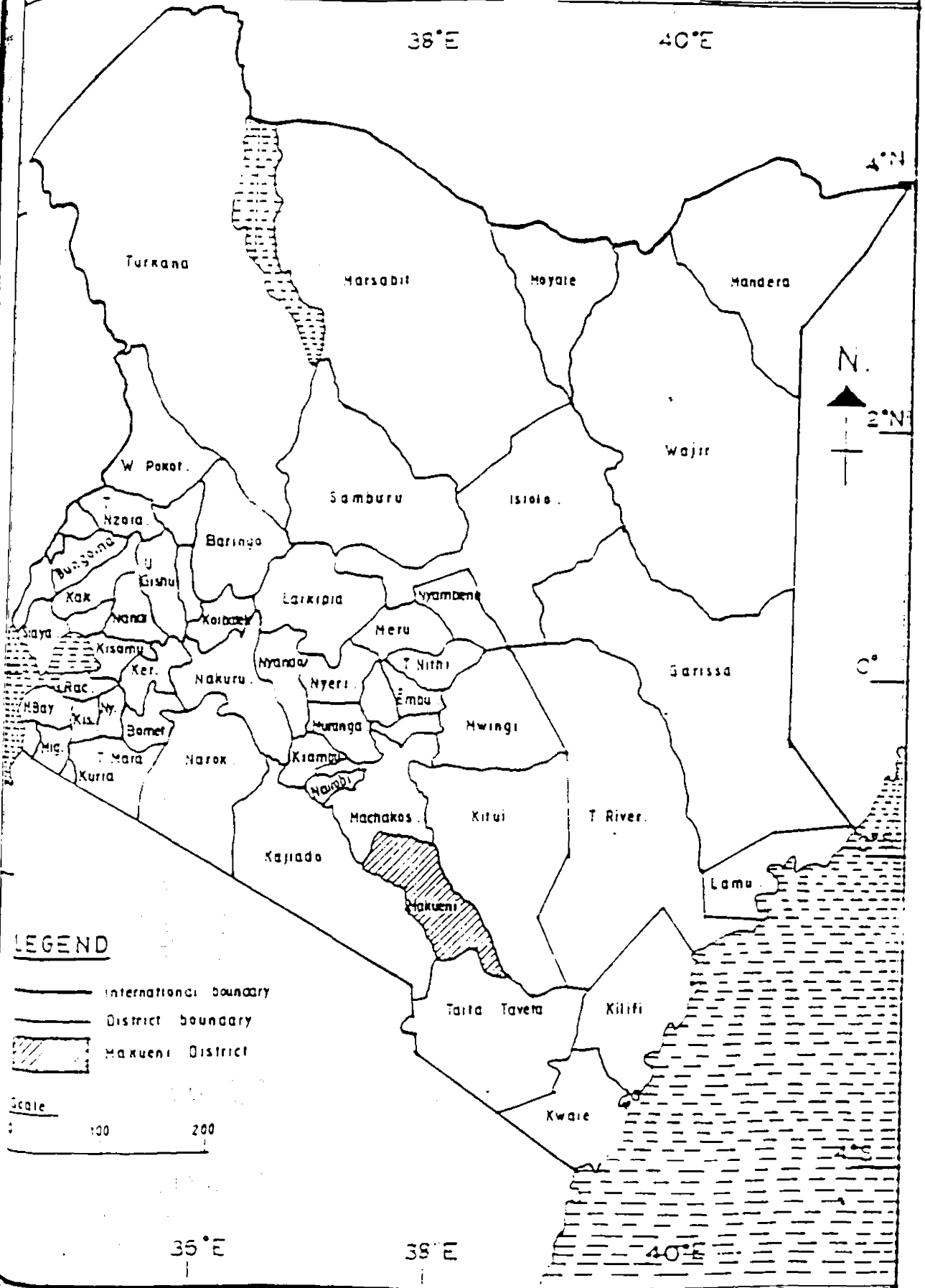
Matiliku Division is located to the south of Wote Town, which is the Makueni District headquarters, in Eastern province of Kenya (Map 3.1). Access to the division is through a gravel road, which runs from Emali to Wote town. Emali town is located on Mombasa road. To the North, the division borders Ukia and Kaiti Divisions, to the East, Kilungu and Kasikeu, to the South Mbitini while to the west lies Wote Division (Map 3.2). It is situated between Latitudes $1^{\circ}30'S$ and $2^{\circ}55'S$ and between Longitudes $37^{\circ}30'E$ and $37^{\circ}35'E$, covering an area of 240.6km^2 . It is divided into 4 locations, which are further subdivided into 7 sub-locations with several villages (Map 3.3).

3.2 Water Resources and Surface Water Potential



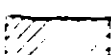
Water in Matiliku is relatively scarce due to low average rainfall and high evaporation rates. Water crisis is accelerated by the geological morphology, which is an important deterrent to surface water percolation.

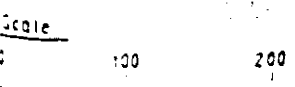
Surface water is available in the streams but subject to seasonal fluctuations. Some sections of the rivers are seasonal especially in the lower parts. Over three quarters of the division lies within the catchment of Kikuuni river basin. Kikuuni River has several streams flowing into it such as Kyamela, Ithangati, Mbaloni, Kyiwa and Manyenyuli. These streams have their major catchment from slopes of Nzau and Makuli forests. Kilungu hills though not strictly in the study area is the source of several streams such as Kyakavia. River Mwilu, which has its source from the parts of Nzau forest, flows southwestwards and joins Kikuuni River down-stream before it joins River Athi, which is perennial. Map 3.3 shows the distribution of rivers in the study area.

MAP 31 LOCATION OF MAKUENI DISTRICT



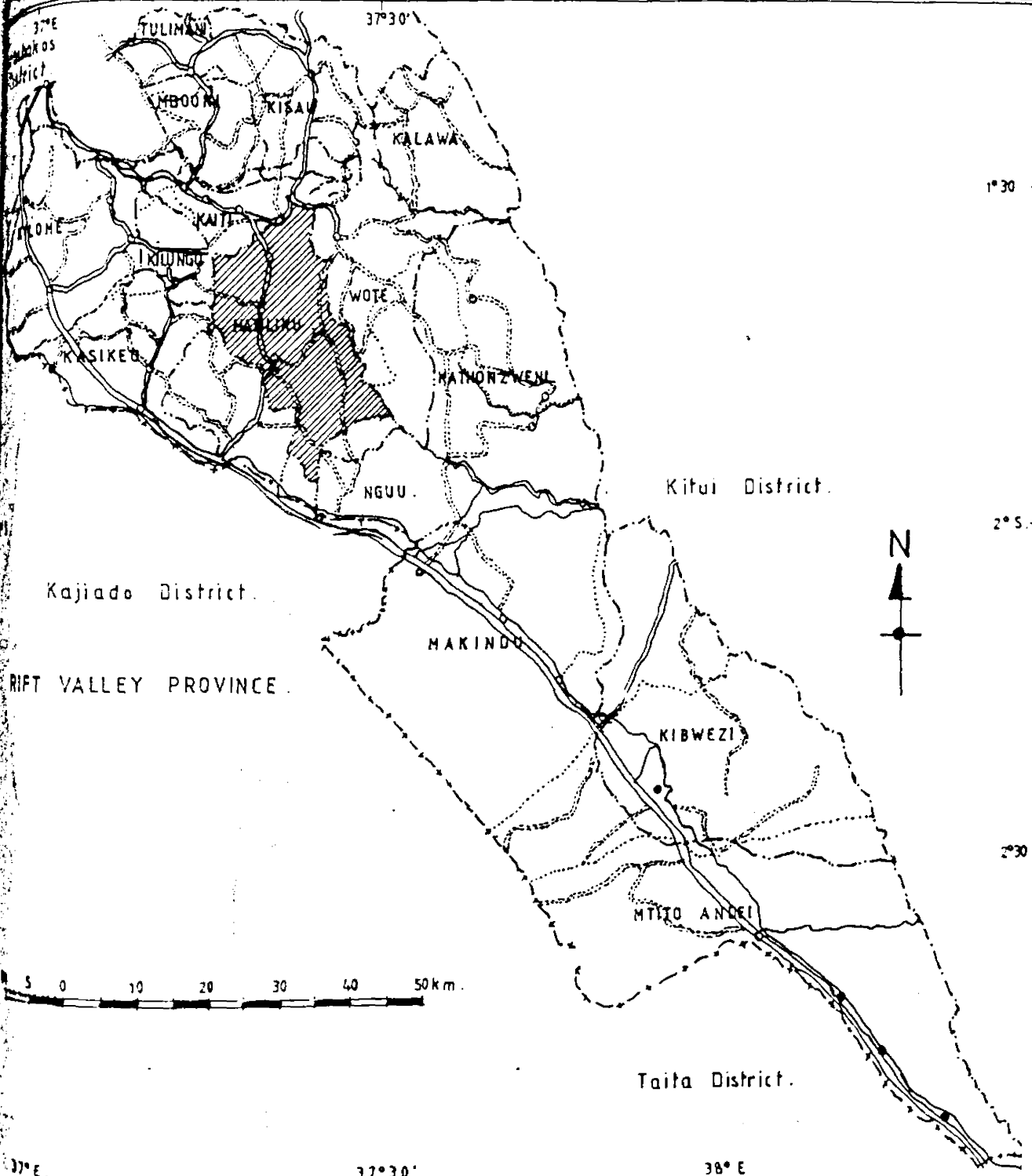
LEGEND

-  International boundary
-  District boundary
-  Makueni District



Source: Adapted from Makueni District Development Plan 1997.

3.2. MATILIKU DIVISION: LOCATION IN DISTRICT CONTEXT.



LEGEND	
	Provincial boundary.
	District boundary.
	Division boundary.
	Location boundary.
	International road.
	National road.
	Primary road.
	Other roads.
	Railway.
	River.
	Urban centre.

Source: Adapted from Makue District Development Plan 199

MAP 3.3. DRAINAGE SYSTEM OF MATILIKU DIVISION.

37°30'E

37°35'E

M. W. M. O. B. B. B. B.

M. W. M. O. B. B. B. B.

NZIU SUB. LOC.

Makuli forest.

IKANGAYYA SUB. LOC.

KALAMBA SUB. LOC.

KALAMBA LOCATION

KITHUMBA SUB. LOC.

Nzau forest

KILILI SUB. LOC.

NZAU LOCATION

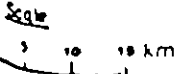
KAWALA SUB. LOC.

MATILIKU SUB. LOC.



LEGEND.

- River/Stream
- Divisional boundary
- Locational
- Sub-locational
- Road
- Forest



Source: Divisional Water Office 2000.

37°35'E

3.3 Relief and Drainage

Much of the area is low lying with gently sloping terrain except for isolated hills which form the Nzaui and Makuli forests whose heights are 1825 metres (6004 feet) and 1813 metres (5964 feet) respectively. Such topography offers a comparatively good terrain for development of gravity-fed water flow systems. Most of the streams flow from the hills and form part of the divisions' drainage. The water projects in the division have their intakes in the two forests.

Although Kilungu hills are not strictly within the study area, it exerts some influence in the study area. It is an important catchment area of various streams draining in the division. The areas overall drainage pattern is North, Northwest towards the south and Southeast.

3.3.1 Hydrogeology and geology

The geology of the study area is mainly basement rock, which is of the Mozambique belt system of rocks. This is composed of metamorphic rocks, which form intercalation of granitoid gneisses, biotite gneisses, horn blade gneisses, quartzite and quartz-feldspar gneisses.

In the forests, the dominant geology is the granitoid gneisses while along the riverbeds have alluvial deposits especially along Kikuuni River.

The hydrogeology of the region is dependent upon the nature of the basement rocks. Depending on the type of rocks, the degree of jointing, fracturing and weathering varied

hydro-geological conditions certainly exist in the area with sufficient amounts of ground water occurring within the intensively jointed, fractured and/or weathered basement rocks. In the addition, the amount and frequency of precipitation is a significant parameter influencing groundwater occurrence in combination to the presence of forests.

3.3.2 Soil and Vegetation

The soils in the area are developed on gneisses rich in Ferro-magnesium minerals. In most parts, the soils are well-drained, moderately deep, dark red and dark reddish brown, friable to firm, sandy clay to clay of quartz gravels.

Relief and climate conditions affect vegetation of an area. In the study area, the vegetation is a widespread, mainly indigenous tree such as the acacia family, which includes *Acacia tortolii* (Miaa), *Acacia senegal* (Misewa), *Acacia melifera* (Muthii), *Acacia nilotica* (Miseinei) and *Acacia brevispica* (Mukusyi). Combretum species are also dominant such as *Combretum mole* (Miama). Comiphorus family is another species such as *Comiphorus africana* (Itungati). Over three quarter of the uncultivated land is covered by *Lantana camara* (Musomolo). Along river valleys we have ficus species such as *Ficus psychomorus* (Mukuyu), *Ficus thorningi* (lumo) and *Ficus benjamina*. Napier grass and *Acacia gerrardii* (Muthii) are also found in zones that are wet throughout the year like river valleys.

The hills are mainly composed of exotic species such as *Pinus patula*, *Cuppressus lusitanica* and Eucalyptus species such as *Eucalyptus saligna* (Blue gum). Near the

forests, we have *Albizia* species such as *Albizia gumifera*. These type of vegetation are dominant in cool areas like the hills.

Homesteads have their own vegetation, which is mainly composed of the *Cussia* species as *Cussia siamea*, *Cussia spectabilis* (Mukengeta), *Terminalia mentalis* (Umbrella) and *Croton* species e.g. (Ithulu)

3.3.3. Hydrological Potential

This can be described as low to medium considering the impervious nature of the crystalline metamorphic rocks found in the area and the irregular rainfall experienced.

Ground water occurrence in such geological terrain is usually restricted to fractured and faulted zones within the rocks especially in the forest regions. The forest provides recharge flow while the zones of broken rock may create sufficient storage for water especially where they extend deep into the ground. It is in such zones that we find springs whose water has been tapped for use in the low lands. Other ground water also occurs where the basement rocks are deeply weathered and in contact of crystalline metamorphic rocks. Shallow ground water may also occur within the sands of dry riverbeds or along old and buried river channels where some base flow takes place.

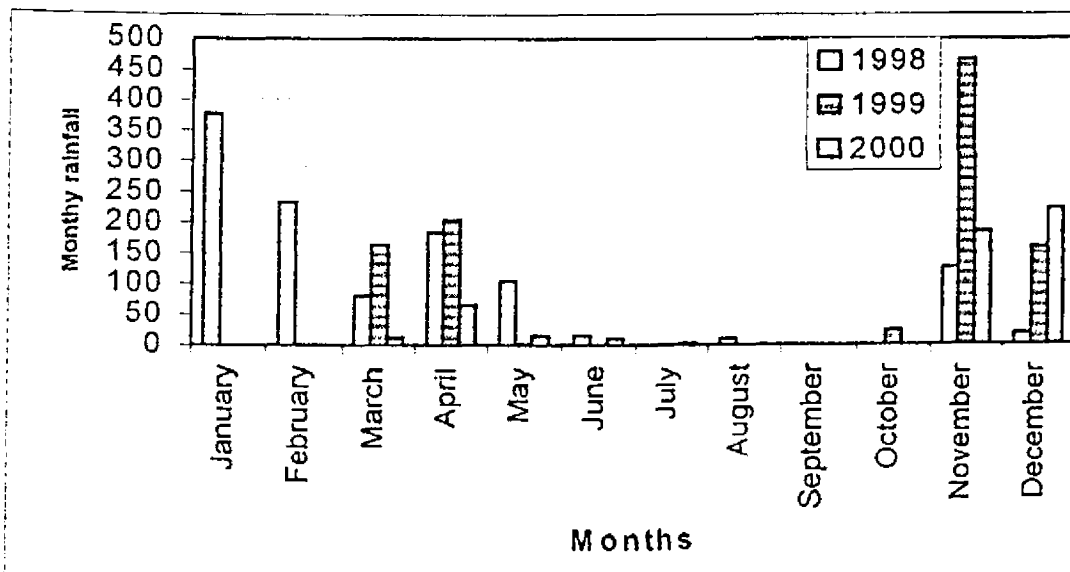
3.4 Climate

Matiliku is generally a semi-arid zone with poor unreliable rains, which heightens the water crisis. The rains are varied to the extent that the typical good seasons are

interspersed with extremely dry spells. Variation in the outset of rainy season adds to the difficulty of ensuring adequate ground water replenishment and storage of surface flow.

The rainfall in the region varies with significant variation in distribution. The rains do not follow the conventional regime of long rains coming in March – May and short rains coming in October - December season. Instead the March to May rains are short and unreliable, while the October to December rains are longer, sometimes extending up to January. The amount of rainfall per year is specifically between 500mm to 600mm but characterized by poor distribution. Figure 3.1 shows recorded rainfall data of the study area for the 1998-2000 periods. The mean annual rainfall is erratic shifting from 84.7mm to 43.0mm in 1999 and 2000 respectively, except in the year 1998 with a mean annual rainfall of 95.7mm. This was as a result of the effects of *El Nino* phenomena that were experienced in the whole country.

Figure 3.1 Monthly Rainfall during the 1998-2000 period



Source: (Field Survey 2000).

The study area just like the rest of the district experiences high temperatures during the day and low temperatures at night. The temperatures range from 26^oc to 17^oc respectively. During the month of June and July, the area experiences cool temperatures while the month of February is the hottest month in the region. Due to high temperatures in the day, which necessitates high evaporation rates within the area, and further compounded with the erratic nature of the rainfall accelerates the water scarcity in the study area.

3.5 Land use pattern

The area lies in both medium potential and lower potential agro-ecological zones. Crop farming is the main agricultural activity though small-scale animal husbandry is practiced especially in the lower potential agro-ecological zones. A reconnaissance of the study area revealed that much of the area is cultivated with the exception of planted Nzai and Makuli forests and areas of bare rock and steep slopes in the Twaa hill. Cultivation along river valleys leads to high rate of erosion hence brown water during rain season and large masses of sand along riverbeds.

Cultivated crops include among others maize, pigeon peas, cowpeas, and sorghum. Fruit crops such as mangoes and citrus fruits thrive very well in the area and bananas along river valleys. Irrigation is also practiced in the upper sections of the rivers where crops like French beans and tomatoes and vegetables are grown. There are no mining operations in the study area except for occasional murrum scooping for rural access roads grading. Sand harvesting along riverbeds is practiced but this negatively affects water-rest levels in the streams by lowering the water table.

3.6 History of Water projects in Matiliku

Initial attempts to implement gravity piped water was done in 1972 with the application of extraction of water from Nzau forest for the Nzau water project, later named Kwakisinzi Water Project. This was implemented in 1985 through the efforts of Catholic Diocese of Machakos, who provided funds, construction materials and engineers, while the local community provided labour and locally available materials. The youth especially school children provided labour at specific days in order to speed up the work progress and supply water to schools. The spring had demonstrated a water yield of $1257\text{m}^3/\text{day}$. The method of diversion was gravity pipeline. The water line was extended to Maiani and Nziu market in 1985 and it supplied water to two sub-locations; Kalamba and Nziu. Several schools were provided with water such as Kalamba primary and secondary schools, Nziu primary and secondary and Malooi primary school. Water was provided through water kiosks and no individual connections were to be installed according to the original design. However today water is supplied through 91 individual connections and 11 water kiosks.

In 1987, the line to Nziu market from Kisinzi water project was disconnected due to regional differences. As if in response to this, another spring at Makuli forest was surveyed. With the assistance of World Vision International (WVI), the Ikomba water project was implemented in 1990 to supply water to the residents of Nziu sub-location. The spring had a water yield of $500\text{m}^3/\text{day}$ and was expected to serve a population of over 7000 persons. Water was provided through 8-water kiosks/communal water points of which one is not in use and 60 individual connections. The original Kisinzi line and

water kiosks were connected to the new Ikomba line. During the implementation of the project, WVI provided funds and necessary materials while the Ministry of Water officials did the design and technical work. The local community provided labour and other locally available materials. The progress of the project took a longer period than the expected due to unwillingness of the local people to participate. The local community was induced to provide free labour by the introduction of food for work program after coercion by local administration had failed to work.

In 1986, the inauguration of the Machakos Integrated Development project (MIDP) made more funds available for water development and this saw the implementation of Kilinga water project. Kilinga water project has its source from two springs in Nzau forest, the Nundu and Kilinga springs. Water is provided through gravity flow to sections of Kalamba and Kithumba sub-locations. The two springs have a water yield of 501.12m³/day. The water line was extended to Mathanguni market in 1987, and several schools such as Isambani, Kithumba and Kalaani primary schools. Water is distributed via 16 individual connections, 7 water kiosks, of which 2 are not operational.

Other projects in the division include Ikangavya water project funded by European Union through the MIDP in 1984 and Isololo water project funded by Catholic Diocese of Machakos in 1983. The Isololo spring demonstrated a yield of 1131.1m³/day and was expected to serve 10,000 persons with water. The other gravity fed water projects is the Manooni water project funded by European Union through MIDP to supply water to Matiliku and Kawala sub-locations. It has its water from a dam constructed in the adjacent Mulala Division. A concise summary of the above analysis is presented in the

appendix. This analysis was developed from information gathered from the District Water Engineers' office, Makueni. Map 3.4 presents the current water supply in the study area and the proposed design lines.

MAP 34. WATER SUPPLIES IN MATILIKU DIVISION

37°35'E

37°35'E

TO WOTE VIA
KILALA

TO WOTE VIA
MALIVANI

Maruli forest

NZIU SUB. LOC.

NZIU MNT

IKANGAVYA SUB. LOC.

KALAMBOLECH

KALAMBA SUB. LOC.

MUPENDO MNT

KALAMBA SCHOOL

MUWAN SCH.

KALAMBA LOCATION

MWANII MNT

Nzau forest

KITHUMBA SUB. LOC.

KITHUMBA SCH.

KILILI SUB. LOC.

NZAU LOCATION

KAWALA SUB. LOC.

MATILIKU SUB. LOC.



LEGEND.

- River/ stream
- Supply Intake
- Water Pipeline
- Uncompleted waterline
- Water Tank
- Forest
- Scale
- Water Point

Author, 2000-

37°35'E

3.7 Socio-Economic Profile

3.7.1 Population: Density and Distribution

The division had 6893 households consisting of 38,867 persons according to the 1999 population and housing census. The areas family size is six persons while the population density is 162 per sq km. The population is projected to 47,845 and 58,897 persons by the year 2009 and 2019 respectively. The above population is computed by adopting the province annual population growth rate of about (2.1%) (GOK, 1997). This information is presented in Table 3.2 below

Table 3.2 population projections by location

Location	Area (sq km)	1999	2009	2019
Kalamba	100.2	16,941	20,854	25,672
Kithumba	31.4	5,544	6,825	8,401
Nzaui	62	10,644	13,103	16,129
Kilili	47	5,738	7,063	8,695
Matiliku	240.6	38,867	47,845	58,897
Density (Persons/sq. km)		162	199	245

Source: (Adapted from CBS, 2000).

The above population projections are used to compute water demands for the same populations in the data analysis. The population density varies from one location to another as shown in Table 3.3 below. The varying distribution is associated with

differences in area coverage per administrative area and the population together with variations in resource endowment.

Table 3.3 Population densities by sub-locations

Sub-location	Number of Households	Total population	Area in sq. km	Density
Nziu	1,051	5990	37.9	158
Ikangavya	827	4632	27.4	169
Kalamba	1,104	6319	34.9	181
Matiliku	987	5072	26.7	190
Kawala	957	5572	35.3	158
Kithumba	1005	5544	31.4	177
Kilili	962	5738	47	122
Total	6893	38867	240.6	—

Source: (Adapted from CBS, 2000).

The study area also has other forms of human settlements in addition to the rural households. These include market centres such as Nziu, Upendo, Maiani, Makutano, Kalaani and Kithumba. There are also several education institutions and dispensaries.

3.7.2 Incomes and Income generating activities

An analysis of the population incomes in the study area revealed that 47.7 per cent of the area active populations are smallholder farmers while 22.0 per cent engaged in informal

non-farm activities. Only 30.3 per cent of the region populations are salaried workers. Therefore, about 69.7 per cent of the division's working populations are self-employed.

Food crops are the main agricultural products depended on by majority of the people in the area. These crops include maize, beans, pigeon peas, mangoes, and citrus fruits. It is important to note that in parts of Kalamba, Ikangavya, Kithumba and Nziu sub-locations, oranges are regarded as the main cash crops. Livestock rearing in small scale is also practiced.

In conclusion this chapter has provided an overview of the physical and social economic aspects of the study area. It provides a bridge from chapter one and chapter four (the data analysis), which outlines the research findings about the subject of study as revealed from the sampled population.

CHAPTER FOUR: THE EXTENT OF WATER SUPPLY IN MATILIKU

DIVISION

4.0 Introduction

The chapter introduces the water availability scenario in the study area. It highlights about the sources of water within the projects' catchment areas, the distances covered to water sources, water consumption patterns, and the water supply and demand in the supply area.

4.1 Sources of water

As indicated in the sampling procedure the study set out to interview 100 respondents, out of which 25 respondents acted as a control group of the study variables. The control group comprised of those people falling within the catchment areas of the projects, but was not getting water from any of the three projects. A field Survey revealed the sources of water as indicated in Table 4.1.

Table 4.1 Sources of water

Source	Frequency	Percentage
Individual connection	11	11
Communal water points	5	5
River or stream	21	21
Pond	4	4
Combination of sources	59	59
Total	100	100

Source: (Field Survey, 2000).

Apart from the 25 respondents who acted as a control group and relied on water from traditional sources such as rivers, streams and ponds, the rest (75 respondents) used water from various sources. Of the 15 respondents who were interviewed having ICs in their homesteads, 26.7% revealed that their supplies were irregular and this led to reliance on water from rivers, streams and ponds. This was prevalent in the lower sections of the reticulation lines due to burst pipes and misuse of water in the upper sections. The table also shows that 5% of the respondents relied exclusively on water from the communal water points (CWPs). This unveils that the CWPs were generally not relied on entirely as sources of water due to irregular flows. A combined proportion of those relying on water from more than one source revealed that 59% were in this category, which indicates that relying on one source of water was not possible in the study area due to various reasons as indicated below.

The respondents had divergent reasons for using of water from more than one source. These factors included unreliability and distance among other factors. Table 4.2 is a

breakdown of the reasons.

4.2 Reasons for using water from more than one source

Reason	Frequency	Percentage
Unreliable water supply	53	70.7
Unfair water distribution	5	6.7
Dirty water/polluted	2	2.6
No problem	11	14.7
Total	75	100

Source: (Field Survey 2000).

Table 4.2 reveals that 70.7 % of the respondents relied on water from more than one source due to unreliability of the water supplies, whereas 6.7% of the respondents felt that there was unfairness in the water distribution. A further 5.3% and 2.6% referred to distance to improved water outlets and polluted water respectively as being the reasons for the above phenomenon. Only 14.7% of the respondents interviewed did not experience any problems with the water supplies, hence relied on one water source. These included those respondents who had ICs and had constructed storage tanks, hence could store water for future use in case of breakdowns. Only a few respondents about 3% had indicated that water from the projects especially Ikomba water supply was polluted at times and not fit for human consumption. This led to the use of water from other sources such as the rivers and ponds. The missing 25 cases referred to the control group, which

relied entirely on water from the traditional sources.

The respondents had different reasons for not getting water from the improved water supplies as shown in Table 4.3.

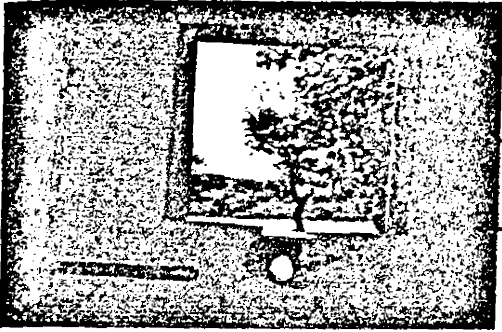
Table 4.3 Reasons for not getting water from the improved water outlets

Reason	Frequency	Percentage
Lack of money to pay for water	11	12.4
Piped water had not reached the village	25	28.1
Water kiosk not operational	11	12.4
River near than water point	15	16.8
Unreliability of the water supply	27	30.3
Total	89	100

Source: (Field Survey, 2000).

From the above data, it can be observed that 12.4% of the respondents were not getting water from the projects due to lack of money to pay for the same, while 12.4% was due to closure of the water kiosks. The two reasons are related to the fact that although not indicated in the table in sections served with water from Ikomba and Kilinga water projects, the respondents were of the view that water should be provided free of charge hence they were not ready to pay for it. This had led to the closure water points by the relevant water committees.

Plate (1) A CWP (kiosk) closed and vandalized for Ikomba water project.



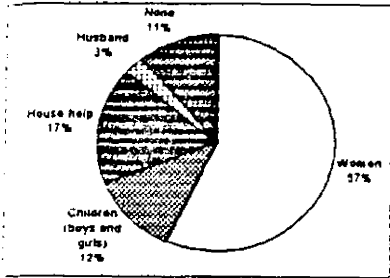
Considering the fact that water was sold at Ksh. 2 per 20-litre gallon or Ksh. 100 per month for those getting water from the water kiosks or Ksh. 200 for those with ICs, one would not have expected such reasons to be stated. Such water fees were

to cater for operation and maintenance of the projects hence the failure to pay was a major drawback to their sustainability. There were also 16.8% respondents whose reason for not getting water from the projects was due to other sources of water being at closer distances than the improved water outlets. The above reasons can be attributed to the failure of creating awareness among the water consumers as to the importance of piped water in comparison with water from traditional sources during the initiation of the water projects.

In Table 4.3, the 12.4% respondents missing included those who relied on only water from the water projects and these involved those who had house connections while the 28% included the control group. There were 30.3% respondents who were not getting water from the project due to unreliability of the water supply from the projects. Failure to act fast in case of burst pipes and poor rationing procedures were the major causes of this phenomenon. The unreliability of water posed a heavy burden on the collectors of water.

4.2 Collectors of Water and Mode of Water Transport

Figure 4.1 Collectors of water

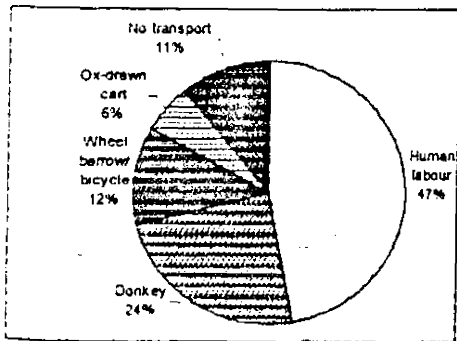


Source: (Field Survey, 2000).

Water collection is part of the daily domestic burden of women and children in Matiliku where they had a combined percentage of 69%. Women alone accounted for 57% while 17% relied on house help. In 3% of the cases,

the men (heads of households) were the collectors of water while 11% were not involved in water collection since they had house connections. This included those who relied on water from house connections entirely. The above Figure 4.1 shows this vividly.

Figure 4.2 Modes of water transport



The collectors of water used various methods so as to deliver water to the respective points of water use. The responses showed that the most important mode of transport used is human labour, which accounted for 47%, while donkey was second with 24%. The use of wheelbarrow or bicycle was also

Source: (Field Survey, 2000).

prevalent whose occurrence was 12%, while the use of ox-drawn cart was 6%. Though not indicated in the table above the men were the main users of the last two modes of water transport. The use of the two modes by men shows that women and children bore

the heaviest burden of collecting water by use of the most tiring modes. This means that since they perform other activities as indicated in Figure 4.3, their performance is likely to be affected. Figure 4.2 shows the distribution of the collectors of water.

The water collectors were also involved in other activities as shown in the Figure 4.3.

Figure 4.3 Other activities performed by water collectors

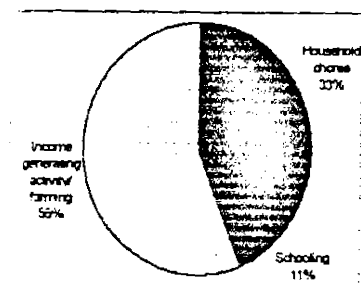


Figure 4.1 depicts a situation whereby women who are the main performers of household chores such as cooking, collecting firewood and caring for the young and the sick are always overburdened.

Source: (Field Survey, 2000).

The category of those who performed household chores occupied 32 %, while those who were involved in income generating activities and farming included 53.9 %. This revealed that drawing of water from far distances, which ranged from 2 to 6 kms, had a heavy toll on the society's economic productivity. This is because the respondents could spend between 2 to 4 hours collecting water. The initiation of the water projects was aimed at reducing the burden of fetching water, but this had not been achieved. This is because out of the 100 respondents interviewed only 11 % of them were not experiencing the burden of collecting water from far distances. This included only those who had house connections and water storage facilities.

4.3 Distances to Improved Water Outlets

The distances to improved water supplies were also a burden. The Government policy on improved water supply stipulates that a household should not cover more than 2-km to a water point. Table 4.7 shows the distances covered to improved water outlets.

Table 4.4 Distance to improved water supply

Distance (km)	Frequency	Percentage
0-0.5	35	35
0.6 - 1 km	10	10
1.1 km -2 km	17	17
More than 2 km	38	38
Total	100	100

Source: (Field Survey, 2000).

Table 4.4 shows that even with the implementation of the rural water supply projects the distances covered to improved water outlets were beyond the Governments reasonable distances. This is because 38% of the respondents covered distances exceeding 2 kms to improved water outlets. It was 35 % of the respondents who covered distances between 0-0.5 kms. This category was composed of those who had ICs and those who had dug shallow wells in their domiciles. The remaining 27% covered distances to water points that were within the reasonable distances.

Even with the scenario in Table 4.4, the respondents had to depend on water from more

than one source due to unreliability of the water from the improved the water outlets among other factors. Apart from 14.7% of the respondents, the rest covered distances to other water sources as shown in Table 4.5.

Table 4.5 Distances to other alternative water sources

Distance in Km	Frequency	Percentage
0 - 0.5	20	22.5
0.6 - 1	12	13.5
1.1 - 2 km	12	13.5
2.1 - 4	37	41.5
4.1 - 6	8	9.0
Total	89	100

Source: (Field Survey, 2000).

Table 4.5 shows that due to unreliability of the water supplies and other factors like lack of money to pay for water, the distances to alternative water sources were further beyond 2 kms as stated by 50.5% of the respondents. Slightly over half of the respondents covered distances beyond the reasonable distance due to poor designs and unreliability of the water supplies. This is because the water points were not 2 kms apart. Some were 1 km while others were 3-4 kms apart.

The above statement can further be supported by what was considered unfavourable about the main sources of water as shown in Table 4.6.

Table 4.6 Problems of the main sources of water

Response	Frequency	Percentage
Unreliability	24	24
Distance & unreliability	28	28
Distance	4	4
Taste and colour	16	16
Distance, colour, taste	20	20
Not applicable	8	8
Total	100	100

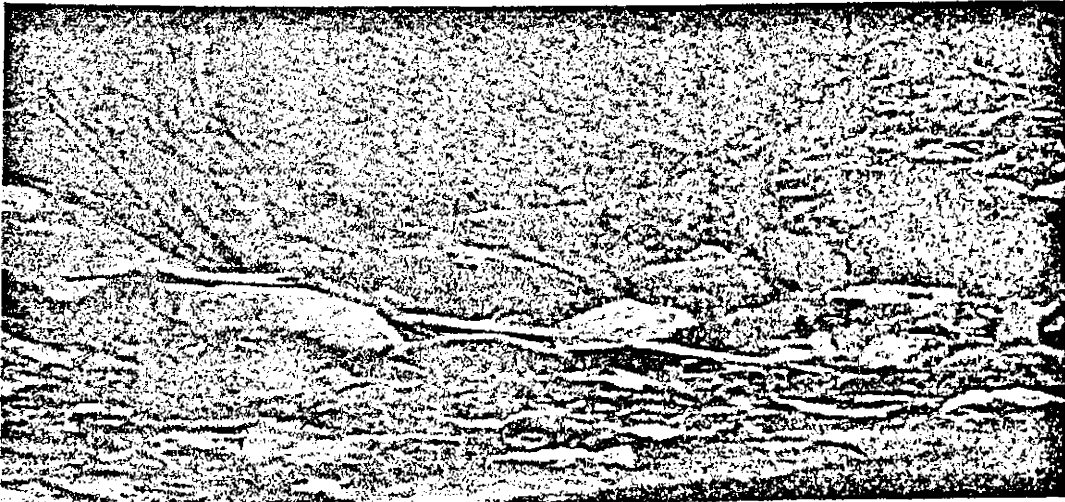
Source: (Field Survey, 2000).

Table 4.6 shows that distance and distance and unreliability combined posed a threat to 52 % of the respondents. Distance, colour and taste were reported by 20 % of the respondents. Distance as a problem is related to design of the projects. This is because it reflected that the distances covered to water points were far apart beyond 2 kms. Colour, and taste was a problem stated by those respondents who had observed cases of turbid water especially if pipe bursts were not repaired in time. In other instances the water intakes were not well protected hence solid substances could enter the reticulation system.

Plate (2) The water intake of Ikomba water project with its source completely covered with undergrowth.



Plate (3) The water intake at Kisinzi water project covered with a wire mesh and supported with block of stones.



In other instances, some of the water tanks had been neglected and started to rot as shown in plate 4.

Plate 4 A "rotten" water tank for Kilinga water project.



Figure 4.3 shows that even though the water supply projects were implemented to reduce the drudgery of fetching water and improve on the areas socio-economic status, the collectors of water had other responsibilities. Water collection interfered with the collectors programs hence they had the opinion that they would be involved in the following activities if they spend less time as shown in Table 4.7.

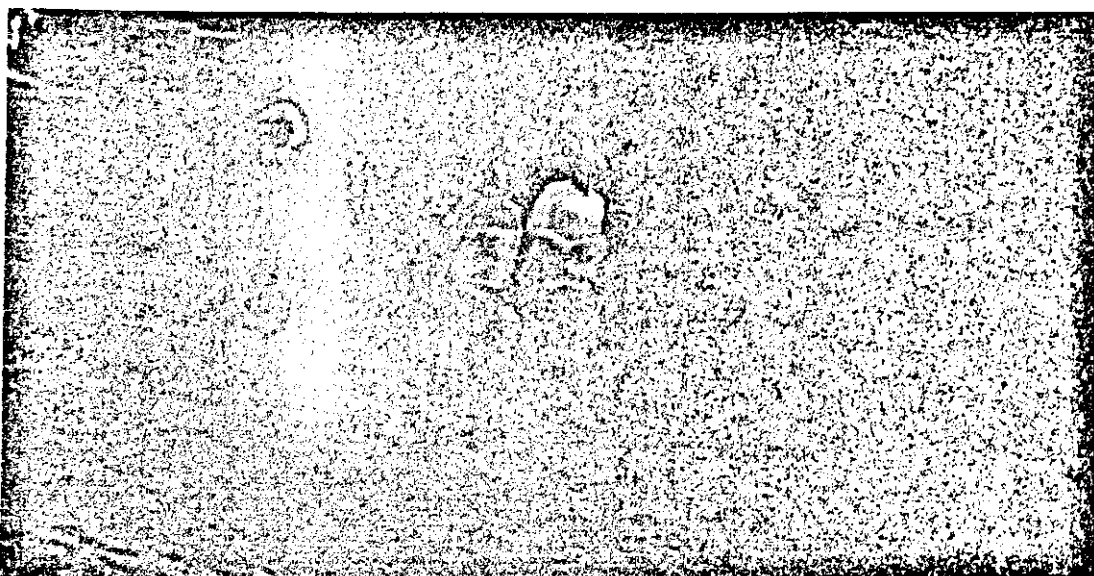
Table 4.7 Activities to be performed if the respondents spend less time in collecting water

Activity	Frequency	Percentage
Productive work	58	58
Leisure	18	18
Studying	8	8
Not applicable	16	16
Total	100	100

Source: (Field Survey 2000).

Table 4.7 reflects that 58 % of the respondents would be ready to spend the saved time in directly productive activities like farming, business; while 18 % felt that duty of fetching water was tiring hence any improvement would enable them to rest or visit friends. School going children were also part of the water collectors. Water drawing interferes with the educational programs.

Plate (5) School children going for an errand to the river to collect water



These children felt that if water was always available in their schools and homes they would utilize the time for studies.

4.4 Water Supply and Demand

The water supplies from the three projects had the following yields and distributed through ICs and CWP's as shown in the Table 4.8.

Table 4.8 Water supplies, yields and mode of distribution

Water project	Yield (m ³ /d)	Mode of distribution	
		ICs	CWPs
Kisinzi	1257	91	11
Ikomba	500	60	8
Kilinga	501	16	7
Total	2258	167	26

Source: (Field Survey, 2000).

Table 4.8 presents how water is supplied to the beneficiaries of the water projects. Each of the three projects was expected to meet water demand of specific number of people as shown in the Table 4.9.

Table 4.9 Domestic water demand for region served

Water Project	Population served (2000)		Water demand (m ³ /d)		Total demand (m ³ /d)	Projects yields (m ³ /d)
	ICs	CWPs	ICs	CWPs		
Kisinzi	510	5809	25.5	145.2	170.7	1257
Ikomba	336	5654	16.8	141.4	158.2	500
Kilinga	90	5454	4.5	136.4	140.9	501
Total	936	16917	46.8	423	469.8	2258

Source: (Field Survey, 2000).

In order to compute the water demand in the study area the researcher adopted the 1999

population and housing census results for the region. To compute the water demand, the standards set by the Water Resources Assessment Study by the Ministry of Water development in the area were adopted. According to the standards, people served by a CWP are expected to consume 25 litres of water per capita per day; while those served by ICs, consume 50 litres per capita per day, the researcher computed the water demand in the region. It was also assumed that each IC was serving one household with water and the average household size in the region of 5.6 persons was used to compute persons served by each form of water supply.

It is also assumed that water was only used for domestic purposes, which includes drinking, washing and bathing, watering animals while irrigation of crops is not included in the above computation. From the above table it can be observed that all the three water projects had water yields that could meet the daily water demands in the region.

The total domestic water demand is $469.8 \text{ m}^3/\text{day}$, which is far below the combined water supply of $2258 \text{ m}^3/\text{day}$. However, if water demands for the educational institutions in the region served with water from the water projects are included, the total water demand is expected to increase. Table 4.10 shows the water demand for the educational institutions taking in consideration that in boarding schools each student is expected to use 50 litres per capita per day and day schools 5 litres per capita per day according to WHO standards.

Table 4.10 Water demand for educational institutions

School	Population	Demand m ³ /day
Kalamba secondary	350	17.5
Nziu secondary	200	10
Kalamba primary	400	2
Nziu primary	300	1.5
Kitheini primary	250	1.2
Malooni primary	220	1.1
Kalaani primary	250	1.2
Kithumba primary	260	1.3
Total	2230	35.8

Source: (Field Survey, 2000).

Table 4.10 shows that the total water demands for the education institutions are 35.8m³/day. When this figure is included in the domestic demand the total demand would be 505.6 m³/d. This water demand is still below the total supply from the projects with a surplus of 1752.4m³/d. The scenario in the study area is however different since the respondents had to depend on water from more than one source as the water supplies could meet the total domestic water demand.

The study revealed that 59 % of the respondents interviewed relied on water from more than one source. Even those with ICs, water was not available at times since it was only 11 out of the 15 households interviewed who relied entirely on water from the water projects. Over 80 % of the respondents reported to be receiving water once in 2 days and

sometimes the period extending to over a week. It was only 16% of the respondents who relied on water entirely from the water projects. These included the 11% respondents who had ICs and 5% respondents who drew water from CWPs but located near the water intakes. This means the further away from the water intakes the higher the chances of not having regular flow of water. This was attributed to pipe bursts not repaired in time, unclosed taps and practice of irrigation. Such activities meant that water is lost in the system before reaching some of the delivery points.

The study found out that the minimum per capita water consumption for those without ICs is 5.7 litres per day while the maximum is 40 litres per day. The average consumption for the same group was calculated to be 18.3 litres per capita per day. This means that the maximum is above the designed 25 litres per capita per day while the average is below the designed standard for CWPs.

In respect to the Ministry of Water Development, a CWP should serve 480 people. During the time of the study each water project had CWPs as shown in Table 4.11. Using the populations drawing water from the CWPs, the required number of CWPs would have been as computed in the same table.

Table 4.11. The number of CWPs

Water Project	Population served by CWPs	Present No. of CWPs	Required No. of CWPs
Kisinzi	5809	11	12
Ikomba	5654	8	11
Kilinga	5454	7	11
Total	16917	26	34

Source: (Filed Survey, 2000).

Table 4.11 shows that the number of CWPs was less than the required number to serve the current population. Kisinzi water project had 11 CWPs instead of the expected 12. Ikomba water project had 8 CWPs with one not operational instead of the required 11. Kilinga water project had 7 CWPs of which two were not operational, while the required number was 11.

With such a scenario, the CWPs were not at equal distance apart, hence the reason why the respondents had to wait for 2-4 hours and sometimes 5 hours at the water points.

4.5 The Future and Ultimate Water Demand

In order to compute the future and the ultimate water demand, the present water demand calculated in Table 4.9 was adopted and the populations projected for the year 2009 and 2019. The future demand refers to water demand after 10 years while ultimate demand refers to water requirements after 20 years. The water demands for the same periods are calculated as shown in the Table 4.12.

Table 4.12 Future and ultimate water demand

Water Project	Present water demand m ³ /day	Future water demand m ³ /day	Ultimate water demand m ³ /day
Kisinzi	{6319} 170.7	{7779} 207.2	{9576} 252.2
Ikomba	{5990} 158.2	{7374} 192.7	{9077} 235.3
Kilinga	{5544} 140.9	{6824} 172.9	{8400} 212.3
Total	{16.853} 468.8	{21.977} 572.8	{27.053} 699.8

Source: (Field Survey, 2000).

In the above table it is assumed that the households served with water by ICs will not increase, while those served with water from CWP's will increase. The figures in brackets represents the projected populations for the year 2009 and 2019 for each projects' catchment area. Whereas the water yields are expected to be constant, the water demands will increase with increase in the populations. Table 4.12 shows that each of the three projects could meet the respective water demands in their catchment areas if water is not lost within the system. The above computed water demands however do not include the institutions water demand.

4.6 Per Capita Water Consumption

According to the Water Resources Assessment study by the Ministry of Water Development, people served by communal water points (water kiosks) are expected to consume 25 litres of water per capita per day. Those served by ICs are expected to consume 50 litres per capita per day. While it was not possible to calculate the exact amount of water consumed per day by those people in the study area having ICs the same

also applied for those who collected water from the water points. This is because non-of the two were metered.

From the study it was found out that an average of 5.6 persons consumed an average of 109.9 litres per day. This makes per capita consumption per day to be 19.6 litres. This is on the assumption that all the water drawn is used for domestic purposes, which doesn't include watering animals or irrigating crops. Consumption rates were however found to range from 40 litres per household of 7 persons, which makes the lowest per capita consumption per day to only 5.7 litres to 160 litres in a household of 2 persons hence a per capita consumption of 80 litres per day. This shows that the highest consumers of water from the ICs consumed water over the expected 50 litres per capita per day. However for those people drawing water from the CWP's they consumed less than the expected 25 litres per capita per day (18.3 litres).

4.7 Determinants of Per Capita Water Consumption

From the field Survey, generally four factors affected the amount of per capita water consumption. This was found to be a function of the following attributes.

(a) Distances and convenience

The collectors of water in Matiliku Division spend more than one hour or even 5 hours per day fetching water. On average, the distance between homesteads and improved water outlets was 2.09 km, and 2.17 km to other alternative water outlets. From the analysis of distances to improved water outlets in Table 4.4, 38 % of the distances exceeded 2 km and ranged between 2 and 6 km. Therefore 62 percent of the respondents

were covering distances below 2 km. However, these distances increased due to reliance on water from alternative sources, which was attributed to irregular flows of water from the improved water outlets.

Table 4.5 showed that slightly over 50% of the respondents were covering distances more than 2 km and 49.5 % of the respondents were within reasonable distances to other alternative water outlets. Observations confirmed that there was a significant relationship between the distance to water source and the per capita water consumption in the study area. Consumption per capita decreased as distance increased towards the 6-km distance, which was the longest distance covered by the respondents in the study as shown in the following table.

To come up with the above deduction, a simple linear regression statistical technique was used. The noted distance ranges from 0 to 6 km while per capita consumption were determined using individual household sizes. These ranged from 5.7 to 80 litres per capita per day.

Table 4.13 is an arrangement for statistical application.

Table 4.13 Distance versus water consumption

Distance km	Per capita consumption (l)
0	39.9
0.03	8
0.05	30
0.1	21
0.2	28
0.3	19
0.4	16.2
0.45	15.7
0.5	18.4
0.6	24
0.7	12
0.8	32
0.9	26
1	13.2
1.3	13.3
1.5	11.6
1.7	10
2	18.7
3	18.4
4	18.4
5	16.5
6	13

Source: (Field, Survey, 2000).

The multiple linear regression equation attained from the above data was $Y = 25.24 - 1.93x$ whereby "Y" represents the per capita water consumption and "x" represents the distance. The slope from the equation represents a negative relationship. The slope term (-1.93) indicated that, for each additional kilometre to water outlet in use, a predictable decline in per capita water consumption of about 1.93 litres followed. Therefore, an increase in distance was followed by a decline in consumption. A regression for distance and the amount of water consumed per household showed that there is no significant relationship between distance and the amount of water consumed at 0.05 significance level since the computed F-Test of 0.009 is less than 0.05.

A further analysis however indicated that the water consumption pattern was not exclusively a function of distance. The calculation of the Pearson's correlation ($r = 0.1955$) and consequently the coefficient of determination ($r^2 = 0.0382$) showed that only 3.82 percent of the variability in the per capita water consumption were influenced by distance. Therefore 96.2% of the variation in per capita water consumption was not explained by the distance phenomenon but could probably be explained by other factors such as household size, water-consuming activities, restrictions in water use and character of water supply.

(b) The character of water supply

General observation showed that for parts without piped water supply, less than 10 litres per capita per day was common. The commonly used quantity was 13.3 litres per capita per day. However, the figures for those with ICs or within easy access to improved water outlets ranged between 12.5 to 80 litres per capita per day. It can thus be concluded that

areas utilizing waters from improved sources in the study area had on average a relatively higher per capita consumption.

The mode of water transport was also a factor that determined the amount of water consumed. In areas where the respondents relied entirely on traditional water sources and carried water by use of human back, the consumption ranged between 10 litres to 26.6 litres. For those who used ox-drawn carts as the method of water haulage, their per capita consumption ranged between 13.3 litres to 32 litres.

(c) The household size

The average family size in the study area was 5.6 persons or (6 persons). The per capita consumption dropped from about 80 litres in a household of 2 to about 10 litres per capita in a household of 12 persons. From the calculated correlation coefficient of 0.1616 it shows that there was a very weak positive relationship between family size and the amount of water consumed.

A multiple linear regression analysis showed that there is a significant relationship between family size and per capita water consumption at 0.05 significance level as the computed F-Test of 0.091 was greater than 0.05.

A further analysis however indicated that consumption pattern was not exclusively a function of family size. The calculated coefficient of determination (r^2) showed that it was only 2.9% of the variability in per capita consumption, which could exclusively be determined by household size. Although there is no time when user population does not need water, the per capita consumption was affected by other factors.

(d) Water consuming activities and restrictions in water use

Water in Matiliku division was strictly used for domestic purposes. This included washing, drinking and cooking and does not involve watering of animals and irrigation. However, for those with ICs, such practices, which were prohibited, were practiced. Some of these respondents also had constructed storage tanks and water pipes connected to them. Taps are left running thus denying water to people living downstream. A close observation for those with ICs, the per capita consumption ranged from 12.5 to 80 litres with family sizes of 2 to 6 persons. This can be attributed to use of water for other purposes whose water cannot be computed since the water systems were not metered. The respondents also did not give the exact amount of water used for the various activities.

The willingness to pay for water from the improved water outlets also determined the quantity of water one would get from the water supplies. In a section of the region, though the CWP's being nearer than other water sources 12.4% of the respondents claimed to be lacking money to pay for water. This combined with distance limited the amount of water one used in a household, hence low per capita consumption.

Chapter four has highlighted the water supply situation in the study area in terms of the main sources of water, the collectors of water, mode of water transport and distances covered to the sources of water. It has also highlighted the per capita water consumption as well as the water demand and supply in the region.

Relevant works to the study were done by Mathuva (1994) who found out that in Kiteta

Location, in Machakos District, the improved water supply distribution was found to be deteriorating where the schemes output could not accommodate the widespread house connections. The water demand exceeded the supply situation whereby the water schemes were only supplying 3.9% of the regions total water demand. By 1993, the supply was comparatively decreasing because the schemes could only supply 2.3% of the regions total water demand. Distance was found to be a major factor determining the amount of water consumed where by each additional distance kilometre meant a decline in per capita water consumption of about 1.42 litres. Mathuva calls the collectors of water "the drawers" of water, for him water collection was the daily domestic burden of women, and children where the two combined were 90%. The Matiliku case for the same aspect was 69%, which shows that the duty of collecting water was not entirely the responsibility of women and children.

In part Chapter Four has illustrated some of the bottlenecks within the delivery systems such as unreliability, pollution and poor designs. It has also highlighted factors leading to the unreliability of water from the water supplies. The factors are related to how the water projects were initiated through the efforts of various actors. The water consumers were characterized by peculiar attributes such as failure to pay for water and reliance on water from traditional sources even when the improved water outlets were at reasonable distances. However, an in-depth analysis of the issues is discussed in the following chapter with reference to how the projects were initiated designed and implemented. Focusing on the role of the different actors (partners) during the projects planning process will highlight an in depth about these issues.

CHAPTER FIVE: POLICY IMPLICATIONS ON COMMUNITY

PARTICIPATION AND PARTNERSHIP IN WATER SUPPLY SCHEMES

5.0 Introduction

This chapter starts by analyzing the participatory approaches during the projects planning process. The chapter identifies the flaws in the participatory and partnership approaches as applied during the projects planning stages. It finally highlights on the hindrance to the water projects future sustainability in Matiliku Division.

5.1 Community Participation in Matiliku Water Supply Projects

Achieving full and effective community participation in any development project is a difficult job and much depends on the way the local people are approached by those who act as catalysts "the enablers". In an effort to bring out the community participation in the projects, the study set out to understand why the projects were initiated and who initiated the projects, ways of participation, the level of participation and why the community participated in the projects. These five questions are considered essential due to the understanding of typologies of community participation.

From the field Survey, the projects were initiated due to various reasons as shown in Figure 5.1

Figure 5.1 Reasons for the initiation of the water projects

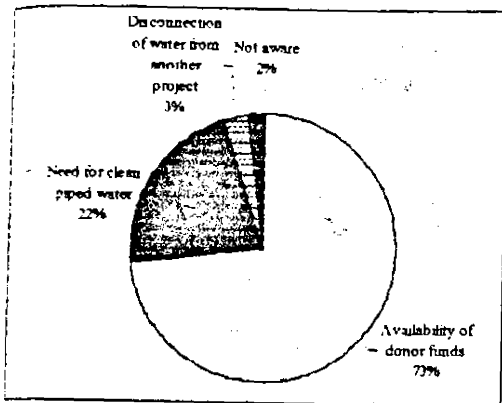


Figure 5.1 shows that 73% of the respondents had the notion that the projects were initiated due to availability of donor funds. This shows that the water projects initiation were not demand driven but supply driven. The donors provided the funds for the implementation of the water projects.

Source: (Field Survey, 2000).

It is only 22% of the respondents who saw the initiation of the projects as being a solution to a felt need. The disconnection of the water line from Kisinzi water project in Kalamba sub-location to Nziu sub-location led to the initiation of Ikomba water project according to 3% of the respondents, while 2% of the respondents were not aware why the project were initiated. This latter category included those who were not living in the study area during the initiation of the water projects.

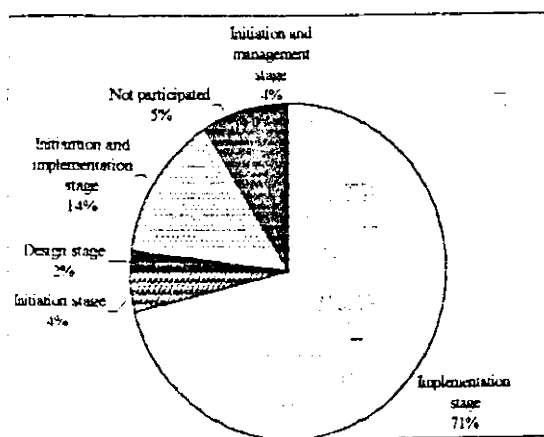
On the projects' initiation, 30% of the respondents had the view that the projects' were initiated by donors and 24% by local administrators while 34% by opinion leaders and donors. On the other hand 12% were not aware on who initiated the projects. These percentages reveal that the local people were not in the forefront during the projects' initiation.

The local administrators were stated as being the initiators of the projects because they were the ones used by the donors to call "barazas" from where the External Support

Agency officials would hurriedly be introduced to the local people about the intended objectives.

During the initiation, design and implementation of the water projects, the facilitators rarely sought the opinions of the local people as shown in Figure 5.2.

Figure 5.2 Stages of participation



Source: (Field Survey, 2000).

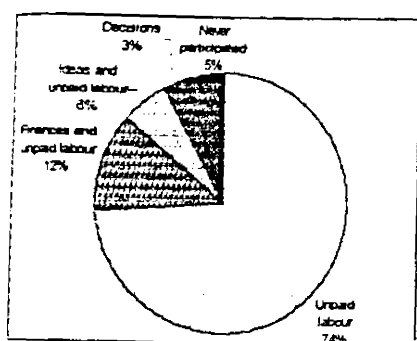
An analysis of when the local people were involved in the project revealed that, 71% were involved during the project implementation, while 4% were involved during initiation. Those involved during initiation stated that the facilitators only sought information

regarding where they could get permanent water sources in the forests. They only sought for directions to such sources. Whereas 2% were involved in design stage, 4% were involved during initiation and management. The latter included those imposed by the outsiders as project committee members. A further 14% were involved during initiation and implementation while 5% did not participate. The latter included those who were not living in the area during the projects planning and those who had declined to participate due to various reasons as will be indicated later. The above data indicates that the local people were only involved in the later stages during the projects planning.

In as much as one may advocate for participation of the people in development projects.

it is important to define the ways of participation. Figure 5.3 shows an analysis of the way of participation.

Figure 5.3 Ways of participation



Source: (Field Survey, 2000).

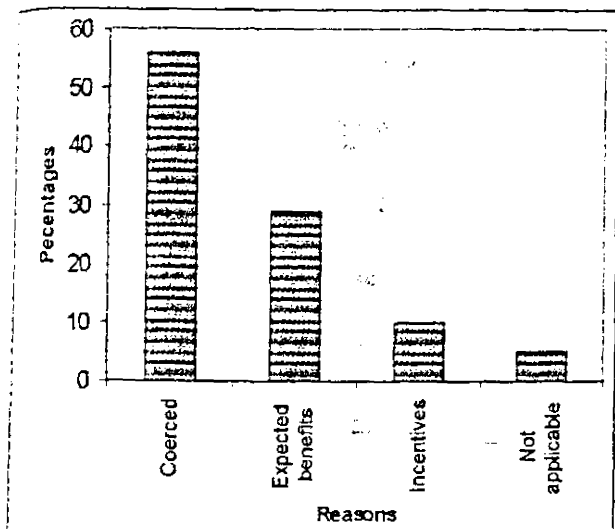
An analysis of this revealed that 74% participated through provision of unpaid labour (mainly in form of unskilled labour and provision of locally available materials). On the other hand 12% participated through payment of finances and unpaid labour, 3% made decisions, 6% ideas and unpaid labour, while 5% never participated in any way. Those who participated through payment of finances and unpaid labour included those who reported to have paid registration fees to be members of the projects' which was a meagre fee of Ksh 5/-. Those who participated by making decisions included a category of local opinion leaders mainly teachers.

The above desegregation shows that there was no active participation by the local people.

Though not all people can lead the above percentage reveal that their participation was merely passive.

The above deduction can be supported by the fact that the respondents had different reasons as to why they had participated in the above ways as shown in Figure 5.4.

Figure 5.4 Reasons for participation



Source: (Field Survey, 2000).

There were 56% of the respondents coerced to provide unpaid labour, while 29% participated due to the expected benefits. The latter category accepted to provide free labour due to the prevailing water problem in the area by then. In contrast 10% of the respondents provided labour due to availability

of incentives in form of food handouts (food for work) and others who were paid for the labour provided especially in parts of Nziu, and Kalamba sub-locations. Part of 5% stated that they did not participate because they never needed food handouts since they had food for their daily requirements. It is important to note that these projects were implemented when there was a severe famine in the area. Food for work was introduced after the coercion had failed to meet the expected objectives. Work had progressed at a slow phase as the people declined to provide free labour. On the issue of coercion, the Chiefs Act was applied to force the local people to provide free labour. The chiefs were thus instrumental in mobilizing the local people to provide free labour.

An analysis of community participation in decision-making revealed that other actors made decisions during the projects' planning. The responses were as follows, 32% by donors, 39% donors and local administrators, 18% donors and opinion leaders, 6% the

local administrators and 5% were not aware.

The percentage for donors and local administrators combined was 71%, which reveals that the local people were only involved in what had already been decided upon. This percentage tallies with the response given by the respondents concerning the level at which they were involved in the projects. The 18% response for donors and opinion leaders as being the main decision-makers referred to teachers especially primary school heads who collaborated with the outsiders as the local people representatives. The same case applied to the local administrators who were key in coercing the local people to provide free labour.

The local people participation in the design was analyzed by inquiring on those who decided on the location of the communal water points (kiosks). The respondents had the following understanding, 8% the donors, 19% local administrators, 13% opinion leaders, 52% technicians as influenced by opinion leaders, while 8% were not aware. Over 90% of respondents' were not aware of the criteria used in locating the water points. A field observation revealed that the water points for the three projects were widely spaced beyond 2 kms apart. The above figures reveal that other than the local administrators and opinion leaders the local people were not involved in the designing of water projects.

The local people have potential that can be exploited for their own benefit if the "enablers" incorporate them in the planning process. If given the opportunity, the sampled population had an idea of what should have been done during the projects' planning process. Of the sampled population 43% felt that they should have been involved in decision making while 35% stated that the communal water points should

have been more than ICs at equidistant. Whereas 12% did not have any idea of what should have been done, 10% reported that they did not understand the new technology on piped water. This depicts that 78% of the respondents had a positive idea of what should have been done to best suit the prevailing conditions.

Rural water supply schemes are normally managed through committees in accordance to stipulated guiding rules and regulations. However, during the initial stages after implementation of the projects the local people were not involved effectively in the selection of the committee members. This is evident since 53% of the respondents reported that the projects' officials were imposed on them.

From the foregoing it can be deduced that the local people were not at the centre stage during the projects planning stages. They did not participate actively in the identification, initiation, design, and implementation of the projects. Though the study shows that they were actively involved at the implementation stage, their involvement was only passive. This is so because they were only involved through provision of free labour, a decision that they were not consulted on but just instructed on what to do. The above approach does not instill a sense of ownership but instead fosters a feeling of resentment by the people concerned. Such resentment was portrayed by activities of vandalism of the project materials. The above discussion also reveals that there was no co-ordination between the local people and the other actors. They were only incorporated in plans, which they did not know their origin and the intended long-term outcomes.

The enablers, never allowed the local people to choose, plan, create, organize and take initiatives. The enablers made all the decisions hence they did not plan with the

community but planned for the community. There was lack of formal working modalities for the different actors involved and a set standard community involvement approach.

Such an approach lacks a point of consensus and commitment in coming up with the ultimate vision between the actors or stakeholders.

5.2 The Role of Local Administrators in the Implementation of Matiliku Water

Projects

The local administration was very much involved directly and indirectly during the projects planning process. This is evident as indicated by 45% of the respondents that the local administrators were the main decision-makers. They formulated the work plans by deciding which days the rural people were to turn up for manual work. They also coerced the locals to provide labour as reported by 56% of the respondents. They were the custodians of the projects' materials as indicated by 80% of the respondents.

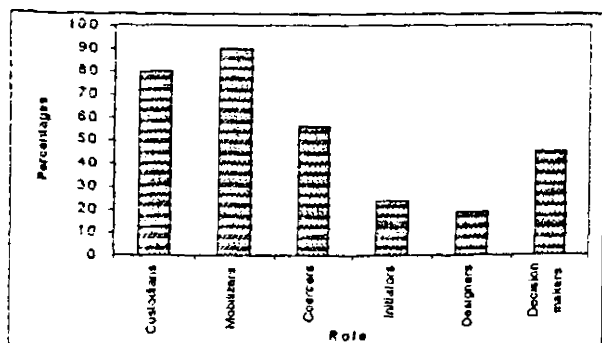
The ESAs or Donors used the local administrators to let people know about the intended projects through convening of meetings. During the implementation of the projects they played a key role in mobilizing public "barazas" aimed at instructing the local people to provide labour. This reflected a negative way of awareness creation. Due to this role, 24% of the respondents had the notion that the local chiefs initiated the projects'.

During the period before 1997 no one could convene a meeting without the local/area chiefs authorization. It was therefore their responsibility to play such a role. They also addressed such meetings. Over 90% of the respondents had come to know about the

projects through such public "barazas". In such a way, the local administrators facilitated community participation. In some cases, work was organized through schools, where by all people with school going children were scheduled for manual duties for specific days. If a parent failed to turn up for labour provision, the pupils/students would be sent home by the local administrators to call up the parents for such duties. They used the Chiefs Act to force the locals to provide labour.

To shed more light on the role played by the local administrators, an analysis of why the respondents participated in the projects had revealed that 56% were coerced, 29 % participated due to expected benefits and 10% participated in order to benefit from incentives provided by the donors such as food. The group that participated due to coercion by the local administrators occupied the largest percentage, hence is can be deduced that they played a direct and indirect role. Their role can also be observed in the design of the projects where by 19% of the respondents reported them as being the major actors in deciding the location of the CWPs. In summary the roles of the local administrators were as shown in Figure 5.6.

Figure 5.6 Roles of local administrators



The prevailing scenario reveals that the local people were only involved in participating in the projects after plans had already been mooted.

Source: (Field Survey 2000).

They were instructed on what to do. For the local community, these local administrators were supervisors, whose instructions could not be questioned.

There was no level playing ground between the local people and the administrators. There was also no co-ordination between the administrators and the local people whereby they could share experiences and exchange substantive information. The local people for instance were not allowed to create their own action groups at the village level on which they could mobilize themselves and act as one group for a common cause.

5.3. Role of External Support Agencies and the Government in the Planning of the Water Projects

Information regarding the role of the ESAs and Ministry of Water was gathered through dialogue with the relevant ESAs officials and District Water Engineer as well as the respondents themselves.

In Kenya, any matter related to the extraction of water for use must be addressed to the Ministry of Water as stipulated in the Water Act (Cap 372). The Act provides rights and apportionment, conservation, water undertakership and regulation of the development of water resources.

5.3.1 Water Act Cap 372

The law governing water resources is currently found in the Water Act (Cap 372) of the laws of Kenya. The Act provides the legal framework within which multiplicity of players may participate in the provision and supply of water. When this Act was enacted

in 1952 and later revised in 1972, water and sanitation provision was by public departments. However, Water Act does not address commercial and private sector participation; though these are alternative modes of management of water resources.

The Act deals with regulatory issues stating the dos and dots but it lacks planning and priority setting mechanism. Whereas in the water policy, *Sessional Paper* No 1 of 1999, the Government intends to involve local communities in all stages of water projects development. It does not stipulate on how the process can be undertaken especially when the process involve several actors that is the government, the ESAs and the local community.

Concerning the apportionment as stated in section 98 and 100 of the Water Act, when water is to be extracted, the community or the people concerned are supposed to apply for water permit from the District Water Board. This board operates at the district level while at the national level we have the National Apportionment board. Before extraction, a permit is awarded which should be renewed after every 10 years. If the water sources are found in the forests, authorization is sought from the Forest Department through the Chief Conservator of forests. For the three water projects discussed in the study, permits had to be applied from the two bodies since they have their intakes in the Nzai and Makuli forests.

This Ministry of Water has specific role to play during the design stage for the projects since the ESAs and the local community do not have technical expertise. The Ministry of Water officials prepare the reticulation plans for the water projects. From the field Survey, 52% of the respondents indicated that the technicians (from Ministry of water)

did the designs of the projects. Over 90% of the respondents also indicated that they were not aware of the criteria used in locating the water points. As regards the operations of the ESAs or NGOs, there was no law requiring them to perform certain functions and not others.

The Ministry of Water is also in charge of ascertaining the water yields per intake as well as ensuring fair distribution of the water resources from one zone to another.

In general, the ministry is in charge of:

- Provision of technical backup services such as design, major repairs and overhauls.
- Monitoring and evaluation procedures (provision of data sheets for effective management)
- Legal supports through the water permit and certificate of registration.

After implementation of rural or community water supplies, the beneficiaries are supposed to register them with the Ministry of Culture and Social Services (MOCSS). However, of the three projects, only one project Kilinga water project was registered with MOCSS. The other two projects, Ikomba and Kisinzi were not registered. The current water committees of the two projects were not aware about such conditions for registration. The MOCSS is supposed to assist the local communities in coming up with by-laws, but unfortunately, it is only Kilinga water project that had such by-laws.

Such a scenario depicts a situation whereby either the local community is ignorant or the ministries concerned have failed to play their roles. It is also a sign of lack of coordination between the local communities and ministries concerned.

The operations of the Ministry of Water and ESAs are sometimes in conflict. Although the ministry does the design for the projects, the ESAs do not involve the ministry in quotation of materials. They are normally secretive as concerns the amount of money they have at their disposal. This in effect depicts of a situation of lack of cooperation between the ESAs and ministries concerned. The ministry officials even demanded payments from the ESAs or Donors for duties played.

The ESAs funded the projects. The funding was through purchase of construction materials and Payment of allowances to the field staff who included the ESAs officials, the Ministry of Water officials and the local people especially those who were paid for work done. They also funded through provision of relief food (Food for work programme) discussed earlier. The Catholics funded Kisinzi water project in 1985, the European union through MIDP funded the Kilinga water project in 1986 and the World Vision International, the Ikomba water project in 1990.

To shed more light as to why the ESAs were the financiers of the water schemes, 73% of the respondents reported that the water schemes were initiated due the availability of donor funds. This leads to the deduction that the water schemes initiation was supply driven.

During the projects planning process, the ESAs were main decision-makers as indicated by 89% of the respondents. This is an indication that the ESAs and Government officials were dominant actors during the above process. The local people or the future beneficiaries were kept at the periphery by the decision-makers. Even though they incorporated a few local opinion leaders (mainly local administrators and teachers), these

did not represent the wishes of the local people.

On implementation of the water projects, it was hoped that they would be handed over to the local people to run and maintain them. However the local people were not trained on all aspects of project management such as administration, finance, operation and maintenance. It was only in Kisinzi water project whereby the first committee members were taken for seminars where by they were trained on the above aspects. The other 2 projects committees were not trained. On the same issue, 88% of the respondents reported that no one was trained on operation and maintenance during the projects' implementation. This reveals that the local people were not aware or were not informed on most of the activities performed by the outsiders, hence not prepared before handing over of the projects.

From the above discussion it can be observed that there was no cooperative working arrangements between the various actors though all were geared towards achieving a common goal. For instance the local people were not involved actively in the project planning process by the financiers while the Ministry of Water and ESAs never operated in unison. As indicated by the Ministry of Water officials, there was suspicion on the operations of the two bodies. The local administrators were used to coerce the people into participating in the projects by providing free manual labour. Although this was expected to be their part of contribution, it was not well elaborated to them by the facilitators. Community participation in such a way is expected to cut costs of the projects but the community misunderstood on the role of ESAs due to lack of open communication. They expected so much from them to the extent that a dependency syndrome was created. This

can well be understood by their resentment to provide free labour on the argument that labour was already catered for in the program. Thus partnership approach cannot be easy if any party is not well informed about its role in a project to undertaken. If it is not well mooted, the implemented projects are likely to have future problems thus threatening the future sustainability of the projects as indicated in the following section.

5.4. Sustainability of the Water Projects

After the implementation of a water projects and handing over to the local people, it is expected to serve them for a long period. However, experience from the three projects studied showed signs of future unsustainability due to challenges of operation and maintenance at the community level. The three projects committees were performing poorly in terms of revenue generation and record keeping. Though the respondents were ready to pay for reliable water supplies as indicated by 70% of the sampled population, the enthusiasm had gone down due to irregular flows of water. The respondents questioned on why they should pay for water that was rarely available. The user charge was not collected efficiently since there were no receipts for recording payments done by the water consumers. An orthodox way of collecting user charge was evident. Though details of the experiences in the region vary, the problems are the same. This was caused by a combination of socio-cultural and economic factors.

The major challenges to community-based operation and maintenance included the following problem of revenue collection. Although 70% of the respondents were ready to pay for a reliable water supply, the other 30% had a problem of contributing towards post construction recurrent costs. Some of the problems identified were unwillingness to pay

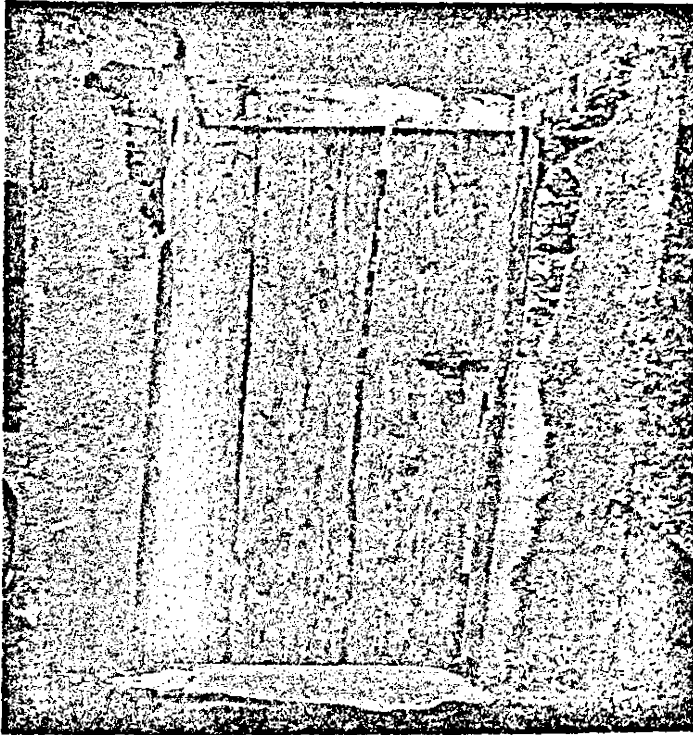
because of mistrust based on experiences of embezzlement and misuse of community funds. These comprised of 8% of the respondents.

Socio-cultural factors also led to the above scenario. The communities since time immemorial have had water as open access and free. The transition from non-payment to payment is a situation they were resisting. This category was composed of 14% of the respondents. This had led to vandalism of the pipelines and CWP's as shown in plates 6 and 7.

Plate (6) A pierced PVC pipe reflecting the rate of vandalism.



Plate (7) A vandalized water kiosk for Ikomba water supply.



Another category of the community members felt that water systems belonged to them since they had put in effort and time in the construction. They did not see the need to continue with contribution. This comprised of 8% of the respondents.

Out of the respondents using water from the three projects, only 53.3% were paying for the water consumed. This posed a challenge to operation and maintenance of the projects due to recurrent costs.

Non-purchase of spare parts was another factor that threatened the water projects sustainability. This was evident for the three projects since worn out parts were not replaced.

Plate (8) A G.I pipe at a river crossing oozing water for Ikomba water supply.

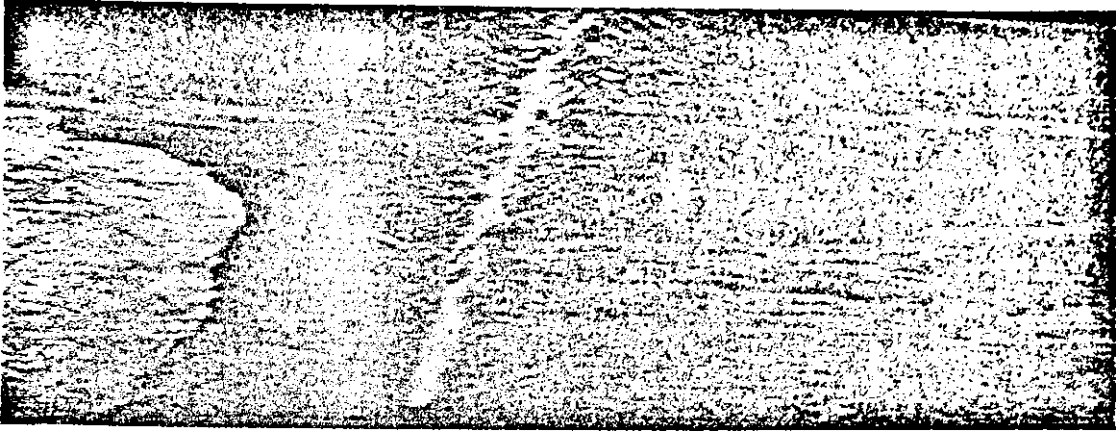
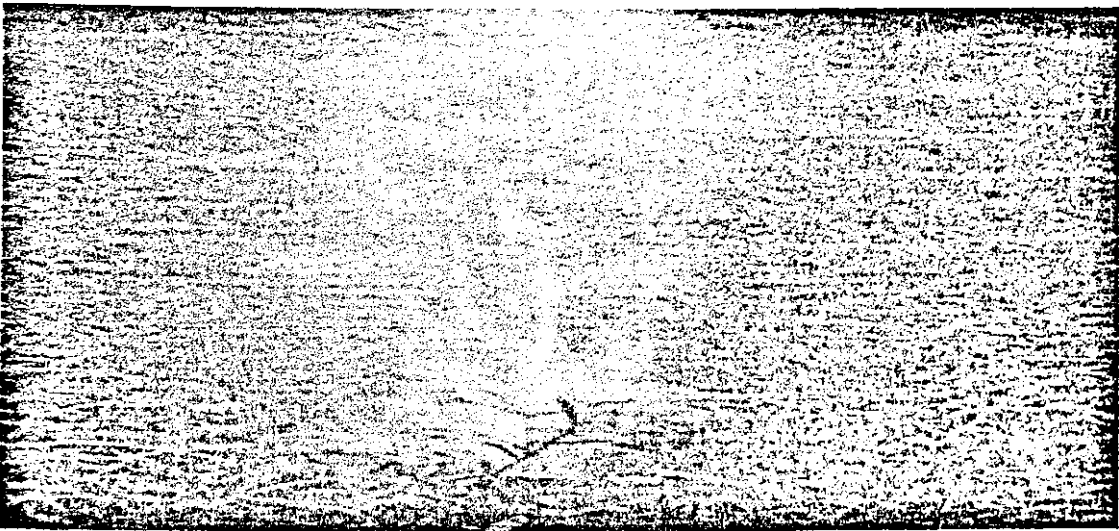


Plate (9) Unrepaired PVC pipe for Kilinga water project.

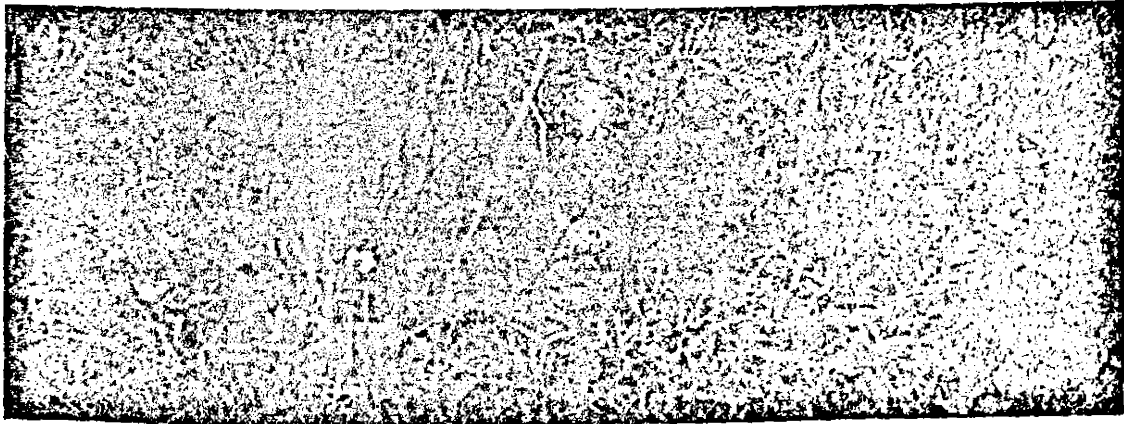


Poor procurement procedures as practiced by the management committees were also evident from the field survey. In cases where spare parts were purchased, the procurement procedures were defective. The spares were quoted at high prices hence leading to misappropriation of the meagre funds collected. This was evident at Kisinzi water project where the only hardware selling the spares was owned by one of the

committee members, who made sure that spares used in the project were gotten from his shop whose prices were extortive. The above three challenges are related to corruption and poor management as stated by 45% of the respondents.

Community participation is not yet fully achieved in operation and maintenance. People from outside the catchment areas attend minor technical problems at times. This was especially evident at Kilinga water project where minor repairs were performed by technicians from Kisinzi water project. There were no people conversant with minor operations and this always led to mass water loss as shown in the plate 10.

Plate (10) A mass of water formed from a burst pipe for Kilinga water supply.



There was lack of user education in water conservation methods and demand management. Some people practiced irrigation as shown in plate 11 while others left pipes running as shown in plate 13 hence leading to high demand in the areas in excess of the original demand and necessitating rationing of the water supplies. In other instances, in case of pipe bursts in pipes leading to ICs were rarely repaired thus leading to more

water loss as shown in plate 12. All the above leads to over 50% of the water being lost in the distribution system.

Plate (11) Illegal irrigation practice at Nziu Sub-location(Ikomba water supply).

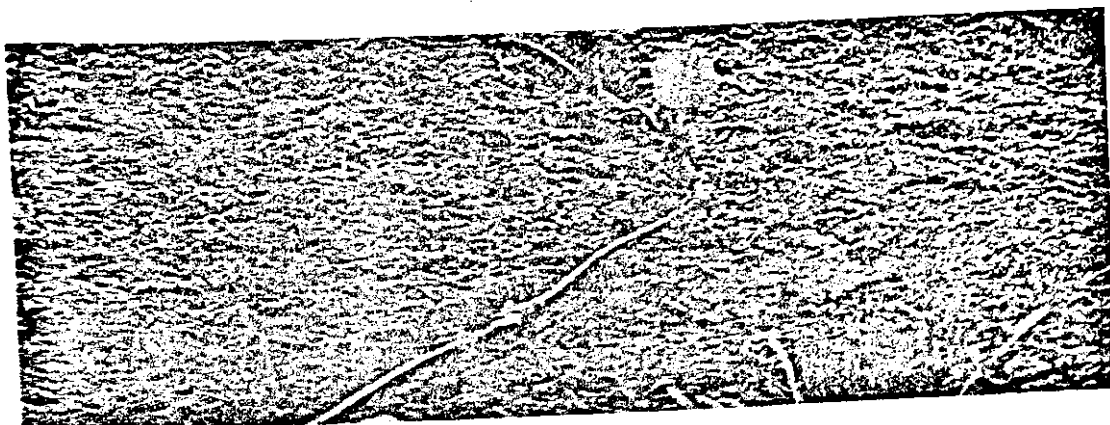


Plate (13) Unrepaired pipe leading to an IC for Kisinzi water supply.

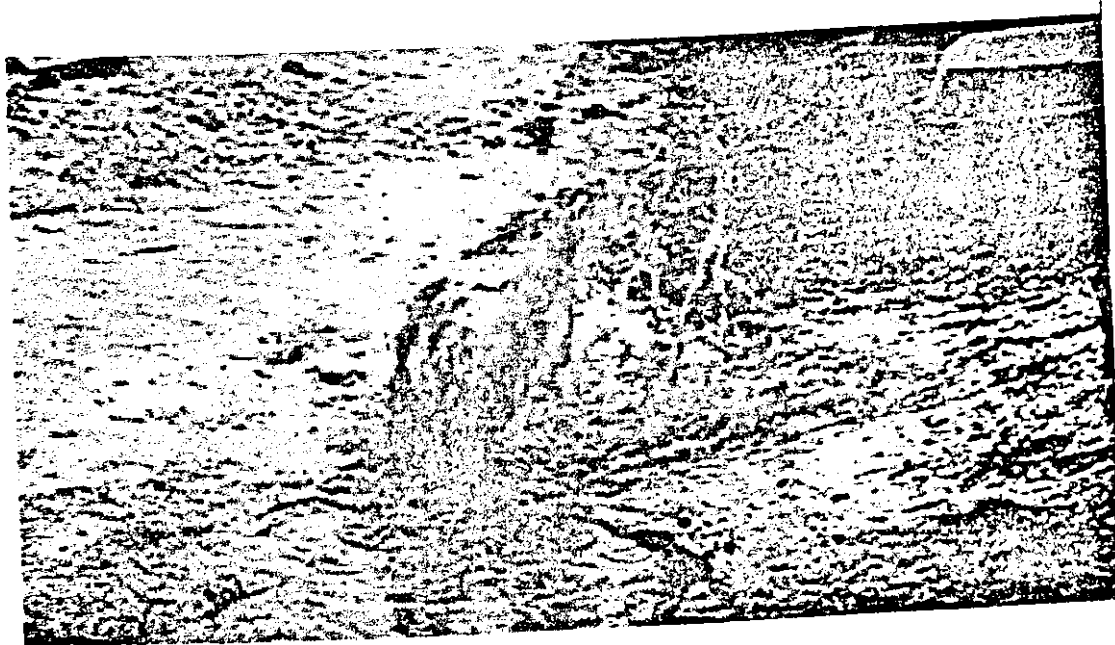
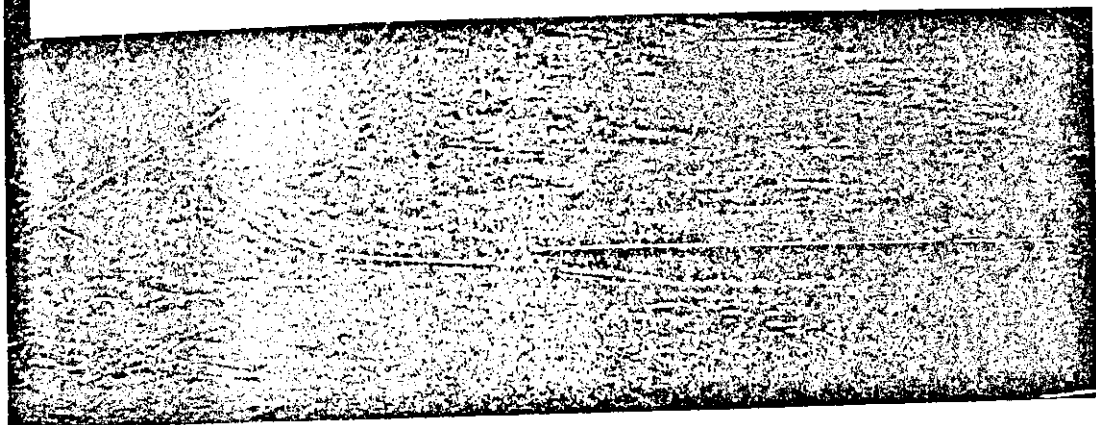


Plate (12) A water pipe left opened at Ikomba water supply.



Poor management characterized the water projects. None of the present committee members had been trained on management aspects. There was also lack of institutional support from the Central Government ministries.

An observation revealed that none of the projects intakes had protective mechanisms. This accounted for dirty water/polluted from the water schemes. The schemes lacked simple treatment works, neither chlorination dossiers nor slow sand filters, hence the water was at times turbid. Even though water flows by gravity other than one sedimentation tank for each of the water projects there were no break pressure tanks, wash out valves and air valves and this led to frequent PVC pipes bursts due to high pressure. At river crossings the nature of technology used was not sustainable because there were cases of pipes being broken by floodwaters.

Chapter Five has provided a focus on community participation and partnerships in the

Rural Water Supply schemes. It has highlighted on the role of the different actors (partners) and how they related with each other. It ends with an analysis of the emerging issues after the projects have been implemented and the outsiders (financiers and government official) have left the rural people to run and manage the water projects. It has been found out that the approaches used during the projects planning process are the main barriers to the success of the rural water supplies in Matiliku. There were misunderstandings and lack of coordination between the various actors hence the failure in preparing the local people on the future running and management of the water projects.

From Chapter One to Chapter Five the problem analysis has progressed from open statements to real manifestations basing arguments on the theoretical framework in chapter two. However, there is need for policy proposals as a guide to alleviate the emanating problems. Therefore, the study cannot be conclusive without giving some guidelines towards the most plausible approach that can be adopted in the planning of rural water supply schemes.

5.5 Summary of Research Findings

The study set out to investigate five objectives. The first objective was to analyze the extent to which the community was involved in the projects. In order to unveil this the study sought answers to five questions, which were as follows: why the projects were initiated, who initiated the projects, ways of participation, levels of participation and why the local people participated in the projects. The study found out that the projects were initiated due to the availability of donor funds. This was the response given by 73% of the respondents. This shows that the projects were supply driven. A further 29% of the

respondents saw the initiation of the projects as being a solution to a felt need, while 2% were not aware as to why the projects were initiated.

The donors as indicated by 30% of the respondents initiated the water projects, while 24% by the local administrators and 34% indicated that donors and opinion leaders initiated the projects. In contrast 12% did not know who initiated the water projects.

On the stage at which the community was involved in the water projects, it revealed that 71% of the respondents were involved at implementation, 4% at initiation, while 14% were involved during initiation and implementation. Some people did not participate as was indicated by 5% of the respondents.

The ways of participation are important in partnership development approaches for they determine a group's contribution. The study found out that 74% participated through provision of unpaid labour, 12% through payment of finances and unpaid labour, 3% made decisions while 6% provided ideas and unpaid labour. On the other hand 5% did not participate in any way. This shows that the participation of the local people was merely passive.

The respondents participated due to various reasons as the field survey revealed that 56% of the respondents were coerced by the local administrators to participate while 29% participated due to the expected benefits. On the other hand 10% participated in labour provision due to the availability of incentives in form of food handouts. A further 5% did not participate. The projects were thus imposed on the local people. They were not given

opportunity to decide on what should have been included in the plan for the water projects.

The local administrators were vocal in organizing *barazas* where the local people would be instructed on what to do. The use of local administrators as main agents to bring people into participation reflected a negative role of awareness campaigns. The local people had to be coerced to provide manual labour and yet the water projects were to benefit them. The use of coercion has negative implications since at present with the change in the constitution whereby the chiefs Act was changed and they can no longer coerce people: cases of vandalism and theft of the project materials are evident. There is no feeling of ownership of the projects by the local people. Poor management characterized by poor procurement procedures, non-purchase of spare parts and lack of attendance to breakdowns are common phenomenon.

The second objective was to assess the organizational capacity in partnerships to handle rural water projects. This is aimed at analyzing how the actors' i.e. the local community, the ESAs, and the Government related with each other during the planning of the water projects.

For the local people the ESAs officials were foreigners (the Mzungu) introduced to them by the local administrators (chiefs and sub chiefs). The chiefs would hurriedly convene meetings and haphazardly introduce the ESAs officials to the local people about their mission and in the same way instruct them on the role to play. The chiefs applied coercion upon the local people to play their stated role. This means the local people were not motivated into action in order to improve their own situation. Their participation was

therefore not voluntary, hence the approach used failed to activate them to work in cooperation with the ESAs and the Government.

The relationship between the actors in the partnership development approach was not collaborative. Each party was out for gain and conflicts were evident. The Ministry of water staff performed the technical part of the projects but only after being motivated by payment of field allowances. The ESAs staff and Ministry officials always operated in suspicion especially as regards to bill of quantities. The local people provided labour as a last resort in fear of punishment or due to expected benefits (wages) and incentives (food). The lack of coordination between the actors can further be indicated by the failure of training the local people on projects' management. This is derived from the response given by 88% of the respondents that the ESAs and Government staff never trained the local people on for instance operation and maintenance (capacity building). Such a flaw in the partnership approach adopted by them is reflected by the present status where people from outside the projects' catchment areas attend minor technical problems. It can also be deduced from the lack of by-laws for 2 of the studied projects (Ikomba and Kisinzi) that can guide on the activities of the water consumers. Such by-laws are supposed to be agreed upon by the affected people through the assistance of the MOCSS officials. It can be argued that the lack of by-laws, which can be enforced, had led to some of the observed activities such as irrigation and non-payment of water fees. This is related lack of formal and binding contract between the actors. The plans for water projects were not as a result of a shared vision of all the stakeholders but each party operated to achieve own ends.

The third objective was to determine the institutional roles of the actors in the water development process. The implementations of the Matiliku water projects were the efforts of three parties, i.e. the Government through the local administration and Ministries (MOWD and MOCSS), the local community and the ESAs or NGOs.

The Catholic Church funded the Kisinzi water project; World Vision International funded the Ikomba water project and the MIDP funded the Kilinga water project. The funding of the projects led to the initiation of the three projects as was indicated by 71% of the respondents.

The MOWD prepared the designs for the projects as indicated by 52% of the respondents. The local administrators played the role of mobilizing the local people to participate in labour provision. However this mobilization role was poorly performed for they coerced people to participate as was indicated by 56% of the respondents. Such percentages for the sampled population are inferred to the rest of the population hence the coming up with the above deductions.

Once projects are implemented, the MOCSS is supposed to guide the water consumers in coming up with by-laws. However, it was only Kilinga water project that had such by-laws. This depicts an institutional failure that has far reaching repercussions for the water projects if they lack reinforcement frameworks. It is such by-laws that govern the activities of the water consumers.

The donors and the local administrators were stated as the main decision-makers during the planning of the water projects as stated by 71% of the respondents. This shows that

the local people were not given an opportunity to decide on what should have been included in the plans. This is further depicted by the inclusion of only a few opinion leaders (teachers) in decision-making as was reported by 6% of the respondents.

The fourth objective was to assess the factors that hinder the sustainability of Matiliku water projects. These hindrances are related to the way the projects were initiated, designed and implemented. The local people were involved in the projects after they had been planned, i.e. at the later stages of the projects (at implementation). At the implementation, the local people were only instructed on what to do. This is inferred from the percentage that indicated that they were involved in the projects at the implementation stage where by their participation was through the provision of labour as was indicated by 74% of the respondents. The labour was however provided under duress as was indicated by 56% of the respondents or due to the availability of other incentives that motivated 39% of the respondents. Such an approach does not foster peoples identification with the projects.

Another flaw in the way the projects were planned for is the failure to train the local people on the projects operation and maintenance. User education is also important because piped water is a new technology for people who have been used to relying on water flowing from rivers. The study found out that there was no such training as was reported by 88% of the respondents.

The study revealed that the water supplies had yields that could meet the present, future and ultimate water demands ($505.6\text{m}^3/\text{d}$; $572.8\text{m}^3/\text{d}$; $699.8\text{m}^3/\text{d}$) respectively, but non-of the water projects was operating to its capacity. Unreliability of water was the most

critical problem cited by 71% of the respondents. Such unreliability was attributed to failure to undertake operation and maintenance aspects. These were rarely done as shown in plate number 10. The study found that nearly 60% of the water was lost in the system before reaching points of delivery. Worn out parts were not replaced as shown in plates 8 and 9.

There was lax in collection of user fee and if ever collected, it was not done in accountable manner for instance there were no receipts for any of the three projects.

The unreliability of the water supplies had led to unwillingness to pay for the water. This is because although 70% of the respondents were ready to pay for a reliable water supply, the willingness had waned out. There were 30% of the respondents who were not ready to pay for the water due to factors such as claims of embezzlement of funds (8%); while 14% wanted water to be provided as a free commodity. There was a further 8% of the respondents who felt that water should be provided free of charge since they had provided free labour during the implementation of the water projects.

The lack of operation and maintenance funds was evident for the three projects since 47% of those using water from the projects were not paying for the water they consumed. This was a threat to the projects future sustainability due to lack of funds to meet recurrent costs

The last objective was to assess the effect of distance to improved water supply on water consumption. The following were evident from the study: the distances to improved water outlets ranged from 0 km to more than 2 kms. The populations for those covering

distances exceeding 2 kms ranged between 2 to 6 kms. The capita water consumption for those with ICs ranged from 12.5 to 80 litres per day. Using simple linear regression analysis a change in distance by one kilometre to a water outlet reflected a predictable fall in the per capita water consumption of 1.93 litres per day. However the distance factor could only explain 3.82% of the variability in consumption.

By taking a significance level of $\alpha=0.05$ and the computed F-statistic of 0.009 the Null hypothesis (H_0) that there is no relationship between distance and the amount of water consumed is accepted because the computed statistic is less than 0.05. This decision is arrived at as the study shows that the amount of water consumed cannot be determined by the distance phenomenon alone but by a multiplicity of other factors.

A qualitative analysis indicated existence of other factors as explaining changes in water consumption. These factors included the character of water supply, the household size and the water consuming activities.

The study revealed that for parts without piped water supply, less than 10 litres per capita per day was common, while for those with ICs the consumption was as high as 80 litres per capita per day. This leads to the deduction that areas utilizing waters from improved sources at close distances had a relatively higher per capita consumption.

The size of the household also determined the capita water consumption. From the calculated correlation coefficient of 0.1616, it shows a weak positive relationship between the family size and the amount of water consumed. The household size could only explain 2.9% of the variability in per capita consumption. However a regression

analysis showed that there was a significant relationship between family size and the per capita water consumption at 0.05 significance level as the computed F-test of 0.91 was greater than 0.05.

6 Policy Implications

Analysis of the water demand and supply from the study revealed that the present current and ultimate water demand could be met if the yields for the three projects could be harnessed and distributed effectively to the user population. For instance the present water demand of $505.6\text{m}^3/\text{d}$ could not be met while the projects had total yields of $258\text{m}^3/\text{d}$. Such a scenario means that over 60% of the water was lost in the reticulation system through burst pipes, unrepaired parts, vandalism, practice of irrigation and water wastage through unclosed taps. The user population depended on more than one source of water for domestic purposes. This comprised of 59% of the respondents. Unreliability of water supply was the main reason indicated by about 71% of the respondents as the cause of the state phenomenon. It was only 16% of the respondents who relied entirely on water from the water projects.

The distances covered to the improved water supplies revealed that 38% of the respondents covered distances beyond Kenya's stipulated reasonable distance. In addition owing to unreliability of the water from the water projects, the dependency on water from other sources led to the covering of distances beyond 2kms as indicated by about 51% of the respondents.

A further analysis as to why the respondents were not getting water from the projects revealed a contradictory scenario. Taking note that the study had 25 respondent as control group which included those who were within the catchment areas of the projects' but not using water from them, 12% of the respondents stated that the CWPs were not operational; while 17% stated that the other sources of water were closer than the CWPs whereas 30% opted to rely on the other sources due to unreliability of the improved water supplies. All these responses are a manifestation of the use of supply driven approach. The beneficiaries of the projects participated at the implementation stage as indicated by 71% of the respondents. The projects were initiated due to availability of donor funds as stated by 73% of the respondents. Coercion was used to ensure that the local people participated in the projects as stated by 56% of the respondents; while 39% participated due to provision of incentives inform of food for work and other payments.

None of the projects had adequate number of CWPs and had passed their first phases. Kenya's Rural Water supply policy advocates a single CWP should serve 480 persons (or 80 households). However this was not the case in Matiliku since one CWP was serving between 560 to 700 households. In addition the water points were not operational and on the verge of been labeled as white elephants.

The study was carried in the year 2000 that was the year when policy makers and implementers had set for he realization of water for all. The revelations of the study demonstrated absence of commitment as water" was gong away from the people". The prevailing scenario in the study area is as a result of the approach adopted in the planning of the water projects. There was no coordination between the various actors i.e. the

Government, the ESAs and the local community. However the following explains on the policy implication from the study.

3.7 Institutional Challenges

The success of the Matiliku water projects depends on the behaviours and attitudes of the decision makers during their planning. The level at which the community is involved in the planning process for projects is very critical if the community will maintain the projects. The study revealed that the local people are involved at the last stage i.e. implementation. The notion that educated professionals may have something to learn from the "uneducated" and "illiterate" is still share hearsay for some. As many have not been trained to put views of local communities before considering their own potential contribution, training and reorientation is essential.

This means that projects funded by ESAs in partnership with Government calls for greater emphasis on training in communication rather than technical skills. Outside professionals must learn to work closely with colleagues from different agencies and local people. Judgement and interpersonal skills should be cultivated through the adoption and use of participatory methods.

For the studied projects the roles assigned to the community included carrying of pipes, digging trenches, and performing other unskilled construction tasks. The thinking part (Surveying, planning and design) was done entirely by technicians from the MOWD.

The belief that labour construction will increase the people's identification with the system being built and maintain it in order good order is wrong. This was evident because

the rate of vandalism and mismanagement of the water projects. The interest in using and sustaining the facilities had died after a while since the projects were performing below their capacity.

3 Enabling Policies for Local Action

The success of projects to be maintained by local people hinges on promoting socially differentiated goals in which different perspectives and priorities of the community members; the Government and ESAs can be negotiated. Signed agreements between the actors can promote responsible and accountable interaction. This is prompted by the fact that project designers tend to concentrate on three of its elements; local leadership, local communities and locally recruited maintenance volunteers. The assumptions for these are

- Winning over local leaders will help to legitimize the projects.
- Water committees will be able to manage and monitor local contribution and water usage.
- Through training of local aides, technology can be transferred to community.

However the criteria has not been plausible in the Matiliku case. The activity that involves different actors calls for the drawing of a more formal and binding contract as well as commitment. Such a contract should spell out in detail what roles and responsibilities apply to each partner in the project.

The constituting of local committees should neither be hurriedly conducted nor imposed as this wanes away the trust of the people. It also runs the risk of the best representative not being nominated. This calls for open and democratic election.

At the local level, the key activity that will guide the operations of the beneficiaries and management committees should be the establishment of local rules (by-laws that are collectively agreed). The preparation of such by-laws requires the guidance of specific ministries (MOCSS). Such by-laws stipulate issues related to projects operation, maintenance and overall management. The beneficiaries may agree social fines, which would restrict on the behaviour and operations of the members.

9 Conditions for Community Participation and Partnerships

Community participation and partnerships being emerging issues in development efforts requires new legislation policies, institutional linkages and processes. It requires the creation of communication networks and participatory research and linkages between the Government, ESAs or NGOs and the community who are to be the beneficiaries in the plan making process. However such changes cannot come simply through increased awareness of policy makers and professionals but requires shifts in the balance of social forces and power relations. This in effect takes care of conflicts that are likely to occur between the actors.

To conclude the study, Chapter Six will bring forward proposals within the recommendations and conclusion.

CHAPTER SIX: RECOMMENDATIONS AND CONCLUSION

6.0 Introduction

The chapter presents various issues that arose from the data analysis upon which policy implications, conclusions and recommendations are made on the most plausible planning approach to adopt in order to have sustainable water projects.

6.1 Recommendations

The study has identified the obstacle to the realization of the goal of providing potable for all at reasonable distance as being in the approach adopted when the water projects are implemented. The approach has been characterized by inflexibility and passive participation of the water users in the planning process. Projects initiated through partnerships between the Government and donors have always relegated the community to a peripheral role of participating through provision of unskilled labour. This has resulted to dependency and lack of ownership on the part of the beneficiaries, poor operation and maintenance and generally poor performance of the projects.

6.1.1 Localized Solutions to Water Shortage

Due to problems related to water supply such as unreliability, long distances to water points and unfair water distribution, at the local level the people had resulted to several counteracting measures. By basing on general observation, these ranged from digging

shallow wells (ponds) especially in Nziu and Kalamba sub-location, construction of storage tanks for those who had house connections and intensive rainfall harvesting by use of roof catchment. The reliance on water from the streams and rivers was predominant in the study area.

However some of these strategies apart from the rainfall harvesting do not have safe drinking water hence their reliance may pose health risks to the consumers. Plate 14 and 15 shows some of the strategies to counteract the water problems.

Plate (14) Rainfall harvesting through roof catchment at Kithumba Location.

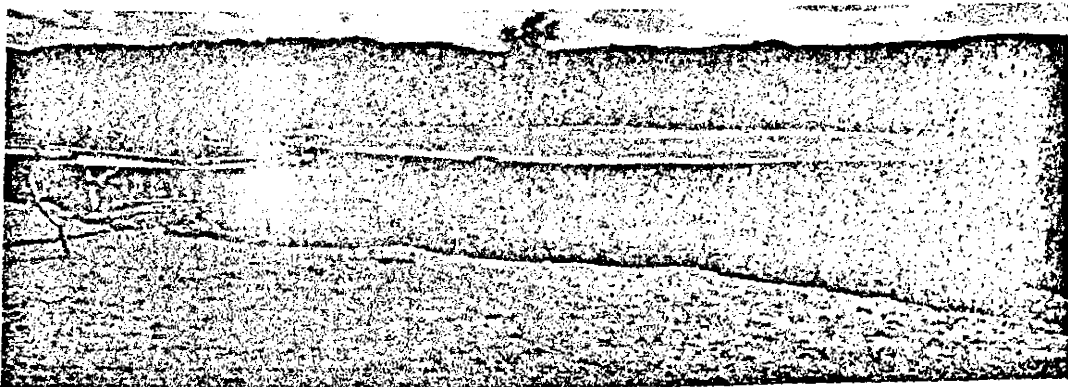
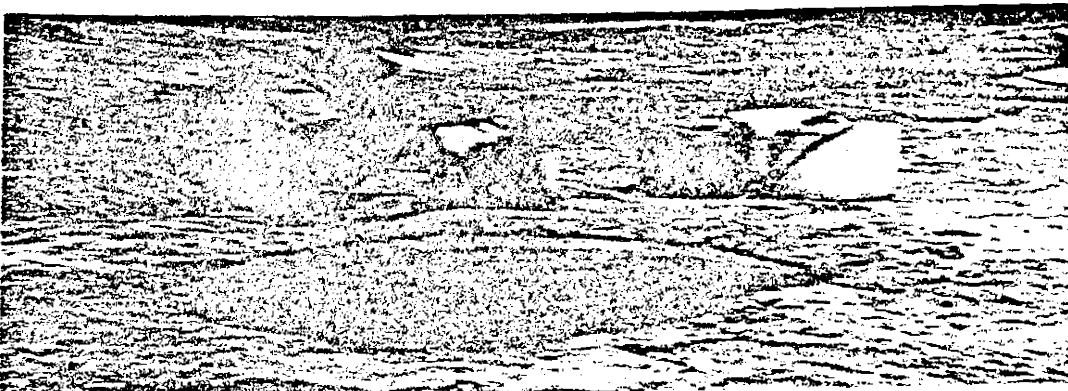


Plate (15) Scooping water from the river



It is ironical that the water consumers in the area had to depend on such unsafe water sources and yet the water supplies had yields that could meet the regions water demand. This according to the study was attributed to unreliability of the water supplies, lack of money to pay for the piped water as well as lack of awareness among water consumers on the positive aspects of piped water in comparison to water from traditional sources.

The study revealed that while the local community is often willing to be active agents of change in their own lives as was indicated by 78% of the respondents but they are often powerless to influence the social economic factors that determine their wellbeing. This calls for a change of approach in the planning of development projects.

6.3.1 Change in the Planning Approach for Rural Water Supply Projects

The Matiliku water projects were characterized by operation and maintenance problems that are related to the way the projects were planned. They were initiated through the combined efforts of the Government and the ESAs while involving the local communities at implementation stage. During the time of study the projects were operating below their capacity and their sustainability was questionable. The water consumers were still relying on water sources whose water was not safe for drinking. This is a reflection of the prevailing scenario during the planning of the water projects where by there was a temptation to rely on the professionals to solve the identified problems. This is only advantageous in the short run but such an approach as a precedent of the long term solves little. When the professionals and a few opinion leaders position themselves as the sole sources of information it leads to unequal access to information which polarizes power hence control of the development process by outsiders. One result of this is that the

outsiders often assume superiority and lose the essence of true partnership and participation in the planning process, which in essence should involve mutual interchange of knowledge. The Government and ESAs officials dominated the planning process instead of enabling the local community to participate effectively in their development. They "hijacked" the community efforts by coercing them to participate through the provision of labour which was only geared at serving their own interests. For instance the Ministry of Water staff were driven by the field allowances paid by the ESAs whereas the ESAs through funding by foreign countries were only out to exercise their presence in rural areas through the initiation of projects.

The study recommends that rural water projects should be demand driven. Thus, the study is a reinforcement of the Kenya's self-help initiatives, which have been in existence since the 1950's. The beneficiaries of a project should conceptualize for its need. This means that the local community should assemble to make a record for the community development priorities and if they are unable to meet their problems then through the Government established institutions, they can seek support from the Government or the ESAs or NGOs. Thus the Government and ESAs come in at this level where the beneficiaries have already identified what they need. Through partnership, the Government and ESAs come in for community assistance in fields that the community is not experienced. A common vision is thus evolved by the different actors' for instance to plan for a water project. This would entail planning with the community i.e. (key decisions taken and full project program defined). The three parties thus collaborate in setting duties and identifying roles in implementation and subsequent monitoring and

follow up of the proposed projects. This would include operation and maintenance that was identified as the critical problem in the smooth running of the water projects.

The Demand Responsive Approach (DRA) holds potential for improvements in achieving user satisfaction, sustainability and resource mobilization by re-orienting the supply agencies to respond to community demand for improved services. This would cater for free participation without use of coercion or other incentives in order to induce people into participating. This in effect creates an enabling environment where by all parties involved relates as partners.

Though the study recommends for DRA several constraints may hinder its implementation as follows:

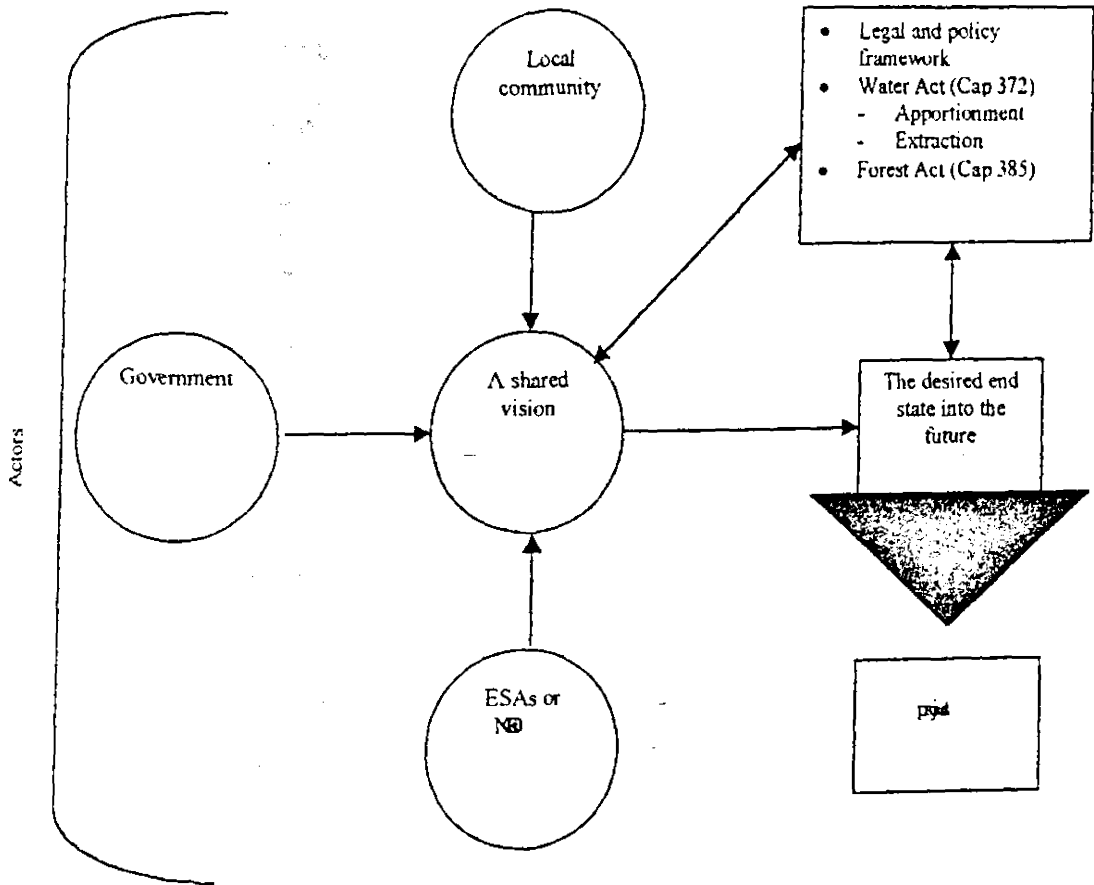
- Inadequate policy, institutional and legislative frameworks.
- Inadequate human, financial and technical resources at the local level.
- Bureaucratic and time consuming financial and procurement procedures.
- Resistance to change among donors, government and communities.
- Insufficient information and knowledge on DRA.

Recognizing that implementation of Demand Responsive Approaches may not be possible within the existing institutional and policy framework, there is need for the Government to develop action plan to effect such a transition process. From the study, the DRA requires a carefully designed and implemented transitional program comprising:

- Policy and program coordination to ensure that DRA are applied within a programmatic approach.
- Phased institutional reforms to re-orient support agencies to DRA.
- Capacity building, learning, sharing of experiences, demonstration projects and regular monitoring and evaluation.
- Modification of on-going projects and programs to accommodate DRA.
- Development and wide dissemination of common rules that are simple, transparent, coherent, broad-based and create the right incentives for communities and intermediaries.
- A communication and awareness campaign at all levels - communities, ESAs and Government - to gain more acceptability through improved understanding of its benefits.

Since the water supplies have the potential to meet the present, future and the ultimate demand there is need for combined efforts from the community, Government and the ESAs to rehabilitate the water supplies. This can be attained through collaboration and having an integrated vision where by all the parties concerned work towards its attainment. However policy and regulatory framework as shown in Figure 6.1 should guide the formulation of such vision.

Figure 6.1 Collaboration and Shared Vision Model for Different actors



Source: Author 2001.

The model acts as an augmentation of the conceptual framework in Chapter Two since it is derived from the research findings in water supply projects. There is a need for consensus between the actors in formulating an integrated vision. This is why the arrows from the different actors point towards having a shared vision. Such a vision may be lacking if visionary leadership is not applied to inspire local people with a dream of how the future end state is projected to be. Incrementally, the activities among the actors in

The plan consists of the vision on the development aspired which in this case is a water project. As a structure plan it can be presented spatially in terms of location. This acts as a basis for program of activities and specific measures to be undertaken. All the actors will thus work towards the integrated vision on the project being planned and reach a consensual agreement on the role of each actor involved in the process. The Government plays a key role in the organization of this process through the set policies, legal and regulatory framework. Through such an approach, community participation and partnerships will prove to be a powerful tool enabling all actors to work towards achieving sustainable developments.

The policies and regulatory framework in the country should however guide the vision. Such policies and regulatory framework relates to the Government policy on water, the Water Act Cap 372, and Forest Act Cap 385. The Forest Act in this sense refers to the conservation of resources emanating from the forests. The water projects discussed in the study have their intakes from the forests (Makuli and Nzau forests) hence before water is extracted permit must be sought from the Chief Conservator of forests. The Water Act on the other hand guides on the water distribution where by water use in one region should not be a disadvantage to people in another region. This is why the arrow from the shared vision to the policy and regulatory is two-way. These will in effect guide in preparing a plan for the future, which in this case is to have a water supply project. This will motivate each actor (stakeholder) to work towards achievement of the integrated vision.

6.1.3 The Way Forward for Sustainable Water Supply in Matiliku Division

Sustainable development in water supply in Matiliku Division requires intervention of all actors that is the ESAs, the community and the Government. Whereas the Government will set the policy and regulatory framework, and provide technical skills, the ESAS can provide the necessary financial assistance if the local community lacks them. The local community can also contribute funds and labour to supplement the cost. All this requires collaboration between the actors during the planning process.

At the local level, the community can practice rainwater harvesting in order to supplement water from the improved water supplies. The digging and protecting of wells where shallow water potentials are high in parts of Nziu and Kalamba Sub-locations can also be practiced. This calls for intensive hydro geological surveys by the MOWD and the participation of the local people.

There is need to extend the water lines to cover extensive areas as will be dictated by the supply potentials for the three water supplies. As was revealed none of the water projects had been extended beyond their first phases. This proposal is based on the fact that the water supplies had yields that could meet the projected water demands for the next 20 years up to the year 2019. The water supplies had water yields as follows: Kisinzi 1257m³/d. Kilinga: 500m³/d. and Ikomba 501m³/d with present water demands as 170.5m³/d: 158.2m³/d: 140m³/d respectively. However, instituting of proper management procedures should precede such an attempt.

Community participation without capacity building is not important for water project, which require future operation and maintenance. Capacity building at the local level is essential in order to solve the current operation and maintenance problems and "learning by doing" can well solve this. In addition, since water management for the household is essentially the responsibility of women, it is important to train them on aspects of water management and maintenance as men who were previously trained decline from providing the services or move out of the rural areas to urban areas. This will ensure that water is not lost in the system through daily pipe bursts that are not attended to. Financial management is also very essential. Strict financial management should be done by ensuring that:

- Committee members are responsible for the project finance.
- Project treasurers ensure that all transactions are recorded.
- Each project opens a bank account for money collected.

Rehabilitation works and conservation of the three intake points should precede the extension of the water lines and the PVC pipes replaced since the water supplies had more than 10 years since their implementation. The rusted G.I pipes for Ikomba water supply needs to be replaced; repair of the *rotten* tank for Kilinga water supply and construction of additional 50m³ storage and break pressure tank for each water supply. It is important to note that the challenge in conservation of natural resources such as water can be countered by replacing the top-down, standardized, simplified, rigid and short-term practices with local level diversified, flexible, unregulated and long-term resource management practices.

The conservation practices should start with what people already know and do well so as to secure their livelihoods and sustain the diversity of natural resources in which they depend. For instance, the local people have knowledge on which tree species' should not be planted in order to protect watersheds. In addition, the development of conservation schemes needs increased attention to be given to community-based action through local institutions and user groups such as women groups who should be effectively involved in conservation planning. These activities would require the combined efforts of the Government, the local community and the ESAs.

In zones where water supply is to be extended to cover new areas, emphasis should be put on erecting CWP's instead of ICs in order to serve a large population with water. There is need for installing metering system in order to ensure better methods of use-charge collection and better accountability of finances collected by the Kiosk attendants. This will also ensure that people with ICs pay for what they consume as well as curb water wastage. This in effect will require collaborative working between the MOWD, the community and the ESAs.

There is need for the MOCSS to assist the local communities in coming up with by-laws, which will guide the practices of the water users. The study revealed that only Kilinga water project that had such by-laws. Such by-laws will prohibit the use of water for irrigation but for domestic purposes only. The local people should come up with fines to be imposed on those who do not comply to set regulations.

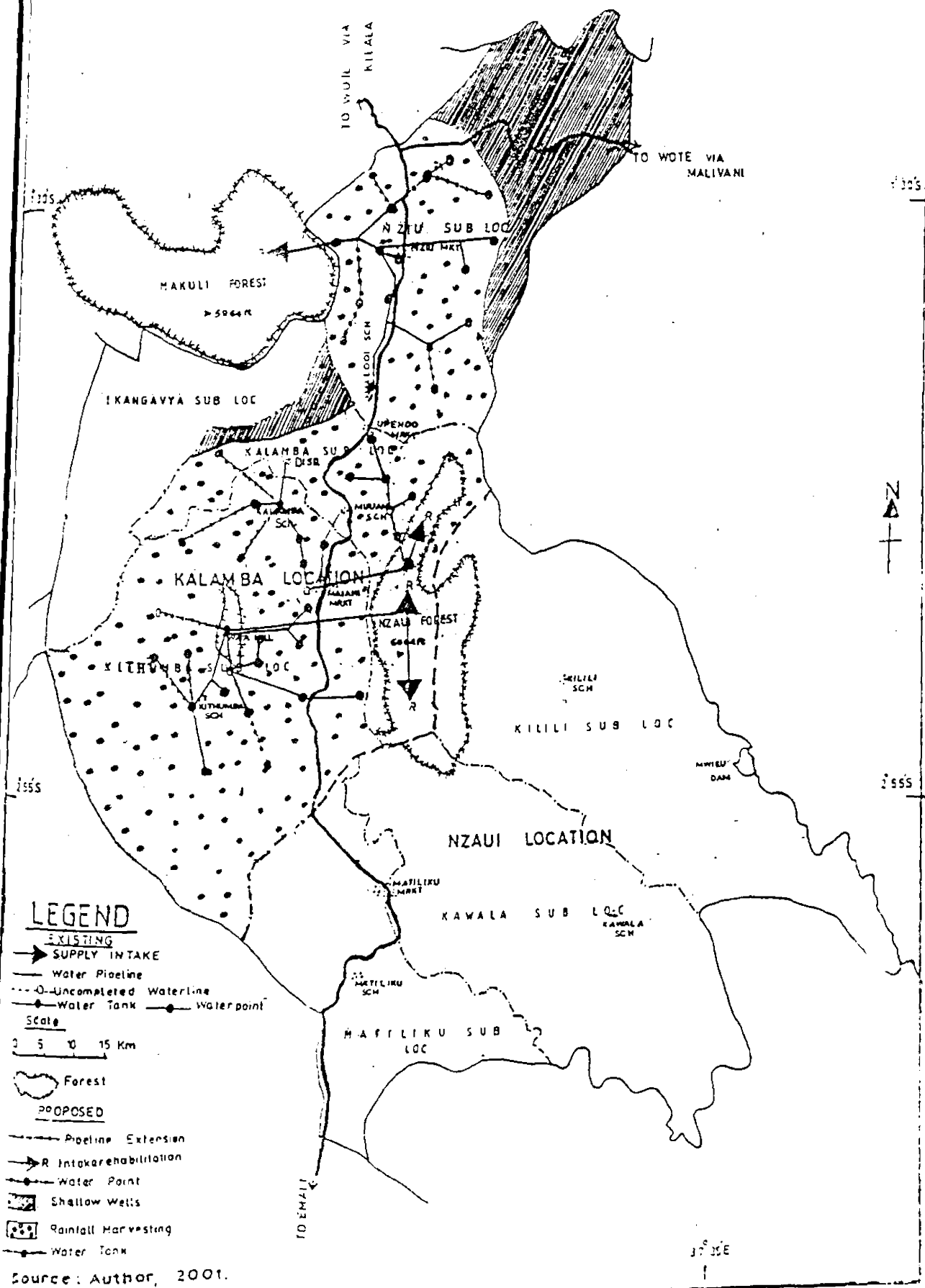
Another critical challenge identified from the study as threatening the future sustainability of the water projects was the lack of community capacity to manage the

projects, inappropriate or inadequate operation and maintenance capacity and the patronizing role of the local administrators towards the water projects development. In view of the magnitude of these challenges there is need of creating an environment to strengthen institutions, improve leadership and organizational skills and upgrade technical skills at the community level. Community participation and partnerships is the most plausible approach, as the stakeholders (actors) will interact as equals. Each starts with the premise that the other has something to contribute and due deference is given. Hence through the set vision (plan) all will work towards its attainment. If all the above ventures are adopted, the proposals will be as shown in Map 6.1.

MAP 61 THE WATER SUPPLY PROPOSALS & CONSERVATION

27°30'E

37°35'E



Source: Author, 2001.

6.2 Conclusion

Planning is not simply the coming up with a good plan but the process of how the plan is prepared is very pertinent especially if it involves utilization and management of natural resources. The findings from the study reveal that the planning process should include lobbying and negotiations with all stakeholders as this enhances coordination in the performance of specific roles.

The hindrance to the sustainability of the Matiliku water projects is the result of the way the water projects were initiated, designed and implemented. The role of the local community during the planning process in the partnership approach between the Government and ESAs should be well articulated and understood. Any project no matter how economical and financially beneficial it is but ignores the ultimate beneficiaries in the planning process has limited chances of ultimate success as has been revealed from the study. This is well exemplified by the projects' operation and maintenance problems. cases of vandalism, sabotage, neglect and misuse of water. There was also lack of positive response by consumers in paying for water as 46.7% of the respondents were not paying for water consumed. This is attributed to poverty among other factors as revealed from the study. All these factors had led to unreliability of water from the water supplies to the extent that the water supplies could not meet the present water demand of $505.6\text{m}^3/\text{day}$. Though the water supplies had the potential for meeting the future and ultimate water demands, this seemed unattainable with the current scenario.

The role of community participation and partnerships in rural water development projects implies that if sustainability of the projects is to be attained nothing less than interactive

participation or shared control will suffice as then people will participate in joint analysis. This in effect leads to action plans and formation of new local groups or the strengthening of existing ones for instance the *Mwethya* groups, which are prevalent among the Kamba people. This is so because partnerships have to rely on a clear focus on common areas of interest so as to come up with a common vision. The roles of each participating group needs to be well defined during the planning process which should make clear linkages and strategic choices. Where external assistance is required it has to be defined in the context of community priorities. It is also important to note that while community institutions can take initial steps to solve own problems they cannot necessarily perform the role done by the external units such as Government technical officers and ESAs or NGOs. The two can provide critical financial, technical or managerial assistance that may be lacking at the community level. Thus community participation and partnerships creates a setting in which the community and outside groups can work together with minimal conflicts of interests thus ensuring that projects implemented will remain sustainable.

6.3 Areas of Further Research

- (i) A comparative study should be done to determine how mismanagement of the water projects by the local community could be solved.
- (ii) Development of mechanisms for water costing in rural water supplies which are not metered so as to cater for operation and maintenance especially where external support was initially used to finance such schemes.
- (iii) A study on alternatives to partnership and community participation as approaches to attaining rural development.

BIBLIOGRAPHY

- AMREF (1998): *Water Development Planning: Arid Regions in Kenya* Nairobi.
- Bebbington, A. *et al.* (1993): *Non-Governmental Organizations and the state in Latin America*, Routledge, and London.
- Bennett, J R and G Krebs (1991): *Local Economic Development: Public-Private Partnership Initiatives in Britain and Germany*, Belhaven press, London and New York.
- Blower, A. (1993): *Planning for sustainable environment*; A Report by the Town and Country Planning Association, Earth scan, London.
- Carruthers, L.D (1972): *Impact and Economics of Community water Supply; A Study of Rural Water Investment in Kenya*, Agrarian Development Studies Report No.6, University London, London.
- Chambers, R. (1983): *"Rural Development putting the Last First"*: Longman publishers, London.
- Chambers, R. (1988): "Sustainable Development livelihoods: A key strategy for people Environment and Development" in C. Conry and M. Litvoinoff (eds) *The Greening of aid: Sustainable livelihood in practice*, Earthscan Publication, London.
- Chambers, R. (1993); *Challenging the professionals: Frontiers for Rural Development*, Intermediate Technology Publication, and London.
- Chauhan S.K. *et al* (1983): *Who puts the Water in the Taps? Community Participation in Third World drinking Water Sanitation and Health*. An Earth Scan Paper, International Institute of Environment, London
- .Chitere, O. and Robert Mutiso (eds.) (1991): *Working with Rural Communities: A Participatory Action in Kenya*, Nairobi University Press, Nairobi.
- Clark, John (1991): *Democratizing Development: The Role of Voluntary Organizations*: Earthscan publications, London.
- Crenson M. (1974): *"Organizational Factors in Citizen Participation"* Journal of Politics. 36, May.
- Darlow, A and Les Newby (1997): "Partnerships: Panacea or Pitfall?", *Local Environment* Vol 2 No 1, Longman, Harlow.

- Davidson, F. (1996): *Planning for Performance: Requirement for sustainable Development* Pergamon Press, Rotterdam Netherlands.
- Dissanayake A.B. (1987): "Problems in the Identification and Design of Projects in Developing Countries and their possible solution" *Paper presented at a conference at Institute for Development, policy and management*, September, University of Manchester.
- European Union (2000): African-Caribbean and Pacific-European Union: *ACP-EU Partnership Agreement*, September, 2000 special Issue-Cotonou Agreement.
- Falkenmark, M (1982): *Rural Water Supply and Health: The need for a new strategy*. Scandinavian Institute of African Studies, Upsala.
- Ghai, D (1988): *Participatory Development: Some Perspectives from Grassroots Experience*. Discussion paper No.5, UNRISD, Geneva.
- Government of Kenya (1980): *National Water Master Plan Stage 1 volume (iii): Present Resource use and Future Demands*, Tippetts- Abbett- Mc Carthy-Stratton Engineers and Architects, Nairobi.
- Government of Kenya (1966 - 1970): *National Development Plan*: Government Printer, Nairobi.
- Government of Kenya (1972): *The Water Act (Chapter 372)*, Government Printer, Nairobi.
- Government of Kenya (1974-78): *National Development Plan*: Government Printer, Nairobi.
- Government of Kenya (1984-1988): *National Development Plan*: Government Printer, Nairobi.
- Government of Kenya (1989/93): *National Development Plan*, Government Printer, Nairobi.
- Government of Kenya (1997 - 2001): *Makueni District Development Plan*: Government Printer Nairobi.
- Government of Kenya (1997 - 2001): *National Development Plan*: Government printer, Nairobi.
- Government of Kenya (-1999 - 2015): *National Poverty Eradication Plan* Government printers, Nairobi.

Government of Kenya (1999): *Population and housing census*, Central Bureau of Statistics. Government Printer, Nairobi.

Government of Kenya (1999): *The Sessional Paper No.1 of 1999, Water Policy*. Government Printer, Nairobi.

Government of Kenya (2000 -2003): *Interim Poverty Reduction Strategy Paper*, June 2000, Government Printer Nairobi.

Guifer, Julian (ed.) (1981): *"Community Action for Social Change: A case study for current projects"*, Praeger Publishers, New York.

Hastings, A (1996), "Unravelling the Process of Partnership in Urban Regeneration Policy" in *Environment and Urbanization* Vol. 12, No 2 October 2000, Russell Press, Nottingham U.K.

International Development Research Centre (IDRC) (1980): "Rural Water Supplies in Developing Countries". Proceedings of a workshop on training held in Zambia, Malawi, on 5-12 August.

Jane stein (1977): *Water life or Death*; A Report in Preparation for the United Nations Conference, *Mardel Plata*, Argentina.

Katajima, S. (1997): *Partnerships Phenomenon and State Debate*. Economic Edition. Hirosaki University, Japan.

Klasse-Boss. (1969): *Rural Water Supply in Kenya: Its Role in Development*. Ministry of Agriculture, Nairobi.

Kottak, C.P. (1985): "When People Don't Come First" Some sociological lessons from completed projects in Cemea (ed.) (1991) *Putting People First*. Oxford University Press New York.

Kulp, E.M (1972): *"Rural Development Planning"* Praeger Publishers, New York.

Lea, D and Chaudhiri, P. (eds) (1986): *Rural Development and the State*. Muthean and Company Ltd. New York.

Lele, U (1975): *Design of Rural Development*, Hopkins University press, London.

Lelo, F.K. et al (1999): *Egerton PRA Field Handbook, for participatory Rural Appraisal*. Second Edition. AMU press, Nakuru. Kenya.

Maleche, Z. (1998): *Framework for Strategic Regional Development*, UNCRD, Nairobi, Kenya.

Malena, C. (1995): *Working with NGOs: A practical guide to operational collaboration between World Bank and NGOs*, World Bank.

Mathuva J.M (1994): *Water Supply and Delivery Problems in Kiteta Location of Makueni District: Towards Improved Supply*. Unpublished M.A Planning Thesis, University of Nairobi.

Mayfield, J.B. (1985): *Go to the People: Releasing the Rural Poor through People's School System*, Kumaarian Press, West Harkford.

Mbithi, P. (1974): *Rural Sociology and Rural Development: Its application in Kenya*, Kenya Literature Bureau, Nairobi.

Mehta, D. (2000): *Urban Management Programme, Street Children and Gangs in Africa Cities*, Guidelines for local authorities. UMP working paper series 18.

Musumba, B. (1997): *Sanitation Stakeholder Consultation*. UNDP, World Bank Water and Sanitation program. UNDP, World Bank, Nairobi.

Mwangi, S. W (2000) (ed): Partnerships in urban environmental management: an approach to solving environmental problems in Nakuru, Kenya. In *Environment and Urbanization* Vol. 12, No 2 October 2000, Russell Press, Nottingham U.K.

Naiya, P.W. (1977): *"Public Participation in Planning Process in Kenya: A case study of Githunguri Division"* Unpublished M.A. Planning Thesis, University of Nairobi.

Narayan, D (1995): *Introduction of People's Participation*. Evidence from 121 rural water supply projects, World Bank Washington, D.C.

Ndungu, A.G. (1989): *The Role of Community Participation in Decision- Making: A case study of Kandara community development centres programs*. Unpublished M.A. Planning Thesis, University of Nairobi.

Pickford, J (1987)(ed.): *Developing World water*: Grosvenor press International Ltd. New York.

Pimbert, M.P. and Pretty J.N. (eds.) (1995): *Parks, People and Professionals*. Putting "Participation" into protected area management. UNISD (United Nations Research Institute for Social Development) Discussion paper No. 57 WWF and IIED.

Pretty, J.N. et al (1994): *A Trainers Guide to Participatory learning and interaction*, IIED Training Materials Series No.2, IIED, London.

Ruhnema, M. (1992): "Participation" in W. Sachs (ed.) *The Development Dictionary*. Zed Books. London.

Roberts, I *et al* (1996): Local Sustainable Development. Turning Sustainable Development into Practical Action in Our Communities. Environ Trust. In *Environment and Urbanization* Vol. 12, No 2 October 2000, Russell Press, Nottingham U.K.

Sampson, N.R. and Dwight, H. (1990): *Natural Resources for the 21st Century*: Island Press. Washington DC.

Stefel, M. and M. Wolfe, (1994): *A Voice For the Excluded - Popular Participation in Development: Utopia or necessity*, Zed books. London.

Stoker, G and S Young (1993): *Cities in the 1990s*, Longman, Harlow.

Therkildsen, O. (1988): *Watering White Elephants. Lessons from Donor funded planning and implementation of rural water supplies in Tanzania*". Scandinavian Institute of African Studies, Upsala.

Tolba, Mostafa (1997): *The Global 2000 Report to the effect of environmental*

UN (1991): *Making Popular Participation in Development: Emerging trends in Community Development*, New York.

UNCHS (Habitat)(1991): *Human Settlements Development through Community Participation*. UNCHS, Habitat, Nairobi.

UNCHS (Habitat)(1996): *Localising Agenda 21 Action planning for Sustainable Urban Development*. Nakuru, Kenya.

UNCHS (Habitat, 1988): *Community Participation in the execution of Squatter Settlement Upgrading Projects*; Training Module. UNCHS, (Habitat) Nairobi.

UNCHS (Habitat, 1998): *Guideline for Drinking Water Quality*. Vol 2; Health criteria and other supporting Information. Habitat 1 -335. Nairobi.

UNDP (1998): *Human Development Report*, Oxford University Press New York.

UNESCO (1998): *Guidelines for project Design and Project documents preparation*: Nairobi.

United Nations – E.C. A (1971): *Integrated Approach to Rural Development in Africa*. United Nations, Nairobi.

United Nations Development Programme (1980): "Decade Dossier " *International drinking water supply and sanitation Decade 1981 – 1990*, New York.

Uphoff N. (1985): "Fitting projects to people" In Cernea (ed.) (1991) *Putting people first*, Oxford University press, New York.

Uphoff N. (1988): "Assisted self-reliance working with rather than for the poor". In J.W. Lewis (ed.) *Strengthening the poor" What have we learned?* Transaction books, New Brunswick.

Warah, R. (1997): Partnerships Principle; Key to Implementing the Habitat Agenda In UNCHS Habitat Debate. March 1997 Vol. 3 No. 2 Nairobi. In Mehta, D (ed) *Urban Management Programme, Street Children and Gangs in African Cities*. UMP working paper series 18.

Water, Engineering and Development Centre (WEDC) (1997): *Water and Sanitation for All Partnerships and Innovations*. Loughborough University, Durban, South Africa.

White. G *et al* (1972): *Drawers of water, Domestic Water Use in East Africa*, Chicago Press London.

WHO (1991): *Surface Water Drainage for Low Income Communities*, Macmillan, London.

Widstrand, Car. (ed.) (1978): *The Social and Ecological Effects of Water Development in Developing Countries: Water Development supply and management*, Vol.7 Pergamon press. New York.

Wileden, A. (1970: *Community Development*, the Bed Minister Press, Totowa.

World Bank (1975a): *Rural Development "Sector policy paper"*, Washington DC. World Bank.

World Bank (1987): *Land and water Resources Management: EDI of the World Bank*, Washington D.C.

World Commission of Environment and Development (WCED) (1987): *Our Common Future*, Oxford University Press New York.

APPENDIX: 1

UNIVERSITY OF NAIROBI

DEPARTMENT OF URBAN AND REGIONAL PLANNING

Household questionnaire

Questionnaire number.....Date...

INTRODUCTION

For quite some time the water project has been in operation in this area. The study is carried out to investigate how the community was involved in the project right from initiation, design and implementation; when the NGO/Donor was working in partnership with the Government. Also of interest is the water situation and problems that threaten the projects' sustainability. The information given will be treated in confidence and used in writing an academic report as part of my education at the University of Nairobi. Thanking you in advance.

(a) Name of respondent...

(b) Are you the Household head Yes /No. If no what is the relationship to the household head

(c) Sex...

(d) (i) Family size... (ii) Other relatives living in the family...

(e) Level of education...

- Adult education Read and write only Primary level Secondary level
 Technical courses University level

(f) Location...

(g) Sub-location...

(h) Village...

(i) Occupation of the head of household?

- Unemployed Day labourer small-scale farmer Merchant/trader

Student Housewife Professional

1) Period of residence.

2)a) Source of water

i) Piped water in homestead (ii) Piped water at a communal water point

(iii) Bore hole (iv) Reservoir (v) Stream/river (vi) others specify _____

b) Why do you use water only from the above source(s)?

c) If from the water project when did you start using water from the project (state month and year) _____

3). What is the name of the water project serving this area? _____

4). If not from the water project, state why?

(i) Lack of money to pay for water

(ii) Piped water has not reached our village

(iii) Others specify _____

5)a) If 2(ii) how far is the communal water point _____

b) Time round trip to improved water point _____

(6). If not 2(i) and 2(ii) how far is the water source _____

8). What do you use to transport your water to the homestead? _____

9). (a) Who brings the water to the homestead? _____

(b) What other activity is performed by the water drawer? _____

10). For those not 2(i) and (ii) how long does it take round trip to get water? _____

11). How many trips do you make in order to obtain sufficient water for all uses? _____

12). For what purposes do you use this water? Give approximate amount of each.

(i) Drinking (ii) washing, (iii) Bathing (iv) irrigation (v) watering animals

13). What do you consider unfavorable about the main source of water? Give by order of concern.

(i) Colour (ii) Taste (iii) Smell (iv) Distance (v) Unreliability (vi) others specify

(14). What is your opinion on whether the water is fit for human consumption?

If not what changes do you prefer? _____

15). What do you think of the time and effort employed in obtaining water?

(i) Too much (ii) normal (iii) little

16). If 15 (i) above in what activity would you use the time saved if you spend less time?

(i) Directly productive work (ii) Leisure (iii) Others specify

17). Do you pay for your water? Yes/No

If yes how much and what do you think of the cost of water? _____

(i) High (ii) normal (iii) low

18). Would you be willing to spend more money in order to obtain a closer and reliable water source? Yes/No

(i) If yes state how much _____

(ii) If no state why? _____

19). (a). When did you first hear about the water project serving this area?

(b) How did you hear about it?

(i) Through a friend (ii) A *baraza* by chief/sub chief/D.O (iii) Others specify

20). (a) Who initiated this project (if a person, give his/her name, occupation, sex, education). _____

(b) If more than one who in your opinion was most influential in making the decision to initiate the project? _____

(c) What in your opinion led to the initiation of the project? _____

(d) How was it initiated? _____

21). Who were the main actors and what were their roles during the design and implementation of the water project? _____

23). Who decided on the location of the water points? _____

24) In which stage of this project have you comparatively played an active role?

i) Initiation ii) Design iii) Management iv) Planning

(b) During the initiation, design and implementation of the project did the people concerned seek the opinions of the public/community in the process? Yes/No)

(a) If yes (i) what kind of ideas did they seek? _____

(ii) How did they seek information about the initiation, design and implementation of the water project?

(c) If you had you been given a chance to give you opinions, what do you think should have been done so as to have a sustainable project? _____

25). In what way(s) did you participate in the project from initiation, design and implementation?

Type of contribution

How?

how much?

(i) Decision-making

(ii) Finances

(iii) Manual (unpaid labour)

(iv) paid labour

(v) Ideas

vi) Others specify

26) Why did you participate in the above stated way(s)? _____

(i) Expected benefits (ii) coerced (iii) influenced by a friend (iv) others specify

27) Who financed the water project? _____

28) What was the role of the provincial administration (chiefs and sub-chiefs) during the project implementation? _____

29) Who were the main decision-makers as far as the water project was concerned?

30) Who were the first committee members of the project just after its implementation?

<u>Name</u>	<u>position</u>	<u>educational level</u>	<u>Gender</u>	<u>previous knowledge</u>
1				
2				
3				
4				
6				
7				

1

2

3

4

6

7

31) How did they come to occupy those positions at that time?

(i) Elected (ii) Imposed (iii) Seconded (iv) nominated (v) others specify

32) Did the local community organizations play any role in leadership of the project during the initial stages? Yes/No

If yes, which ones and what role?

33) During the design and implementation who did the technical works?

34) How long did the Government and Donor offer support for the project?

35) Were any people trained on operation and maintenance aspects during the project implementation? Yes/NO

If Yes how many people were trained? _____

36) At present who is in charge of Operation and Maintenance responsibilities? _____

(a) From the above are they members of the community? Yes/No

(b) Where were they trained on such technical aspects? _____

37) Do you think the project has benefited the community members fairly? Yes/No

a) If no why. _____

b) What do you think should have been done so that people share benefits fairly? _____

38) (a) What problem(s) do you face in as far as getting water from the project is concerned? _____

(b) What are the cause(s) of these problems _____

(c) In your own opinion what should be done to solve the above-mentioned problems? _____

39) What overall improvements would you propose to be made in the running of the water supply project?

Thank you for your co-operation

Appendix: 2

QUESTIONNAIRE FOR LOCAL ADMINISTRATORS

I am a student from the University of Nairobi undertaking a research on the role of community participation and partnerships in rural development. All the information will be treated with confidentiality for academic purposes only.

- 1) a) What is the name of this administrative section?
- b) How many water projects do you have in this administrative section? Name them.
- c) Who were the main actors during the implementation the water projects?
- 2) What were the roles of the actors?
- 3) What were the initial objectives during the implementation of the water project?

- 4) What has been the role of the local community in water supply projects?

- 5) What has been the role of the following in water supply projects?
 - (i) Local administration _____
 - (ii) NGOs/External Support Agencies _____
 - (iii) Government (ministry of water) _____
- 6) How has your office been involved in development activities especially rural water supply projects? _____
- 7) How are the water project managed? _____
- 9) What problems are faced in as far as water supply is concerned?
- 10) What do you think should be done to solve these problems? _____
- 11) How many households are served by this water project? _____
- 12). What mechanisms have you put in place to take care of the project materials against misuse and vandalism.

Thank you for your cooperation

Appendix: 3

**QUESTIONNAIRE FOR NGOs AND EXTERNAL SUPPORT AGENCY
OFFICIALS**

I am a student from the University of Nairobi Department of Urban and Regional Planning undertaking a research on the role of community participation and partnerships in rural development. Your assistance will be highly appreciated and all the information will be used only for academic purposes. Thanking you in advance.

1) a) Who are the main actors in the implementation of water projects in rural areas?

b) What are the roles of the actors?

2) Why do you venture in rural water supply projects?

3) What is normally the role of the Ministry of Water in such projects?

4) Do you face any problems in working in partnership with other actors in rural development projects? Yes/No

If Yes which ones—

5) In your opinion what do you think can be done so that above problems can be ameliorated?

6) How do you involve the local communities in such rural development projects?

7) What steps do you take during the projects' implementation in order to ensure projects' sustainability?

8) What problems do you encounter from the local communities in bid of initiating/implementation development projects?

(9) What in your opinion can be done to solve the above problems? —

Thank you for you cooperation.

Appendix: 4

QUESTIONNAIRE FOR DISTRICT WATER ENGINEER

I am a student from the University of Nairobi Department of Urban and Regional Planning undertaking a research on the role of community participation and partnerships in rural development. Your assistance will be highly appreciated and all the information will be used only for academic purposes. Thanking you in advance.

- 1) Enumerate the various water projects in Matiliku Division? _____
- 2) Who are the main actors during the implementation of the water projects?

- 3) Of the above projects which ones were implemented by NGOs/External Support agencies in partnership with the Government. _____
- 4) How do you involve the local communities during the initiation, design and implementation of such rural water supply projects?

- 5) What measures do you put in place to ensure the future sustainability of such rural water supply projects? _____
- 6) What problems do you encounter in working in partnership with the other actors in the implementation rural water supply projects?
- 7) What problems do you encounter from the local communities during the initiation, design and implementation of such rural water supply projects?

- 8) What do you propose can be done in order to counter the above problems? _____

Thank you for your cooperation.

Appendix: 5

QUESTIONNAIRE FOR MANAGEMENT TEAM

1. What is the composition of the current management team and their roles?
2. How did they occupy the positions? -----
3. Is the water project registered? Yes/No
4. If yes under which ministry is it registered? i) MOCSS ii) Association iii) NGOs
1. Do you have a water permit? Yes/No
2. How do you collect the revenue from the sale of water?
 - i) Who does the collection? -----
 - ii) What documents do you use in collecting the revenue? -----
 - iii) How do you save the revenue from the sale of water? -----
7. If you operate a bank account, elaborate on the banking procedure? -----
8. How do you perform the following: -
 - i) Procurement procedures -----
 - ii) Expenditure procedures -----
 - iii) Accounting procedures -----
 - iv) Reporting procedures -----
9. Were you trained on management skills before occupying the current positions Yes/No.
 - a) If yes how many were trained and on what skills
 - b) Who trained you? -----
 - c) If No. why were you not trained? -----
10. Who is in charge of operation and maintenance? -----

Are you paid for the services you render to the community? Yes/No.

If yes how much per month?-----

If no state why-----

2. To whom is the management team answerable to? -----

3. How many people (house holds) were served with water when the project was first implemented? -----

4. How many people (households) are served with water today by

i) ICs

ii) Communal water points/ water kiosks

15. What governs the activities of the members of the water project? -----

16. What problems do you encounter in carrying the following duties:-

i) Revenue collection-----

ii) Banking-----

iii) Expenditure-----

iv) Accounting-----

v) Procurement-----

vi) Reporting-----

17. How do you solve the above-mentioned problems? -----

18. What do propose should be done in order to solve the above-mentioned problems?

Thank you for your cooperation.

Appendix 6: A SUMMARY OF GRAVITY WATER PROJECTS IN MATILIKU

Water Project	Year of initiation	Initiators	Water Yields	Catchment Population	ICs	CWPs	Status of Supply
Kisizi	1972	Catholic Diocese Of Machakos, GOK an & Community	1257m ³ /d	Kalamba sub-location (6319)	91	11	<ul style="list-style-type: none"> ◆ Operational despite technical problems at river crossing ◆ Rusted G.I pipes at river crossing ◆ Poor management ◆ Unprotected intake ◆ Unmetered water points ◆ Decreasing yields
Isololo	1985	Catholic Diocese of Machakos, GOK & community	1131.1m ³ /d	Kilili sub - location (5738)	172	10	<ul style="list-style-type: none"> ◆ Decreasing yields ◆ Unmetered water points ◆ Water points lack doors and windows
Kilinga	1985	MIDP, GOK & community	501m ³ /d	Kithumba sub-location (5544)	116	7	<ul style="list-style-type: none"> ◆ Intake silted at both springs ◆ Insufficient storage tanks ◆ Rotten tanks ◆ Unmetered water points
Ikomba	1990	WVI, GOK & community	500m ³ /d	Nziu sub-location (5990)	60	8	<ul style="list-style-type: none"> ◆ Intake covered by under growth ◆ Poor management ◆ Unreliability of water supply ◆ Water points lack doors and windows ◆ Water points lack roofing
Manooni	1987	MIDP, GOK	—	Serves parts of 2 divisions	177	9	<ul style="list-style-type: none"> ◆ Dirty/polluted water ◆ Insufficient storage tanks ◆ Dam silted
Ikangavya	1985	MIDP, GOK & community	—	Ikangavya sub-location (4632)	13	3	<ul style="list-style-type: none"> ◆ Water points lack doors and windows ◆ Rotten water tanks ◆ Unmetered water points ◆ Unreliable water supply

Source: (District Water-Office, Makueni, 2000).

