

**IMPROVING ACCESS TO COMMUNITY WATER SUPPLY A CASE OF
MUMIRAMIRA VILLAGE – NGARA DISTRICT**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT FOR THE
REQUIREMENTS FOR THE DEGREE OF MASTER IN COMMUNITY
ECONOMIC DEVELOPMENT OF THE OPEN UNIVERSITY OF
TANZANIA**

2013

CERTIFICATION

I, Dr William Pallangyo, Certify that I have read this project assignment and accepted it as a scholarly work. I therefore recommend it to be awarded as Masters of Science in Community Economic Development.

.....

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Date.....

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DECLARATION

I, Joseph Sayo Mwitwa, hereby declare that this project paper is my own original work, except where acknowledgement has been done. The paper has not been submitted for any degree in any other University before.

Signature.....

Date.....

DEDICATION

This dissertation is dedicated to the almighty God who enabled me and gave me a chance of life and strength to accomplish this work. This work is also dedicated to Mrs. Georgina J. Sayo, my Wife and to Fariji and Meck my children for their moral support during the whole period of the study.

Final dedication of this work is to all OUT lecturers (CED Program) who took their part to impart knowledge in my brain such that I am now a professional CED specialist.

ACKNOWLEDGMENT

I wish to thank all people who have contributed to the accomplishment of this work. Special thanks should go to my supervisor Dr William Pallangyo who spent most of his time for guidance to complete this work. I highly appreciate.

This work might not be completed without kindness and support from the people of Mumiramira Village. They accepted me to work with them, but the most important here is support they gave me during my studies.

Thanks to the GAD Consultant who agreed to include me in their team as a sub consultant and spent most of their time to make sure that my objectives are met. I wish also to thank my colleagues for their moral and material support during our course period. I would like to express my deep appreciation to my fellow staff of RAAWU who in one way or another tolerated my absence from work and undertook my duties and responsibilities at times I was attending classes.

I would like to thank Dr. Mutasa, the Director of the CED program and Dr. Chacha Alfred Matoka, Dr. Deus Ngaruko and Mr. James Kalanje for their contributions in my new skills gained as a result of this course, very much appreciated.

Again, I am indebted to my wife Georgina Kallaghe Sayo and our children Mecky and Fariji for their encouragement and patience all the time through my studies.

ABSTRACT

Mumiramira village community is located at, Ngara district in Kagera region with population of more than 3,629 residents. In a way of solving the problem of inadequate water supply, communities decided to organize themselves to use the available water sources with support from other stakeholders. The major project objective was to improve access to water supply. The major activity planned under this project was to provide water management awareness and construct water supply schemes. With the support from the CED student, and GAD consult as well as the village government, the community and the management of Kabanga Nickel Company managed through community participatory methods to provide proper water management awareness to the community and provide water supply schemes. A non experimental research design was adopted where cross sectional survey methods were used to examine the relationship between variables. The data collection methodology used a mixture of open participatory tools. The Sampling process used both probability sampling and non-probability sampling. The design of the project was community based. Evaluation of the project has been done in order to assess achievements of the project and its sustainability. The CED student has managed to meet his objectives of facilitating the process at this point where the main project activities have been done. Participation of the community towards the project was very good but the community should further be educated on fully participation.

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ABBREVIATIONS

CCM	‘Chama cha Mapinduzi’
CED	Community Economic Development
CNA	Community Need Assessment
DFID	Development Fund for International Development
HESAWA	Health Sanitation and Water
IBNET	International Benchmarking Network for Water Sanitation Utility
JMP	Joint Monitoring Programme
MDGs	Millennium Development Goals
NGO	Non Governmental Organization
NSGRP	National Strategy for Growth and Reduction of Poverty
NWP	National Water Policy
NWSDS	National Water Sector Development Strategy
PAMSIMAS	Penyediaan Air Minum dan Sanitasi Berbasis Masyarakat
PRA	Participatory Rural Appraisal
SARAR	Self Esteem, Associate Strength, Resourceful Action Planning and Responsibility
SHUWASA	Shinyanga Urban Water Supply Authority
SWASIP	Sombeza Water and Sanitation Improvements Project
VIP	Very Important Person
WAMMA	Water Aid, Maendeleo ya Jamii, Maji and Afya
WSSCC	Water Supply and Sanitation Collaborative Council
WSSSR	Water Supply and Sanitation Sector Reform

CHAPTER ONE

1.0 PARTICIPATORY NEEDS ASSESSMENT

1.1 Introduction/Background Information

The objectives or purpose of this report is to give a brief overview on the implementation of the community needs exercise which was executed from 22nd March to 5th April, 2011 in 3 villages bordering the foot print area of Kabanga Nickel Company prospecting area. The villages where this exercise was undertaken simultaneously are: Mukubu Village; Bugarama Village; and, Mumiramira Village. The exercise was executed by a team of 7 consultants from GAD Consult which involved: Overall Team Leader who partook in the exercise through close supervision in all 3 villages, Village Team Leader for Mukubu Village, Village Team Leader for Bugarama Village, Village Team Leader for Mumiramira Village, team member in Bugarama Village, team member in Mukubu Village, and team member in Mumiramira Village.

The exercise which involved the use of participatory methods and tools was relatively successful. Since the objective or purpose of the exercise was to consult with villagers on their most pressing needs as regards to water, the 6 day exercise focused on the following steps: identifying development opportunities as concerns water services. The process involved assessing the present situation, taking stock of shortcomings, and suggesting ways to improve the overall situation as concerns community services in water supply.

The exercises were carried out with assistance from 6 other team members, who were locally recruited through the Community Development Unit. These local team

members provided the team with good knowledge of the local environments and were useful in carrying out interviews at the household level. Attendance to the community needs assessment exercise was commendable. The three villages have a total population exceeding 10,299 inhabitants, and around 2,251 households. More than 255 villagers attended the introduction meetings. The highest attendance was at Mumiramira Village, with 147 villagers being present. Focus group discussion was the method of choice in consultation with villagers. Altogether not less than 150 villagers sat in focus group discussions for 4 consecutive days. Semi-structured interviews were held with 96 households, and structured interviews were held with around 49 leaders.

The exercise captured abundant information from the villagers and their leaders. Information collected touched on the following issues: number of households; number of inhabitants; proportion of households in low, middle or high income brackets; school data; dispensary data; proportion of men and women in the village leadership; number of livestock; number of means of transportation; SACCOS; farming implements; kiosks; conflicts; and use of bed-nets.

Other data involved: trend lines on health, water and crop production; historical time line on health, water and economic development progress; seasonal calendar on the main events or activities in the village during the year; transect map and a village map. Information gathered was quite substantive. Not only do we now have abundant data on the village as regards to water, health and economic development needs, but we also have their priorities charted and their interventions laid out. The villagers managed to provide adequate information on their priorities as regards to

water services [e.g., rehabilitation and development of existing water infrastructure through strengthening of springs and pipe schemes].

Action plans drawn by the villagers possessed useful calculations on internal contributions by the village itself, and the supported expected from outside the village. It is expected that Kabanga Nickel Company Ltd, and the District Council will each support these plans. The villagers are willing and ready to start corresponding with local government authorities as well as Kabanga Nickel Company Ltd, on support in executing their village plans.

1.2 Community Profile

1.2.1 Introduction and Location

1.2.1.1 Kagera Region

The region lies in remote north western region bordering Uganda, Rwanda and Burundi. Road access to the region is difficult, while social services are scarce in most of its rural areas. The region has relatively good climate and land for crop production. Important agro-ecological zones in the region are: the Highland; High/Medium Rainfall Perennial Banana/Coffee Production Zone and the Lowland, Medium/Low Rainfall Annual Crop Production Zone. The indigenous population is 1.6 Million people in 290,000 households, dispersed in 550 villages with densities varying from 25 to 100 persons per square Kilometer.

Smallholder subsistence farming dominates the economy. Poverty and welfare data indicate that Kagera Region is among the poorest in Tanzania. Over 40 percent of the households face frequent deficiencies in staple food supply and over 80 percent

are classified as poor. Major causes of poverty are: distance from the road; lack of farm inputs, credit and extension; low prices, especially for coffee; inadequate access to safe water; scarcity of fuel wood and lack of transport.

The rural district of Kagera Region [Karagwe; Bukoba Rural; Muleba; Bihalamulo and Ngora] have a joint population of approximately 2,000,000 individuals living in 375,000 households. Although all live in rural districts, 20 percent of these people live in areas classified as peri-urban, with the remainder living in rural areas. Rural Kagera has a poverty rate of 31 percent; a little less than one out of three households live below the basic needs poverty line. However, as poor households are generally larger, 40 percent of the Kagera population lives in a poor household. Twenty six percent of the household in the region have access to health facility, i.e. live within 30 minutes travel from one health facility.

In urban areas this proportion is significantly higher at 57 percent. In contrast in rural areas it lies very low at 19 percent. Access to social service differs substantially between rural and peri-urban areas, the proportions of individuals using health facilities in rural areas and urban are almost identical at roughly 15 percent. Almost 57 percent of children born in the last five years were delivered at home and 43 percent in a hospital or a maternity ward. Children are more likely to be born at home in rural areas, in poor households and if they are born in Karagwe District.

1.2.1.2. Ngora District

The district comprises of 13 percent of all households in Kagera region. The poverty rate in the district is the highest in rural Kagera after Bihalamulo and Muleba. The

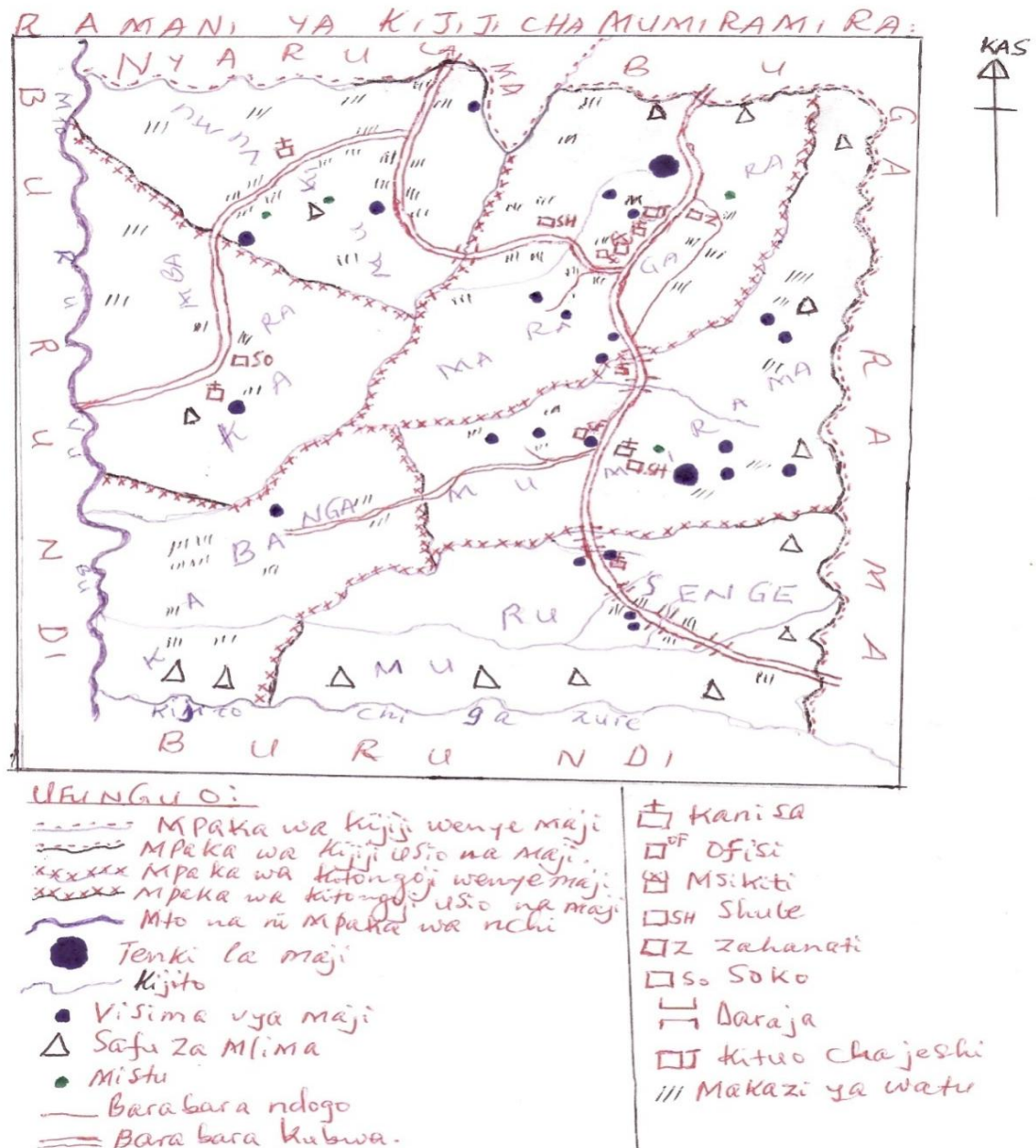
district is a home of 15 percent of the poor households in the region and most Ngara's households have an average of 5.3 inhabitants. Level of livestock and land possession are comparable to the rest of the rural region. Ngara District has the second highest rate of access to health facilities in Kagera Rural. Over 30 percent of its households are located within 30 minutes of travel from the nearest health facility.

Here about 40 percent of the births are delivered in the hospitals or maternity wards, while the remainder is delivered at home, which is the second lowest percentage of hospital births in Kagera rural after Karagwe. Ngara has the best access rate to drinking water facilities. Seventy percent of the households are located within 30 minutes of travel from the nearest source of drinking water. About a third of households in Ngara District live under the basic needs poverty line. Ngara is a district with a high poverty rate compared to the rest of the region. In absolute number Ngara has 16,700 poor households.

1.2.1.3 Mumiramira Village

Mumiramira village forms part of Rulenge Division, Bugarama ward in Ngara District, bordered by Nyarulama village, Bugarama and borders Burundi in South and West of the village, approximately half of the village land is surrounded by Burundi (Figure 1).

Mumiramira village is formed by a total of six hamlets, namely: Murusenge; Kabanga; Mumiramira; Maragara; Mukivumu and Karamba as shown in Figure 1.



Source: Mumiramira Village Council 2011

1.2.1.4 Demographic Characteristics

Mumiramira village had a total of 3,629 residents, comprising of 59 percent female, the active population is less than half of the total population of which 60 percent is again women. This indicates that women form the backbone of the village economy. Now with this proportion where are the other men? This question can be answered

by another study. However, the location of the village sharing border with Burundi might have impact on this, it should be known that since 1993 there was an influx of refugees in the village and this might have impact to the current population. Table 1 shows demographic characteristics in Mumiramira.

Table 1: Population in Mumiramira Village

Population Group	Men	Women	Total	Percentage of Women
Total Population	1488	2141	3629	59%
Active population	491	750	1241	60%
Dependants [below 17 years old]	902	1296	2198	59%
Disabled	3	3	6	50%
Orphans	65	57	122	47%
Most Vulnerable Children	27	35	62	56%

Source: Mumiramira Village Council January 2011

1.2.1.4 Village Administration

According to the Local Government Authority regulation of the United Republic of Tanzania, every village is supposed to have its own government headed by the Village Chairman and the Village Executive Officer. They are responsible to the Village Council with 25 members representing all hamlets in the village (Table 2).

Table 2: Members of the Village Council

Description	Men	Women	Total	Percentage of Women
Total Number of members	18	7	25	28%
Elected members	18	7	25	28%
Members under special seats	-	-	1	-
Committees' Chairpersons	3	-	3	-
Committee's Secretaries	3	-	3	-

Source: Mumiramira Village Council January 2011

1.2.1.5 Education in Mumiramira Village

Despite the fact that the total area of the village is not known, it is beyond reasonable doubt that generally the village is relatively big. In this line Mumiramira has two primary schools namely Mumiramira Primary School located at the centre of the village and Mukivumu Primary school in the respect hamlet, but saving other hamlets around. Table 3 explains primary education status.

Table 3: Primary Education in the Village

MUMIRAMIRA PRIMARY SCHOOL				
Description	Men	Women	Total	Percentage of women
Number of Teachers	8	1	9	11%
Number of pupils	341	380	721	53%
Number of pupils passed 2007	3	1	4	25%
Registration of standard one 2008	35	36	71	51%
MUKIVUMU PRIMARY SCHOOL				
Number of Teachers	5	1	6	17%
Number of pupils	263	264	527	50%
Number of pupils passed 2007	5	18	23	78%
Registration of standard one 2008	28	23	51	45%

Source: Mumiramira and Mukivumu Primary Schools 2011

Table 4: Vital Statistics in Education Mumiramira Village

MUMIRAMIRA PRIMARY SCHOOL				
Description	Requirement	Available	Deficit	Percentage of Deficit
Number of classrooms	18	7	11	61%
Number of teachers' houses	18	2	16	89%
Number of desks	240	130	110	46%
Number of pit latrines [toilets]	84	8	76	10%
MUKIVUMU PRIMARY SCHOOL				
Number of classrooms	13	4	9	69%
Number of teachers' houses	13	2	11	85%
Number of desks	157	81	76	48%
Number of pit latrines [toilets]	23	4	19	83%

Source: Mumiramira and Mukivumu Primary Schools

1.2.1.5 Health Situation in the Village

Outpatient services in the village are provided at the dispensary, located within the village, it was reported that the dispensary is vital in the village, specifically for Mother and Child Health, children less than five years old, pregnant mothers and vaccination. The dispensary had only two staff, a clinical officer and a nurse attendant may be a guard even if it is not mentioned in the Table 5. The average number of outpatient per day was mentioned to be 15 persons, excluding pregnant mothers and children less than five years coming for vaccination and weighing services.

Table 5: Health Statistics the Village

Descriptions	Female	Male	Total
Number of Clinical Officers	1	-	1
Number of nurses and or Attendants	-	1	1
Number of outpatient per day	-	-	15
Vital Statistics in Diseases [Causes of Deaths in order]			
Malaria	5	4	9
Coughing	-	-	-
Diarrhea	-	-	-
Malnutrition (deficient)	25	25	50
Health and Children			
Malnutrition (deficient)	25	25	50
Vaccination	36	199	235

Source: Mumiramira Dispensary January 2011

1.2.1.6 Religious Institutions

There are four religious institutions in the village, namely: Roman Catholic; Seventh Day Adventists; Pentecostal and Islam. No mention was made in relations to the

proportional of this believers to the total village population or which denomination or sects has more believers, compared to the either the village population or the total number of believers in the village.

1.2.1.7 Livestock in the Village

Villagers at Mumiramira are mixed farmers cultivating crops and keeping livestock. Village data base at Mumiramira shows that there are 221 Cattle in the village, in 20010. However, there is no data on Sheep; Chicken and Goats which for sure can be seen all over the village. According to village data no dairy cattle are available in the village; common diseases for animals were also not mentioned.

1.2.1.8 Microfinance and Non-Farming Activities

Despite the fact that majority of villagers are farmers growing crops and sometime keeping livestock, some of them are involved in other non farming activities.

However, there is no any type of microfinance institution in the village in whatever form. For those few involved in businesses, hence the village has as a result there are three small shops; one weekly market and a total of 8 local beer bars and pubs, commonly known as Club or Pombe Shops.

1.3 Community Needs Assessment (CNA)

1.3.1 Overall Objective of the CNA

The overall objective of the Community Needs Assessment exercise in Mumiramira was to engage the communities in “Determining priorities in regards to development in health, water, and economic well being”

1.3.1.1 Specific Objectives

- i) To determine the required improvements in the village in terms of health and medical services.
- ii) To assess the required improvements in condition of water in terms of accessibility, availability, cleanliness and safety.
- iii) To find out the basic economic and agricultural problems in need of improvements.

1.3.3 Research Questions

- i) What measures should be taken to improve the health and medical services in the village?
- ii) What improvements should be done to improve accessibility and availability of clean and safe water?
- iii) Which economic and agricultural problems face the community?

1.3.4 Community Needs Assessment Methodology

1.3.4.1 Research Design

A non experimental research design was adopted where cross sectional survey methods were used to examine the relationship between variables. Different cases were studied to determine the relationship between variables i.e. how one case influence the other either positively or negatively. For instance the relationship between prevalence of poor supply of water and community health and engagement in economic activities. Also similar cases at different times/situation were studied in order to determine how the supply of water changes and how the changes contribute to problems in the village in health and economic activities.

Associations were sought between variables that reflect the levels of poverty such as economic capabilities (i.e. ability to earn income, consume and have assets); human capabilities (i.e. health, education, water and shelter); political capabilities (i.e. human rights, voice and influence); socio-cultural capabilities (i.e. ability to participate as valued member of society); and protective capabilities (i.e. capacity to withstand economic and external shocks).

Linkages that were given emphasis are those that the CNA exercise was seeking (eg. Access and varieties of water sources, skills and expertise available in the village, existence of social empowerment and self help groups; types of economic production methods; diversification and access to credit; and dimensions of food insecurity and poverty. Most associations were revealed by simple scrutiny of the statistics or percentages in the tables. It was essential for the team to know whether the above associations were caused by errors in the handling of data (eg. Mathematical errors) or they are caused by chance. Moreover, it was insisted that it is essential to observe whether the associations are weak; inconsistent; or they are that could be explained through other variables that have little meaning in themselves. It was also determined whether some or the above associations observed were created due to differing circumstances. In general, associations could be causal. Causal associations are associations whereby a change in frequency or quality in one variable, influences events or characteristics in the other variable.

The village profiling process was thus used to establish whether poverty and well being gaps were caused by factors that were detected in the participatory village survey exercise. The village survey thus aimed at enabling observations on the

mechanism by which this process of social economic deficits is exerted. It was obvious that several associations between social economic gaps and male domination are evident through the gender profiling of data collected through the CNA survey. However, these associations needed to be certified that they did not occur through bias.

1.3.4.2 Sampling Technique

In the process of selecting respondents to be included in the sample, both probability sampling (Lottery) and non-probability sampling (Purposive or Judgmental) was used. Leaders and other stakeholders were purposively selected while villagers were selected using systematic sampling and simple random sampling.

1.3.4.2.1 Determination of the CNA Teams

This involved determination of four members to be involved in the team at Mukubu. Including three insiders and one outsider, the outsider here was a team leader in the village, while insiders are those facilitators coming from within the community and can speak local language.

1.3.4.2.2 Data Collection Methods

The data collection methodology used in the CNA was a mixture of open participatory tools or structured tools. The tools were those from Participatory Rural Appraisal (PRA). Participatory Rural Appraisal is one of the most popular and effective approaches to gather information in rural area. This approach is considered shift form paradigm from top-down to bottom-up approach and from blueprint to the

learning process. PRA was a method used for CNA data collection and analysis on water supply in the Mumiramira. The data was then used for the preparation of the community Action Plan which will be used for support programme. The PRA tools used during the exercise included: community Meeting; community Sketch Map; Transect Walk; Wealth Ranking use of semi-structured questionnaire; focus group Interviews; Historical Time Lines; Trend lines; Gender Resources Map; Seasonal Calendar and the creation of Community Action Plan.

The exercise was done in collaboration with local leaders, villagers and other development partners for collection and analysis of all relevant information. The modality of the CNA involved direct contact with village communities, facilitators and villagers coming face to face at the Mumiramra primary school for five days. This approach provided excellent opportunities for community members to share their views and opinions easily. Both involved a good array of tools for involving people in the community by using discussion and observations.

Facilitation used data collection methodologies in ensuring that data and all crucial information are collected. This was vital in preparation of community Action Plan. However, before commencing of the study facilitators shared a detailed plan showing methodologies planned for use in the exercise.

1.3.4.2.3 Data Analysis Methods

The focus for the CNA team members were on processing the data and writing CAN profile for the village.

1.3.4.2.3.1 Methods and Procedures in CNA Data Processing

1.3.4.2.3.1.1 Coding and Data Entry

This was one of the methods used in processing the CAN data collected from the village. The work was simplified by ensuring that the person who is recording data in the field is coding it straight away. Therefore, at the CAN profile creation point team members merely transfer the coded information to code sheets by counting straight from the checklist. Determination of coding procedures and selection of variables was strictly monitored, tabulated and the data elaborated upon.

Counting from the checklist and extracting data from the structured questionnaires required abundant time, CAN team members processed the data and results was then transferred to a data book (a daily records book with entries on all types of data that were collected as well as the tallying forms) whereby the frequencies were tallied. The advantage of this method was that, it is simple and produces immediate results without complicated equipments (only a calculator is needed).

Answers were assigned numerals and symbols so that the responses can be put into a limited number of categories or classes. Such classes were those appropriate to the research problem under consideration. The data were then analyzed using the Statistical Package for Social Sciences (SPSS) version 16.

1.4 Community Needs Assessment Findings

1.4.1 Household and Population Characteristics

The household population characteristics put into consideration the age, marital status of respondents, size and age structure. Since not all people were interviewed it

is believed that 30 people interviewed represent the village population characteristics. This analysis helped the PRA team to comment appropriately because population characteristics had a direct relationship to people understands, willingness to participate in development activities and sometime even the level of commitment, as determined by their experience and knowledge.

Participatory methods were used in data collection during the baseline survey. One of the tools used was Household Interview. The aim of using this was to gather information from individuals on how they perceive issues related to socio-economic development of their villages and households. In any village or community meeting, other information cannot be obtained, but if one will visit the area other issues will be observed. The concern could be on the type of houses, the rate of poverty per households and type and quality of water used. Sometime by just looking around household environment and kids you can get the exact picture which portrays the kind of society you are in, particularly on levels of poverty and prosperity.

1.4.1.1 Participation in Participatory Rural Appraisal

The participation in Participatory Rural Appraisal is made to the reference of the Community Needs Assessment in the village. It also includes villagers who asked questions, participants in drawing the village map and those who participated in Transect Walk. [Participation in the Community Meeting; Community Mapping and Transect Walk]. Relatively, the number of women participated in the whole process are less than Fifty percent as shown in the Table 6.

Table 6: Participation in the Community Meeting, Mapping and Transect Walk

Description	Male	Female	Total	% Female
Total number of attendee [Village Assembly]	99	48	147	33%
Villagers who asked questions	4	-	4	-
Participants in drawing Village Map	48	12	60	20%
Participation in Transect Walk	5	1	6	17%

Source: From field data, 2011

1.4.2 Age of Respondents

This analysis is based on all villagers, low resourced villagers and female villagers, female villagers are part and parcel of all villagers and also low resourced villagers, while all male interviewed are imbedded in low resourced villagers and all villagers. In other way there is a group of male high, medium and low resourced villagers who are not shown separately in this analysis and therefore the summation of Low resourced villagers and female villagers does not come with total of 30 interviewees, because the other group is hidden.

The very aim of categorizing in this way aim at comparing low resourced households to that of female villagers, because majority of the interviewees were low resourced, and since the aim is to deal with poverty, this type of categorization will increase the focus to the most poor in the community. The selection of this group of interviewees, however, was based on High, Medium and Low Resourced households in order to capture all groups of people in consideration.

Thirty percent of respondents were on the range of 30 – 39 years old; this was followed by the 20 percent of 20 – 29 years old. The age group with a relatively small proportional of the interviewees was 10 – 19 years by 7 percent. The proportional among low resourced villagers is different from all villagers, here the age group with the highest proportion was 20 – 19 with 17 percent and for women was 30 – 39 age group of 30 percent. This scenario shows that most of the interview was of age between 30 and 39. It is also interested to note that above 60 years age group occupy a significant figure of 20 percent.

Table 7: Age of Respondents

Age	All Villagers N = 30		Low Resourced villagers N = 14		Female Villagers N = 10	
	Total	%	Total	%	Total	%
10 – 19	2	7%	1	3%	1	3%
20 – 29	6	20%	5	17%	2	7%
30 – 39	9	30%	4	13%	3	10%
40 – 49	4	13%	2	7%	1	3%
50 – 59	3	10%	1	3%	1	3%
60+	6	20%	1	3%	2	7%
Others	-	-	-	-	-	-

Source: From field data, 2011

1.4.3 Marital Status of Respondents

Only 3 percent of the respondents are single all where low resourced households, married form the majority of interviewees by 63 percent comprising 33 percent low resourced village and 17 percent female villagers. The other significant group was polygamy comprised 17 percent under All Villagers; there is a small proportion of widowed and divorced. None of the female villagers are single and none divorced and 10 percent are widows.

Table 8: Marital Status

Status	All Villagers N = 30		Low Resourced villagers N =		Female Villagers N =	
	Total	%	Total	%	Total	%
Single	1	3%	1	3%	-	-
Married	19	63%	10	33%	5	17%
Polygamy	5	17%	1	3%	1	3%
Divorced	1	3%	1	3%	-	-
Widow	4	13%	2	7%	3	10%
Others	-	-	-	-	-	-

Source: From field data, 2011

1.4.3.1 Size of Household Population

The size of the household population determine the family size and the comparison between types of houses people are living in as well as the number of dependants. In the table below it shows that 30 percent of all villagers have a population size ranging from 4 – 5 people followed by 6 – 7 by 27 percent. This shows that the population size is more or less big as compared to the economic level and type of housing witnessed during the transect walk and in the focus group discussion. The proportional of the household size is almost the same to all the three categories, under consideration.

The population size is therefore important because it can help to measure the average size of the household, which in turn helps to weigh out the level of available social services such as water and health and also economic activities and responses of the entire population on that. It is important to note that without enough resources and economic capacity big family size they are prone to poverty that small size families.

Table 9: Size of the Household Population

Range	All Villagers N = 30		Lo w Resourced villagers N =		Female Villagers N =	
	Total	%	Total	%	Total	%
1 – 3	4	13%	3	10%	2	7%
4 – 5	9	30%	8	27%	2	7%
6 - 7	8	27%	7	23%	6	20%
8 – 9	6	20%	2	7%	1	3%
10+	4	13%	-	-	-	
Others	-	-	-	-	-	

Source: From field data, 2011

1.4.3.2 Education Level of Respondents

Majority of the respondents are primary school leavers as responded by 53 percent of all villagers, 30 percent of low resourced and 13 of female villagers. There is a significant figure for standard four but this includes below or above it, and most of them under this category are drop outs. It should be born in mind that this is not referred to the former Standard four of the Tanzanian Colonial education system which was changed in early seventieth. Illiterate is high in the village, if one can make comparison to the age of respondent most of which were of the middle ages, and with this rate of illiterate one can say education wise efforts are required to improve it. This is because of the fact that there is a direct relationship between the education level and understanding of the parent, to the sending and supporting their children to school.

Most educated citizens have positive attitude towards education compared to illiterate population in the same community. None of the respondent in Mumiramira has attended secondary education and colleges.

Table 10: Education level of the respondent

Number	All Villagers N = 30		Low resourced villagers N =		Female Villagers N =	
	Total	%	Total	%	Total	%
Standard four	5	17%	2	7%	3	10%
Primary school	16	53%	9	30%	4	13%
Secondary school	-	-	-	-	-	-
Illiterate	7	23%	4	13%	3	10%
College	-	-	-	-	-	-
Others	1	3%	-	-	-	-

Source: From field data, 2011

1.4.3.3 Other Education

Concerning other level of education figures shows that a considerable number of people have attended religious education, however, it is unfortunate that it was not mentioned is the reference made to Christianity or Islam. Some of them but minor have attended technical education, agriculture and business. Here at the end it is encouraging that a considerable number of people have been attending adult education this is critical in societies with a relatively high illiterate rate.

Table 11: Other Level of Education

Number	All Villagers N = 30		Low resourced villagers N =		Female Villagers N =	
	Total	%	Total	%	Total	%
Religious	9	30%	5	17%	3	10%
Teaching	-	-	-	-	-	-
Engineering	-	-	-	-	-	-
Agriculture	1	3%	1	3%	1	3%
Technical	3	10%	2	7%	1	3%
Business	2	7%	-	-	-	-
Adult Education	4	13%	1	3%	1	3%

Source: From field work, 2011

1.4.4 Economic Activities, Water and Health Services in Mumiramira Village

1.4.4.1 Transect Walk

The Community Needs Assessment [CNA] was aimed at coming up with issues which will facilitate company support in water supply in the village which in turn will boost health and economic Activities in the village. Transect Walk in Mumiramira was conducted to each hamlet namely: Malagara; Mukivumu; Karamba; Kabanga; Mumirama and Murusenge. During the survey a look was made on soils, vegetation. Services, activities, crops and settlements, the details of transect is as shown in Table 12.

Table 12: Transect Walk in Mumiramira Village

Hamlet	Malagara	Mukivumu	Karamba	Kabanga	Mumirama	Murusenge
Soil	Loam soft soils	Loam soft soils	Loam soft soils	Loam soft soils	Loam soft soils	Loam soft soils
Vegetation	Small bushes, natural and planted trees, tree fruits and crops	Small bushes, tree fruits, timber tree	Small bushes, natural and planted trees, springs	Natural and planted trees, bushes and spring	Small bushes, planted and natural trees and grassland	Natural trees and fruits, tall grass and small bushes
Services	Primary school, dispensary, Church, Mosque, Army Barrack, Shallow wells	Church and traditional wells	Market, church, shallow wells	Traditional wells and shallow wells	Primary school, Government Officers, tree nurseries	Church and traditional wells

Hamlet	Malagara	Mukivumu	Karamba	Kabanga	Mumirama	Murusenge
Activities	Cultivation of food and cash crops and livestock keeping	Cultivation of food crops and livestock rearing	Livestock keeping, farming and business	Farming and livestock keeping	Farming of food crops and livestock rearing	Farming of cash and livestock rearing
Crops	Maize, beans, banana plant, cocoyam, groundnuts and finger millets	Maize, beans, banana plant, cocoyam, groundnuts and finger millets	Maize, beans, banana plant, cocoyam, groundnuts and finger millets	Maize, beans, banana plant, cocoyam, groundnuts and finger millets	Maize, beans, banana plant, cocoyam, groundnuts and finger millets	Maize, beans, banana plant, cocoyam, groundnuts and finger millets
Settlements	Scattered settlement	Scattered settlement	Scattered settlement	Scattered settlement	Scattered settlement	Scattered settlement

Source: From field data, 2011

1.4.4.2 Historical Time Lines

1.4.4.2.1 Decade of 1993 -2003

There was good water supply and therefore enough water for domestic uses and animals, because of reliable rainfall. Mumiramira residents depend on natural sources of water which depend solely on rain, namely: streams; improved springs; and rivers. It was at this time when more shallow wells were constructed by HESAWA.

1.4.4.2.1.2 Decade of 2003 - 2011

Water supply was in average because rainfall was not sufficient enough to the last decade, however water supply was not a big problem because there still water in the springs. It was at this time when Shallow wells constructed by HESAWA were destructed because of the arrival of refugees from Burundi and Rwanda and some of

them were destroyed because of lack of funds as a result of mismanagement of funds by village water committees.

1.4.4.3 Water and Health Situation Trend Line

Figure 1 is water and health trends in the village, most of the issues discussed during the focus group discussion was specifically on the status of health, specifically occurrence of diseases while for water services the discussion was on availability of water from springs, shallow wells and streams, which is the main source of water for domestic uses in the village. It was made clear that there is a direct relationship between availability of rainfall and water for domestic use and also occurrence of diseases. The year with relatively sufficient rainfall, there is enough water and also occurrence of malaria. However, it should be noted that not every time the relationship between availability of water and diseases tall to each other, yet Mumiramira village is located in Humid Zone with permanent flow of streams and swampy areas.

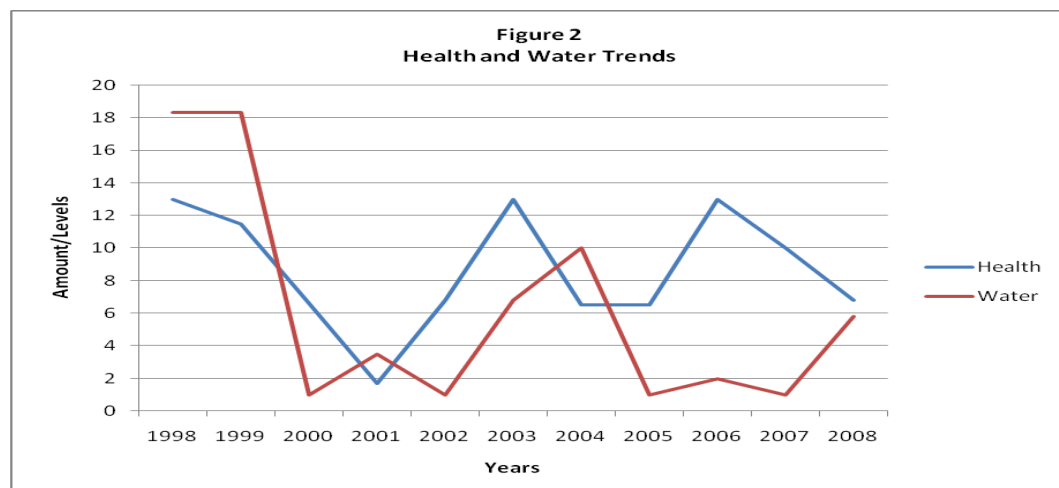


Figure 2: Health and Water Trend

Source: From field data, 2011

Health in the Figure 2 refers to occurrence of diseases, such as Malaria, Diarrhea and respiratory system related diseases. In case of water the reference is made to rainfall, springs, streams and natural and shallow wells present in the village.

1.4.4.4 Trend Line for Economic Activities

Farming in Mumiramira village depends solely on rainfall, and therefore it was said that agriculture productivity is a function of availability of rainfall in the village. More rainfall can lead to disaster while inadequate rainfall will lead to drought. Relatively sufficient rainfall lead to good harvest and therefore the trend line shows decreasing amount of rainfall from the late 1990s; where productivity in agriculture had been decreasing also. The trend line is labeled crops, but it referred to production of Beans, Maize, Cassava and Bananas and others, specifically green vegetables. The diminishing amount of rainfall has a negative consequence to the total production.

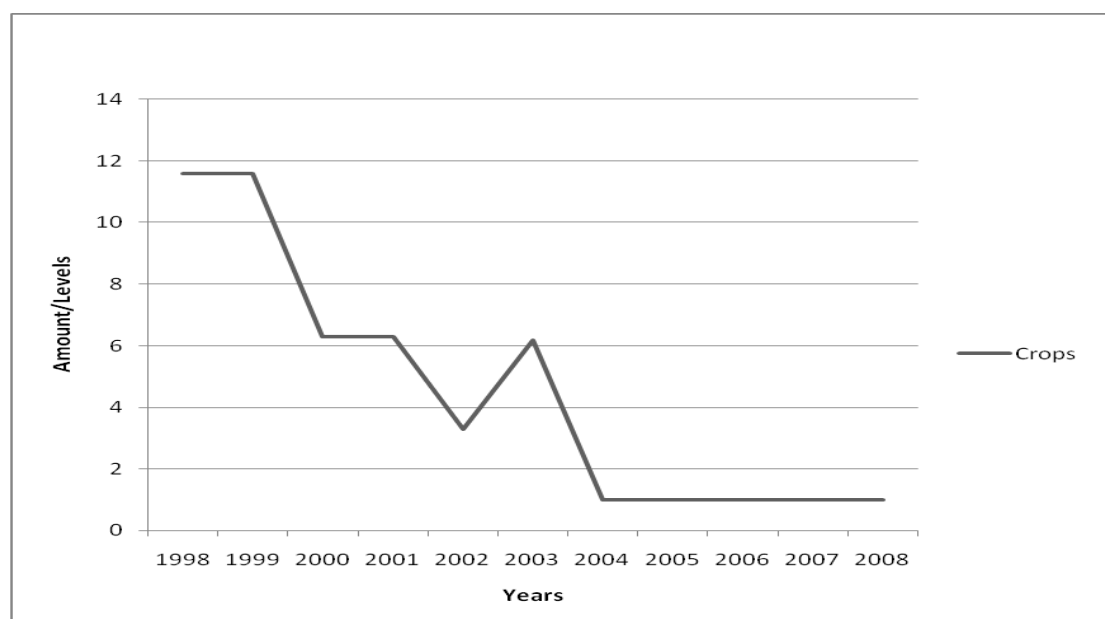


Figure 3: Trend Line Crop

Source: From field data, 2011

1.4.4.5 Access to Services and Involvement in Income Generating Activities

The life of human being depends much on the kind of activities people are conducting and the type of services they have access to. The level of income will determine the ability of accessibility to particular services. Poor people therefore are considered to be victims of curable and preventable diseases than rich people. The life of rural people in Tanzania is constrained mainly by lack of social services, either due to economic capacity to invest on them or the ability of people to access or distance people have to go for a service. Good health, good education, enough and reliable drinking water and communication networks all are prerequisite for better life. Good life is a necessity for poor and rich, women and men, adult and children. In case it happened that one of the most crucial services is missing the life of human being is in dilemma.

1.4.4.6 Access to Extension Services

Table 13: Access to Extension Services

Extension service	All Villagers N = 30		Low Resourced Villagers N = 14		Female Villagers N = 10	
	Total	%	Total	%	Total	%
Extension services – Agriculture	4	13%	2	7%	2	7%
Extension services – Livestock	2	7%	1	3%	1	3%
Extension services – Forestry	1	3%				
Community Development	1	3%				
Extension services – Health	3	10%			1	3%

Source: From field data, 2011

Poverty alleviation initiatives stem from individual efforts the amalgamation of which facilitate national and community efforts. If individuals are not involved and committed in this initiatives poverty will prevail for ever. Each and every person has specific

specialization but her or his requirement is beyond that and therefore a need to cooperate with other expertise in facilitating development activities. Extension services aimed at providing understanding and skills in farming, livestock, health, forestry and community development.

1.4.4.6 Access to Health Services

None of the residents in Mumiramira village attend hospital service in a nearby hospital, however, 97 percent rely on dispensary, thanks, that there is a dispensary in the village. Health services cost was said to be expensive by 50 percent of the respondents and 23 percent did mention that they depend on traditional medicine [herbalists] for treatment. Few have mentioned that the quality of health services are poor and only 7 percent had the opinion that health services delivery are just normal. The trend is uniform for all other categories of Low resourced and female villagers [Table 1.33].

Table 14: Access to Health Services

Health Facility	All Villagers N = 30		Low Resourced Villagers N = 14		Female Villagers N = 10	
	Total	%	Total	%	Total	%
Hospital	-	-	-	-	-	-
Dispensary	29	97%	15	15%	10	33%
Traditional medicine [herbalists]	7	23%	4	13%	2	7%
Expensive health services	15	50%	6	20%	7	23%
Poor health services	3	10%	2	7%	1	3%
Others [Normal]	2	7%	-	-	2	7%

Source: From field data, 2011

1.4.4.7 Seasonal Calendar in Mumiramira Village

Participatory Rural Appraisal methodologies use Seasonal Calendar as a means of understanding and reminding participants the use of their time in a year. This is

important because it help outsiders know exactly the time when villagers are busy and when they in leisure. This makes possible to plan appropriately when it comes that contribution in form of labour is required from the local population, thus it is important note to plan joint activities when villagers are busy. In addition to that, it assists in understanding the period when people have money and when they do not have, hence, when residents can contribute in cash or in kind etc.

Table 12 is a Seasonal Calendar of Mumiramira Village, where the analysis is made on the events in relation to water, health and economic activities. The table therefore shows annual time use by the villagers, when they are busy and when they can relax, thus available for other economic activities. There is two bimodal rainfalls in the village, the short rains of September – December and the long rains of January – May. Rivers are contaminated after short rains and during long rains, the reasons behind this contamination is directly associated with lack of pit latrines in the village, people tend to go the bush, and this is washed to the river during rain season and hence contaminating water. Shallow wells built by Oxfarm have enough water all the year round, in the natural spring diminish during dry season.

People are faced with respiratory problems from January to March; Malaria is prevalent from October – December and from March to April. On economic activities the consideration was on agriculture production since this is the main economic activity in the village. The main crops cultivated in the village were mentioned to be beans [the main cash crops]; maize; groundnuts and finger millets. The time for planting, weeding and harvesting is as shown in the Table 12 Mumiramira Seasonal Calendar.

Table 15: Mumiramira Village Seasonal Calendar

Activity	Month											
	Ja n	Feb	Ma r	Ap r	Ma y	Jun	Jul	Agt	Se p	Oct	No v	Dec
WATER												
Rainfall	Long Rains								Short rains			
Rivers	Contaminated water					Less water						
Shallow wells [Oxfarm]												
Natural Springs												
HEALTH												
Malaria												
Diarrhea												
Respiratory infection												
ECONOMIC ACTIVITIES												
Beans – Planting												
Weeding												
Harvesting												
Maize – Planting												
Weeding												
Harvesting												
Groundnuts – Planting												
Harvesting												
Finger Millet – Planting												
Harvesting												

Source: From field data, 2011

1.4.4.8 Access to Water Services

Access to water services is one of the most important services in the household. Every family needs water as near as possible to their households. Access to water sources or its availability determines time people have to spend into other economic

activities. However, it is unfortunate that drawing water from its sources to the consumer is expensive and therefore majority of rural people in Tanzania, still depend on traditional sources of water which was the case of Mumiramira, where people depend from natural springs; streams; shallow well [constructed by OXFARM] and traditional wells.

Table 17: Pair Wise Ranking Matrix Water

OPPORTUNITY	River Kiluluma	OXFARM Wells	HESAW A wells	Traditio nal wells	Natural Springs	Mar k	Ran k
River Kiluluma		OXFARM Wells	HESAW A	Tradition al wells	Natural springs	0	5
OXFARM Wells			OXFAR M	OXFAR M	OXFAR M	4	1
HESAWA wells				HESAW A	HESAW A	3	2
Small Traditional Wells					Tradition al wells	2	3
Natural Springs						1	4

Source: From field data, 2011

Table 16 is Access to Water Service in Mumiramira village, looking on the table it shows that 43 percent of respondents get water near their households, among All Villagers, while 47 percent get water far from their household. In these two main groups 37 percent fetch water from improved springs and shallow wells and 27 percent depend on natural wells, dug manual by villagers. In this direction improvement of water services in the village might not be complicated and expensive because water sources are within village land.

Table 16: Access to Water Services

Sources of Water	All Villagers N = 30		Low Resourced Villagers N = 14		Female Villagers N = 10	
	Total	%	Total	%	Total	%
Inside the house	-	-	-	-	-	-
Near the household	13	43%	5	17%	4	13%
Far from the household	14	47%	7	23%	6	20%
Pipe water /shallow wells	11	37%	4	13%	2	7%
Natural wells	8	27%	3	10%	4	13%
Others [Streams]	-	-	-	-	-	-

Source: From field data, 2011

1.5 Community Needs Prioritization

In prioritizing community needs a pair wise ranking matrix was conducted. The aim of this exercise was to come out with one item to be used for further analysis and preparation of action plan for project implementation. Pair wise ranking was done separately for health services, for water services and for economic activities then a pair wise ranking for all the three major issues was conducted and came out with the community's felt need. It should be known that to plan is to choose, since it is impossible to solve all problems at once, and therefore a need of making priority.

Table 17 is a Pair Wise Ranking Matrix for water services; here opportunities in water were ranked to each other, the one with the highest mark become the first in priority followed by the second, third, fourth etc. It should be noted that all

opportunities are vital in the village because they have been saving the village in one way or another. The fact of making priority stemmed from scarce resources, which is not always sufficient and therefore it is important to make priority. The rank one priority will then be taken for further analysis and the preparation of Community Action Plan if a program for water is to be designed.

Table 18: Pair Wise Ranking Matrix Health

OPPOR TUNITY	The dispens ary	Medical Personne l	Drugs and Medicine	Mother and Child Health	Vaccinati on	Staff Houses	Mar k	Ra nk
The dispensar y		Dispensar y	Dispensar y	Dispensar y	Dispensar y	Dispensar y	5	1
Medical Personnel			Medical personnel	Medical personnel	Medical personnel	Staff House	3	3
Drugs and medicine				Drugs	Drugs	Staff House	2	4
Mother and Child Service					Vaccinati on	Staff House	0	6
Vaccinati on						Staff House	1	5
Staff house							4	2

Source: From field data, 2011

The concentration of opportunities on health services are all associated with health service institutions. This means villagers depend totally on available health facility to improve their health. In this regard though it is important to improve the health

facility, it is important that a care should be taken to make sure that other health issues should be accommodated if the programme for health improvement is to be designed.

Table 19: Pair Wise Ranking Matrix Economic Activities

OPPORTU NITY	Land and farms	Groun dnuts	Goats	Coopera tive society	Bee keeping	Fishin g	Mar k	Rank
Land and farms		Farm	Farm	Farm	Farm	Farm	5	1
Groundnuts			Ground nuts	Groundn uts	Ground nuts	Ground nuts	4	2
Goats				Goats	Goats	Goats	3	3
Cooperative society					Coopera tive	Cooper ative	2	4
Bee keeping						Bees	1	5
Fishing							0	6

Source: From field data, 2011

Table 19 is a Pair Wise Ranking Matrix for Economic Activities, since the main economic activities of people in the village is farming, then land and associated opportunities has taken a lead in this section. The only non-farm activity mentioned here is bee keeping and cooperative society. It is important that other issues should be related in the programme aimed to improve economic situation activities in the village. Nevertheless what is prevailing in the village should be given the first priority.

Table 20 is a Pair Wise Ranking Matrix for Water, Economic Activities, and health. Since there are three main areas of concern to be dealt with but resources are scarce, the community had to choose one among them. In this exercise, water ranked the first among economic activities and health. The reason behind this is that, water accelerates bad health and poor engagement in economic activities. Women who are the most productive group in the community and children spend most of their time fetching water instead of engaging in productive economic activities. Health of the community deteriorates because of absence of sufficient clean and safe water leading to communicable diseases.

Table 20: Pair Wise Ranking Matrix for Water, Economic Activities, and Health

Opportunity	Economic Activities	Health	Water	Mar k	Ran k
Economic Activities		Health	Water	0	3
Health			Water	1	2
Water				2	1

Source: From field data, 2011

In this regard, the project to be implemented will be on Community Water supply. The information obtained about health and economic activities will be used later when the community acquires funds to implement projects on health and economic activities.

CHAPTER TWO

2.0 PROBLEM IDENTIFICATION

2.1 Background to Research Problem

Water is a livelihood of the people, the surviving of the people depending solely on the excess and continuous availability and supply of fresh water which can be used for domestic purposes as well as for economic purposes. But time is not water friendly as time goes water become scarcity and more expensive, water is not enough for the whole community and water is not Actual for everybody.

previous researches on scarcity of water identifies that the scarcity of water is due to climate change which necessitate the shortage of water in some places the good example is in Mumiramira village located at Bugarama ward at Ngara district under which water supply deteriorates as times goes, the good example is the observation by the researcher that from 1993 to 2012 water supply deteriorate.

Increasing rainfall variability and prolonged droughts cause serious pressure in the country's available water resources. Severe and recurrent droughts in the past few years triggered a decrease in water flows in rivers and hence shrinkage of receiving lakes declines of water levels in satellite lakes and hydropower dams. Some perennial rivers have changed to seasonal rivers leading to shrinkage or disappearance of subsequent wetlands.

The water, on which the Mumiramira community depend on is a finite resource under pressure because of increasing climate change and variability, degradation due

to pollution, over-abstraction, and encroachment of water catchments for various land uses.

The current social and economic status of Mumiramira community is considered low by the community as a result of insufficient water supply in their community. Insufficient water supply was identified as their major problem through needs assessment and research done. During the needs assessment, community's priority was to improve water supply within the community.

2.2 Problem Statement

Despite the shallow wells constructed by HEWASA and OXFARM Only 43% of the Mumiramira community has access to water nearby their house while the other 47% had to walk a very long distance to have the access of water in which its health safety is not guarantee.¹

The burden of travelling long distances in search of water falls on women and children, spending an average of 2 to 5 hours a day in most of the project area. Communities, especially women, spend more time in fetching water instead of carrying out economic activities and thus, increase prevalence of poverty among the families. Most of their source for water are not guaranteed as many of them are rivers, spring water and seasonal dams under which their importance falls after the end of seasonal rainfall and left without no proper access to water for the whole period of drought season until the other rainfall season in which is still not

¹ Based on community needs assessment report of Mumiramira village.

guaranteed due to the continuous climatic changes that affect seasonal calendar of the village community.

Due to illiterate on water management, pollution of water sources increases dramatically and communities come to great risk of water borne diseases. There is high prevalence of communicable diseases especially in children. Children drinks dirty water from unimproved wells around the community, which increases the risk of contracting diarrhoea diseases.

In general water borne diseases prevalence is higher in Mumiramira village community and in a way of solving this problem, the main focus, is to identify the extent these problems affected the well being of the community and second, to find out possible and best ways on how to intervene the stated problem. In resolve the situation the project will focus on the supply of suitable water in Mumiramira village due to the fact that the scarcity of good supply of suitable water in Mumiramira village results to poor health, poor economic activities, and poor education hence poverty and diseases which will lead to depopulation in the village through death.

Therefore the project will focus on the improving access to community water supply in Mumiramira Village located at Ngara district, Kagera region.

2.3 Project Description

2.3.1 Target Community

The beneficiaries of this project are Mumiramira village members and there will be fully community participation in the project implementation. The nature of the

project needs some knowledge of project formulation and water management skills as well as shallow wells construction knowledge.

Focus group discussion members have been trained in the water resources and management. The aim is to build capacity of the community to manage, run and sustain the self made projects on water supply properly, skills, simple book keeping and management, environmental protection as well as sanitation and hygiene issues.

2.3.2 Stakeholders

Stakeholders involved in this project were as follows:

- i) Mumiramira village Community are the first stakeholders of this project. Their role is to fully participate through contribution of the resources available such as funds for payment of the local technicians and locally available materials. They should also participate in monitoring, evaluation and management of the project. This will result into smooth implementation of the project, sustainability and improving health and economic well being of the community.
- ii) Village government are very important stakeholders as the ones who link the community and other stakeholders. Their major role is to mobilize and organize the project activities as well as leading the whole process of the project.
- iii) The district Water Engineer provided technical support in water supply related issues to the communities. These include, designing, planning, implementation as well as monitoring and evaluation of the project activities.

- iv) The District health officer provides technical support to the community. This includes training especially in health related issues during the project implementation.
- v) Kabanga Nickel Company Ltd, GAD Consult and Ngara District Council are expected to proceed to provide financial assistance and technical skills during the project implementation.
- vi) CED Student: The role of Community Economic Development (CED) student was to support the group in management and administration, design of the project, implementation, monitoring and evaluation of work done.

2.3.3 Project Goal

The major goal of this project for Mumiramira village communities is to improve access to community water supply and improve health and living standard of the community.

This project is geared to improve social and economic status of the Mumiramira community. The project is likely to achieve the expected goal because of the current status of implementation and the will of the community towards the project.

2.3.4 Project objectives

2.3.4.1 Main Objective

To improve access to safe drinking water through water resources development intervention

2.3.4.2 Specific Objectives

In order for Mumiramira village community members to have sustainable water supply closer to their homes as well as improve their living standards, the project need to meet the following specific objectives;

- i) To increase the proportion of people with access to clean and safe drinking water from 43% to 65% by December, 2012.
- ii) To improve community health status through Community sensitization on
- iii) Hygiene promotion and training on sanitation measures.
- iv) To build the capacity of Mumiramira community in water schemes management.
- v) To build the capacity of Mumiramira community in project write up and development.

2.4 Host Organization

The host of this project is Mumiramira village focus discussion group.

2.4.1 The Vision of the Organization

Is: "Community with water access towards improved health and living standard"

2.4.2 The Organizational Mission

To enable Mumiramira village community improve their health and economic status through accessible and sustainable clean and safe water closer to their homes by themselves.

2.4.3 Role of the Organization

The major components that the group facilitated during the project implementation including organization of the project activities, mobilization of the human resources (communities), materials for construction work as well as training of key personnel who will work in the project.

Other organizations and institutions expected to fully participate in this project include GAD consultant and Kabanga Nickel Company Ltd. District Council was also expected to fund the project and provide technical assistance through district water engineer's office as well as community development and health departments.

CHAPTER THREE

3.0 LITERATURE REVIEW

3.1 Introduction

Many authors have comments and writes on the need and importance of community water supply touching the problem globally and nationally. The previous authors of literature this project review put the knowledge required for the planning, organisation and the success of this project. This chapter highlights on theoretical literature which different authors have written on the same activity. Empirical literature reviews how other related projects in various areas in Tanzania were implemented and the lessons learnt from those projects. Finally, the chapter reviews regional and national policies designed to provide framework to this project.

3.2 Theoretical Literature

3.2.1 Access to Water

Access to water is regarded in the world as a right as every human being existed in the world has a right to access to clean and safe water. General comment No. 15 states that “ The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses”(General Comment No. 15 2002).

In cementing the need and importance of accessibility to water Dr. LEE Jong-wook comments that water and Sanitation is one of the primary drivers of public health. I often refer to it as “Health 101”, which means that once we can secure access to clean water and to adequate sanitation facilities for all people, irrespective of the

difference in their living conditions, a huge battle against all kinds of diseases will be won (World Health Organization, 2004).

Also in connecting the accessibility of water and other related health problem Kofi Annan (the former United Nations Secretary-General) has this to say “We shall not finally defeat AIDS, tuberculosis, malaria, or any of the other infectious diseases that plague the developing world until we have also won the battle for safe drinking water, sanitation and basic health care” (The World Water Council, 2013).

Furthermore the Dublin statement on Water and sustainable Development 1992, also addresses: "fresh water is a finite and vulnerable resource, essential to sustain life, development and environment. Women play a central part in the provision, management and safeguarding of water, water has an economic value and should be recognized as an economic good" (European Commission, 1998).

As access to water is regarded as important and a human rights and a cause of a lot of plagues to the developing countries the United Nations states that, 1.1 billion people have no access to water supply (WHO/UNICEF/WSSCC ; 2000). Inadequate access to safe water is at the root of poverty; in whatever way they are defined as they are both a symptom and cause of poverty. This is due to the following reasons; people's health suffers due to inadequate clean and safe water. In addition, time taken to collect water puts a huge drain on family resources. There is close relationship between poverty and water supply. In other words, “water is life”. The influence and potential impact of water and sanitation cuts across all the Millennium

Development Goals and making it possibly the most important single area of intervention; to face the crisis, the United Nations formulated an amount of so called Millennium Development Goals, dedicated to reduce poverty and ensure sustainable development. Goal number 7, target 10 is the following one: "Halve, by 2015, the proportion of people without sustainable access to safe water and basic sanitation." The year of reference for this goal is 1990. In order to meet the water supply and sanitation target, an additional 260 000 people per day up to 2015 should gain access to improved water sources and an additional 370 000 people should gain access to improved sanitation (WHO 2004, Facts and Figures). Moreover the world water council's general Assembly in 2012, a strategic vision for a water secure world was presented. It served as a stepping stone to the present document. done for the members by the members with the aim to reinvigorate the council capacity to produce new water policies worldwide, the World Water Council 2013-2015 strategy aims to continue to make real progress on securing water for the betterment of humankind (World water council 2013-2015 strategy, 2012).

Dinar (2010) Observes that Climate change is anticipated to change the variability of water supply, as well as its expected magnitude. Previous studies have focused mainly on water scarcity, measured in terms of mean precipitation or per capita water availability in the country, as a trigger for conflict or cooperation. The authors find that small-to-moderate increases in variability create an impetus for cooperation, although large increases in variability would reduce incentives for treaty cooperation. Stronger diplomatic and trade relations support cooperation, while uneven economic power inhibits cooperation. Various measures of

democracy/governance suggest different impacts on cooperation across the basin riparian. The findings have policy implications in the context of preparedness for impacts of climate change on the water sector.

The Global Water Supply Assessment (2000 report) shows that, the total number of people in Africa with access to water supply has increased considerably over the year. Also Brian Mathew (2005), comments that 135 million people in Africa gained access to improved water supply between the years 1990-2000. The majority of these people (87 million) were in urban areas. The report also shows that, the African population is expected to increase by 65% over the next 25 years. This presents a huge challenge to services in the region. To achieve the year 2015-millennium development goal for urban water supply coverage, the percentage of those without access and additional 1.8 million people over the next 15 years will have to be provided with the service. In rural areas, an estimated additional 94 million people will need to have access to meet the target. Therefore, a total of approximately 400 million additional people will need to be provided with access to improved water supply to meet the 2015 MDGs target.

The welfare implications of safe water and sanitation cannot be overstated. The economic gains from provision of improved services to millions of unsaved Africans is enormous. The international adoption of Millennium Development Goals brought the inadequacies of service provision sharply into focus. With only 58% and 31% enjoying access to water and sanitation services respectively, Sub-Saharan Africa is the only continent that is off-track in achieving the MDGs in 2015. The problem is compounded by the fact that a rigorous and credible baseline did not exist on

coverage to improved water and sanitation and resources required to meet the MDGs (World Water Council 2013 -2015 strategy).

Also Banerjee and Morella (2011) provide the challenges to the water and sanitation sectors within the urban and rural areas and deepen understanding of drivers of coverage expansion in the context of financing, institutional reforms, and efficiency improvements. The challenges differ to a significant extent among African countries and solutions must be tailored to individual national or regional conditions. Finally, they establish the investment needs for water and sanitation with a target of meeting the MDGs and compares with the existing financing envelopes, disaggregated by proportions that can be recouped by efficiency gains and net financing gaps.

3.2.2 Water Resources

3.2.2.1 Late Colonial Period

In the 1950s the few settlements with piped water supply charged for water sold at water kiosks or through residential connections. In rural areas systems were operated and maintained by cooperatives, such as the Makonde Water Development Cooperation in the Mtwara region of Southern Tanzania. One of the promises of the independence movement at that time was to provide water for free, a promise that was kept when Tanganyika gained independence in 1961.

3.2.2.2 Ujamaa

Ujamaa: Top-down projects and free rural water supply (1964–1991); after the union of the former British colonies Tanganyika and Zanzibar to form the United Republic

of Tanzania in 1964, then President Julius Nyerere implemented a policy of African Socialism called Ujamaa. This included the forced resettlement of dispersed rural smallholders to collective farms. One of the stated objectives of the resettlement was to facilitate the provision of education, health services as well as water supply (Time Magazine, Jan. 27, 1975). In the spirit of the Ujamaa the government launched a 20-year Rural Water Supply Programme (RWSP) in 1971 with the aim of providing access to adequate and safe water supply within a walking distance of 400 meters from each household by the year 1991.

Under this programme, water was provided free of charge in rural areas, while moderate tariffs were charged for house connections in urban areas. Implementation was highly centralized: In 1972 the central government abolished local government authorities that were replaced by central government representatives in committees at the district and village level under a policy that was ironically labeled "decentralization" (PMO-Ralg, 2010). Donors supported the program by funding more than 80% of investments in water supply during the 1970s (Mashauri D.A and Katcko T.S).

According to a report by Water Aid, "the resulting water projects were unsustainable and left a legacy of distrust among villagers for government programmes". Villages were selected based on purely technical criteria by the district water department without consultation with communities. Deep boreholes were drilled and equipped with pumps and diesel engines that should have been maintained by the government using central funds. This did not work well and many of the pumps were inoperable (Jarman J and Johnson C, (1997).

3.2.3 Legal Framework

The legal framework for water supply and sanitation in Tanzania is based on the *Water Supply and Sanitation Act Nr. 12* enacted in May 2009. The Act outlines the responsibilities of government authorities involved in the water sector, establishes Water Supply and Sanitation Authorities as commercial entities and allows for their clustering where this leads to improved commercial viability. It also provides for the registration and operation of Community Owned Water Supply Organisations and regulates the appointment of board members.

3.2.4 Responsibilities of Institutions at the National Level

3.1.4.1 Ministries

The Ministry of Water and Irrigation (MoWI) is the agency responsible for overall WSDP policy setting, co-ordination, monitoring, evaluation and regulating community water supplies (GTZ, 2008). The promotion of hygiene and sanitation is in the hands of the Ministry of Health and Social Welfare. Decentralization in the Tanzanian water and sanitation sector has shifted responsibilities for service provision to Local Government Authorities (LGAs). LGAs comprise 132 municipal, district, and town councils: they are responsible for the procurement, financing, management and monitoring of service providers in their administrative area (Water Sector Performance Report, 2007/2008).

Other ministries play an active role in the water and sanitation sector. The Ministry of Finance and Economic Affairs (MoFEA) oversees intra-government funding and is responsible for the overall planning and budgeting, including the water and sanitation sector. The Ministry of Education and Vocational Training is responsible

for hygiene education and the provision of sanitation in schools. Sector ministries are responsible for the use of water resources for irrigation, industrial use and energy generation.

3.2.5 Cooperation Between Ministries

In 2009, the Ministry of Health and Social Welfare, MoWI, the Ministry of Education and Vocational Training and PMO-RALG signed a *Memorandum of Understanding* for the integrated implementation of sanitation and hygiene activities. The aim of the MoU was to facilitate their cooperation and co-ordination in carrying out their responsibilities related to sanitation and hygiene. Co-operation will occur through the National Sanitation and Hygiene Steering and Technical Committees (Ministry of Water and Irrigation, 2009).

3.2.6 Economic Regulation

Commercial water service providers are regulated by the *Energy and Water Utilities Regulatory Authority* (EWURA) established in 2001 by the *Energy and Water Utilities Regulatory Authority Act, Cap 414*. EWURA is responsible for licensing, tariff review and approval, performance monitoring and standards.^[34] It started operating in the water sector in 2006.

3.2.7 Environmental Regulation

Screening of possible environmental impacts on proposed project sites is carried out by the National Environment Management Council (NEMC) as part of the Environmental and Social Management Framework. NEMC is responsible for

setting standards and issuing permits for the discharge of effluents into the environment, including into water resources weeds (National Water Sector Development Strategy 2006 to 2015).

3.2.8 Service Provision

3.2.8.1 Urban Areas

In cities, the maintenance and development of water and sewerage infrastructure is carried out by Urban Water and Sanitation Authorities (UWSSAs). UWSSAs are autonomous legal entities that are meant to operate on the basis of commercial principles. They have been established in 19 major urban cities in accordance with the *Waterworks Act No. 8* of 1997. In 2001, the Dar es Salaam Water and Sewerage Authority - DAWASA - was established to service Dar es Salaam and two districts of Pwani Region (AMCOW,2006).

3.2.8.2 In Districts and Small Towns

In 2007, MoWI launched a process of clustering affecting over one hundred utilities, the District Urban Water Supply and Sanitation Authorities (DUWSSAs). Its aim was to increase the quality and efficiency of service. However, as of 2012 clustering had made little process because it runs counter to the on-going overall decentralization process. Donor agencies such as GTZ have thus stopped their support for clustering. Urban and district water utilities are not responsible for on-site sanitation, which remains in the hands of the relevant local council (National Water Sector Development Strategy 2006 to 2015).

3.2.8.3 Rural Areas

In rural areas, water supply and sanitation services are provided by community Owned Water Supply Organizations (COWSOs). They have been established through the local government framework of village councils following the adoption of the Water Sector Development Strategy. Out of 10,639 villages, 8,394 had a Water Committee dealing with issues in the water and sanitation sector as of 2007 (Water Sector Performance Report for the Year 2007/2008).

The role of COWSOs is to operate and maintain the water supply systems on behalf of the community. They are expected to meet all the costs of operating and maintaining their water supply systems through charges levied on water consumers, and to contribute to the capital cost of their systems. The main sources of capital investment are block grants to local government authorities, disbursed by the Regional Secretariat. There are two main types of COWSOs: Water Consumer Associations (Vikundi vya Huduma ya Maji), who are responsible for drinking water supply and Water User Associations (Vikundi vya Watumiaji Maji), who are responsible for water resources and for solving conflicts among water users. As of 2006, 121 Water User Associations have been established (Water Sector Status Report 2009).

Water supply and sanitation in Tanzania is characterized by: decreasing access to improved water sources in the 2000s (especially in urban areas), steady access to some form of sanitation (around 93% since the 1990s), intermittent water supply and generally low quality of service (Water Sector Status Report, 2009). Many utilities

are barely able to cover their operational and maintenance costs through collection of revenues due to low tariffs and poor efficiency. There are significant regional differences and the best performing utilities are Arusha and Tanga (Public Expenditure Review of the Water Sector, September 2009).

The Government of Tanzania has embarked on a major sector reform process since 2002. An ambitious National Water Sector Development Strategy that promotes integrated water resources management and the development of urban and rural water supply was adopted in 2006. Through decentralization, much responsibility for water and sanitation service provision has been shifted to local government authorities and is carried out by 20 urban utilities and about 100 district utilities, as well as by Community Owned Water Supply Organizations in rural areas (Water Sector Status Report, 2009).

These water sector reforms have been backed by a significant increase of the budget starting in 2006, when the water sector was included among the priority sectors of the National Strategy for Growth and Reduction of Poverty MKUKUTA. The Tanzanian water sector remains heavily dependent on external donors: 88% of the available funds are provided by external donor organizations (NWSDS, 2006-2015). Results have been mixed. For example, a report by GTZ notes that "despite of heavy investments by the World Bank and the European Union, (the utility serving Dar es Salaam) has remained one of the worst performing water entities in Tanzania (WSSSR, 2008: PP 8-9). But despite significant investment in the rural water sector since the early 1970, only 53% of rural population in Tanzania has access to a

reliable water supply service and over 30%) of rural water schemes are not functioning properly. Support was provided in a fragmented fashion, and little emphasis was placed on sustainability (The United Republic of Tanzania, Ministry of Water 2003).

Adequate and sustainable access to safe and clean water plays a critical role in supporting livelihoods and ensuring health in Tanzania. There are disparities in access to water between urban and rural areas, across regions and even within the districts. The country target by 2010 is to increase access to clean, affordable and safe water from 53% to 65% (NSGRP 2005).

The water, on which we are dependent for our own survival, is a finite resource under pressure because of increasing climate change and variability, degradation due to pollution, over-abstraction, and encroachment of water catchments for various land uses (e.g. agriculture, urbanisation and industrial development). This scarcity and vulnerability has negative impacts on important watershed and recharge areas, as well as wetlands (URT, 2011).

Access to water and sanitation remains low in Tanzania. Determining data on access is particularly difficult because different definitions and sources are used, which results in significant discrepancies. According to a report, household surveys regularly return lower rural water supply coverage than estimates by the Ministry of Water and Irrigation (which are collected by district water engineers and urban water and sanitation authorities). For urban areas, survey data are consistently higher

because they also include households that are not connected to the formal water supply network and access water from neighbours, protected wells or boreholes (REPOA,2007).

3.2.9 Water Supply

Slightly more than half the population of Tanzania is estimated to have access to an improved water source, with stark differences between urban areas (about 79% in 2010) and rural areas (about 44% in 2010) (WHO/UNICEF,2012). In rural areas, access is defined as meaning that households have to travel less than one kilometre to a protected drinking water source in the dry season. Trends in access to water supply are difficult to discern due to conflicting and unreliable data. However, it seems that access increased during the 1990s, particularly in rural areas, but stagnated during the 2000s.

According to data from the Household Budget Surveys 2000/2001 and 2007 access to an improved water source in mainland Tanzania even decreased from 55% in 2000 to 52% in 2007. Using a narrow definition, in 2007 around 34% of households had access to piped water, as opposed to 40% in 2000. However, using a broader definition of access that also includes standpipes and protected springs, there has been a slight increase in the proportion of households reporting a drinking water source within one kilometre.

3.2.10 Sanitation

National Household Budget Surveys ask respondents about the type of sanitary facility they have. In 2007 93% of Tanzanians responded that they had some form of

latrine, but only 3% had a flush toilet. International statistics that monitor the achievement of the Millennium Development Goal for sanitation are based on these numbers, but only after making some important adjustments in an effort to achieve comparability across countries.

The Joint monitoring Program for Water Supply and Sanitation (JMP) defines improved sanitation as excreta disposal systems that are private and that separate human excreta from human contact. Shared latrines or open pit latrines are excluded from this definition. The JMP estimates that only about half the latrines in Tanzania can be considered improved sanitation systems. Based on that definition, access to improved sanitation is much lower than the population with access to any type of latrine. According to the JMP definition, access to improved sanitation was only 10% in 2010, up from 8% in 1990, with an increase in urban areas and a slight decrease in rural areas.

3.2.11 Continuity of Supply

According to the Water Sector Status Report 2009, of the twenty Urban Water Supply and Sanitation Authorities (UWSSAs) that operate in Tanzania, three are able to provide continuous water supply (Arusha, Songea and Tanga). In eleven other cities water is supplied for at least 19 hours. In Babati and Mtwara there is water supply for 12 hours per day. The lowest figures (5 hours per day) come from the cities of Kigoma, Lindi and Singida. In Dar es Salaam water is supplied on average for 9 hours per day.

3.2.12 Water Quality

Water quality varies significantly within the country. In the semi-arid regions (including Dodoma, Singida, Tabora, Shinyanga and Arusha), colour and turbidity levels become problematic during the rainy season. Rivers in the fluoride belt (including Arusha, Kilimanjaro, Singida, and Shinyanga regions of the Rift Valley, and extending to the Pangani and Internal Drainage basins) have naturally high fluoride concentrations. The waters of Lake Tanganyika and Nyasa have overall good water quality except in the vicinity of urban areas where effluent and storm water cause local contamination, whereas the water quality of Lake Victoria is poor: high turbidity and nutrient levels lead to frequent blooms of algae and infestations of water weeds (National Water Sector Development Strategy 2006 to 2015).

3.3 Empirical Literature

3.3.1 The International Benchmarking Network for Water Sanitation Utility (IBNET)

The International Benchmarking Network for Water and Sanitation Utilities (IBNET) blue book creates a baseline and, at the same time, offers a global vision of the state of the sector in developing countries. By tracking progress in and quantifying and assessing the water supply and sanitation sectors, IBNET helps meet the goal of providing safe, sustainable, and affordable water and sanitation for all. First, it aims to raise awareness of how IBNET can help utilities identify ways to improve urban water and wastewater services. Second, it provides an introduction to benchmarking and to IBNET's objectives, scope, focus, and some recent achievements. Third, it elaborates the methodology and data behind IBNET and

presents an overview of IBNET results and country data.

By providing comparative information on utilities' costs and performance, IBNET can be used by a wide range of stakeholders, including utilities: to identify areas of improvement and set realistic targets; governments: to monitor and adjust sector policies and programs; regulators: to ensure that adequate incentives are provided for improved utility performance and that consumers obtain value services; consumers and civil society: to express valid concerns; international agencies and advisers: to perform an evaluation of utilities for lending purposes; and private investors: to identify opportunities and viable markets for investments.(Caroline/Alexander 2011)

3.3.2 PAMSIMAS

PAMSIMAS is the Indonesian Government's national program to deliver water supply, sanitation and improved hygiene practice to rural and peri-urban areas. The program is considered as the main vehicle for achieving the MDG target of halving the population without access to sustainable water supply and basic sanitation. PAMSIMAS works with communities to plan, finance, manage and maintain their own water supply and sanitation systems and improve hygiene behaviours. PAMSIMAS is delivered through the Indonesian Ministry of Public Works and is co-financed by Australia and the World Bank.

As of March 4, 2013, PAMSIMAS has improved water supply access to 4.8 million beneficiaries and improved sanitation access to 5.5 million beneficiaries. Over the last three decades, Indonesia has enjoyed substantial achievements in poverty reduction, human development and improvements in service delivery. However,

enormous challenges remain. Improving access to safe water and sanitation is a key priority, due to the severe consequences of poor sanitation infrastructure on public health, the economy, and the environment. . Difficult access to improved water supply also means that poor households, particularly women and children, spend too much time fetching water. The 1998 financial crisis led to little to no investments in water infrastructure, and the government has struggled As of March 4, 2013, the number of additional people with sustainable access to improved water facilities is 4,826,595 and with access to improved sanitation facilities are 5,516,847.

Approximately 49.83 percent of beneficiaries are women. The scale of the program is being doubled to include an additional 17 provinces and 100 districts. The project's achievements since 2006 are Nearly 7,000 (6,833) villages across Indonesia now enjoy access to clean water and improved sanitation, more than 44.91 percent of target communities have become Open Defecation Free (ODF), in line with the worldwide OD trend rate of 40 to 50 percent, more than 66.60 percent of communities have adopted. Maintain and upkeep of existing facilities. PAMSIMAS strives to improve existing facilities and expand sanitation access, through a community-based approach (The World Bank websites, 2013).

Before PAMSIMAS, the people in Jambu Baru village in South Kalimantan province could not enjoy healthy and clean rice, because they used unclean river water to wash and cook rice, as well as for other household needs. Jambu Baru resident Lian Nur explained that the water from the Barito village caused the rice to turn yellow, to emit an unpleasant smell, and to taste of river pollutants.

Therefore the project through community participation has change millions of Indonesian life as they are able to access clean water which boost their economy, health and wellbeing

3.3.3 SWASIP

The project is implemented in an arid and semi arid area where fewer than 50% of households have convenient access to safe water. In these districts people, primarily women, have to walk between 75 and 100 minutes to access water sources. In addition, more than 83.8% of the population in the program area does not have access to adequate sanitation facilities. The main objective of the project is to assists communities in managing their water resources. The project improves the health and living conditions of rural populations by increasing access to water for domestic and productive use. SWASIP also increases access to and use of sanitary water.

The project was implemented from august 2007 to September 2010 and the project was implemented by Aga Khan Foundation through its Coastal Rural Support Program Kenya the project focuses on women, children, and the poor in the 3 arid and semi-arid districts in Coast Province of Kinango, Kaloleni, Kilifi (Ganze) Districts.

Through SWASIP, Aga Khan and the local communities were acting together in designing and installing sustainable infrastructure for domestic water use and sanitation. This includes building small farm reservoirs (SFRs), rock catchments, and roof water harvesting tanks, enhancing community capacity to manage and utilize water resources for multiple use, enabling local organizations in 83 villages to

administer, operate and maintain water supply and sanitation infrastructure through training of Water User Associations (WUAs) and Community Resource Persons (CORPs), changing behaviours and practices to make communities and schools healthier, as well as building Ventilated Improved Pit Latrines.

The project succeed in building 9.3 Km of water pipeline complete with a water pumping system (benefiting over 14,000 people), 2 water storage tanks with communal water points, 46 VIP latrines and 22 urinals in 23 schools, benefiting over 8,050 pupils (48% girls), 9 small farm reservoirs (SFRs) have been excavated. Water storage tanks, lift and foot pumps and hand wells have been installed or constructed at these locations, 2 rock catchment facilities have been developed and will benefit 1,400 community members in 2 villages, 13 roof water harvesting systems, each of 10,000 litres capacity, have been installed in 13 schools benefiting over 6,500 pupils (48% girls), 47 water purification facilities and 70 hand washing facilities have been installed in 35 schools.

3.3.4 Nyakabale-Ausonzi Projects

This project is conducted at Uganda in the area of Nyakabale and Aushozi and impacted around 600 people. The community of Nyakabale is home to 360 households which are spread out along a shallow valley in Kiryandongo district, Uganda. The land in Nyakabale is very fertile and the great majority of residents are farmers who spend their days tending to their crops. Many people grow tobacco as a cash crop and harvest maize, beans and cassava root to feed their families. Nyakabale also hosts a large trading center where locals can buy all sorts of items ranging from cooking oil to beauty products. The small store fronts are where

people tend to gather to chat, debate or simply pass the time.

There is no health center, no school, no electricity and no clean water. People must walk great distances to reach any of those services. Due to the limited access to clean water, residents resort to collecting water from small, open pools which they often must share with animals. The water in these pools easily becomes contaminated because they are unprotected and it poses a great health risk to the population. Diarrheal diseases, such as typhoid, giardia and dysentery are often contracted and can prove fatal to young children. These and countless other diseases can be prevented simply through the provision of clean water. Busoga Trust, the implementing partner, were working with the people of Nyakabale to construct a shallow hand dug well and provide a safe source of water for hundreds of people.

3.3.5 Health through Sanitation and Water (Hesawa)

The HESAWA programme began in 1985 on the basis of Specific Agreement between Tanzania and Sweden in cooperation concerning rural water supply, environmental sanitation and health education. The programme area covers Lake Zone, made up of Kagera, Mara and Mwanza regions, which border Lake Victoria, including Ngara district.

The overall aim of this programme was to improve the welfare of the rural population through improved health education, environmental sanitation, drinking water supply, community participation, and capability and capacity building at

village and district levels. The pillars or Principles on which HESAWA activities are funded include: Affordability, Sustainability, Replicability, Credibility, and Cost-efficiency.

Since 1985 when the project started, HESAWA produced a marked impact in meeting its objectives, most of which is qualitative, given the nature of the programme. It aimed at creating a qualitative change of attitudes regarding Health through Sanitation and Water (HESAWA) using local resources .

To date, HESAWA has undertaken activities in more than 600 villages, spread over more than 180 wards. All 15 districts in the Lake Zone are undertaking HESAWA activities to some degree or other. The programme has expanded significantly during the past year or so. On the basis of village and other studies carried out, the major achievements of the HESAWA Programme can be summarized as follows.

3.3.6 WAMMA

During the five years up to March 1996, a collaborative partnership between the Tanzania Government and Water Aid helped a total of 86 communities in Dodoma Region. During the implementation the partnership formed coordination teams known as WAMMA. The acronym WAMMA represented four parties involved in the district team: WA- Water Aid, M-Maendeleo ya Jamii (Community Development Department, M-Maji (Water Department) and A- Afya (Health Department). Of the 6 water projects implemented in 1991-96, 5 were progressively satisfactorily (*Jarman, J and C.Johnson 1997*). Capacity building was a major

important component of WAMMA program. The WAMMA evaluation report showed that the intended outcomes of the project were reached as expected. For example, at the village level, it is clear that communities have acquired skills such as community. Organization, running public meetings and bookkeeping. They have also gained experience in project planning and management, resulting in a visible growth in a confidence on their own.

3.3.7 Shinyanga Water Supply project Case Study

In 1998, piped water distribution in Shinyanga was reaching only a third of the town's residents. The rest could walk to buy water from kiosks on the piped network or from one of the town's 16 or so tube wells, or pay even more to get it from vendors selling from handcarts. There were also a handful of community wells and an estimated 1600 private shallow wells in use in the town, mostly unprotected and with water that was usually too salty to drink.

These open wells were often close to pit latrines, and were thought to be the prime source of cholera that was killing hundreds of people during drought years. Oxfam responded to an appeal from the regional authorities and worked with local authorities and Non-Governmental Organizations (NGOs) to devise and implement a long-term solution.

Most of the work was done between 2000 and 2003 and the main donor was the UK's Department for International Development. The project has provided clean water and improved sanitation and refuses collection for 35,000 people in seven of Shinyanga town's 13 wards, where life became almost unsustainable during the dry

seasons. The town supply has been increased from a maximum of 6000 to 10,000 cubic metres per day.

This has reduced the cost of water, and the incidence of cholera and other water-borne infections. A community infrastructure has been built to support delivery and cost recovery for these services. Support staff has been trained in the regional water authority, Shinyanga urban water supply authority (SHUWASA), to carry the work forward into the future (Oxfam Tanzania).

3.4 Policy Review

The role of Parliaments in the future of water must be emphasized and consolidated. A specific study should help understand the specific needs of parliamentarians with a view to the effective set up of parliamentary water Helpdesk. Assistance in the development of water legislations and cooperation for budget planning are amongst the priorities which have already been identified (World Water Council, 2012).

Political decision makers need to demonstrate a genuine will to include water on the highest level. The Council has therefore placed much focus on expressing the Voice of Water and doing what has come to be known as ‘International hydro-diplomacy’. The water cause will only make progress as long as it is debated peacefully and objectively. This vision is along the lines of that of the United Nations whose Secretary-General, Ban Ki-moon, lent the Council his full support during an individual audience in October 2010 when he welcomed the Bureau delegation to the UN headquarters in New York. He complemented the President for transforming the

Council into a recognised and respected international organisation and asked the Council to be closely involved in the preparation of the Rio+20 Earth Summit in 2012 (world water council 2010-2012).

3.4.1 Water Policy Reform in India

Through policy reforms India has achieved considerable success in providing safe drinking water to about 85% of her rural population by tapping ground and surface water through 3 million hand-pumps, thousands of water supply schemes and traditional sources. Despite the impressive coverage of provision of safe drinking water facilities in the rural areas, there are certain areas of serious concern.

The issue of sustainability and maintenance of quality of water supplied are cited as the two major constraints in achieving the avowed objectives. In the years to come, the rural water supply program is sure to have serious challenges by way of meeting the expanding needs of a fast growing population, as well as the increasing demand of the population for higher service levels.

The adoption of the demand driven approach replacing the present supply focused approach is a pre requisite for evolving suitable cost sharing practices with active participation of the stakeholders. In this background, the report on the rural water supply and sanitation by the World Bank, as part of the Water Resources Management Work, dwells on the policy and constraint of this sector, as well as on institutional and financial issues related to the sector reform process, and advocates an approach to bring about radical reforms in the sector (world bank 1999).

3.4.2 Water Policy Reform in Guinea

Both consumers and the government benefited from reform of the water system in Conakry, Guinea, whose deterioration since independence had become critical by the mid-1980s. Less than 40 percent of Conakry's population had access to piped water low even by regional standards - and service was intermittent, at best, for the few who had connections.

The public agency in charge of the sector was inefficient, overstaffed, and virtually insolvent. In several ways, the reform introduced to the sector in 1989 under a World Bank-led project was remarkable. It showed that even in a weak institutional environment, where contracts are hard to enforce and political interference is common, private sector participation can improve sector performance.

Water has become very expensive, the number of connections has increased very slowly, and conflicts have developed between SEEG (the private operator) and SONEG (the state agency). Among the underlying problems are the lack of strong, stable institutions, the lack of an independent agency capable of restraining arbitrary government action, regulating the private operator, and enforcing contractual arrangements, the lack of adequate conflict resolution mechanisms for contract disputes and Weak administrative capacity (Menard, 2000).

3.4.3 Pakistan New Water Policy

For the first time in almost six decades, Pakistan has put together two major policies related with water use and conservation. The main goal of water policy is to asses access to drinking water to all at an affordable cost in an equitable, efficient and

sustainable manner and to reduce mortality and morbidity caused by water borne diseases.

The policy draft however has yet to satisfy all consumers' rights advocates who say that there are many issues such as rehabilitation of dysfunctional schemes, inequalities in access, modes of levying of user charges and locations where filtration plants are to be installed. The Consumer Rights Commission of Pakistan (CRCP), an NGO, says that every fifth Pakistan child under the age of five suffers from water borne diseases and that any new policy should be able to change the situation. CRCP adds that roughly 50 percent of mortality and 20 to 40 percent of hospital admissions are also caused by water borne diseases.

The water policy introduces the idea of rising user fees for cost recovery but stops short of privatizing water supply triggering another debate between advocates and supporters of privatization. The centrally formulated water policy makes provincial governments responsible for the service through special agencies that would be created in the cities and districts sub divisions.

3.4.4 Uganda Water Policy Reform

In Uganda the current institutional sector framework is based on several policy reforms in the water sector since the mid-1990s. Water supply and sanitation are recognized as key issues under the national Poverty Eradication Action Plan (PEAP), prepared first in 1997 and revised in 2001 and 2004. The PEAP is the key government document for fighting poverty through rapid economic development and social transformation (Poverty Eradication Action Plan 2004/5-2007/8).

The 1995 Constitution of the Republic of Uganda instructs the Ugandan State to take all practical measures to promote a good water management system at all levels and defines clean and safe water as one of its 29 objective (Uganda Constitution, 2005) The current legislative water sector framework was introduced with the 1995 Water Statute, which has the following objectives; Promotion of rational water use and management, promotion of the provision of a clean, safe, and sufficient domestic water supply to all people, promotion of the orderly development of water and its use for other purposes, such as irrigation and industrial use, among others, in ways that minimize harmful effects to the environment, pollution control and promotion of safe storage, treatment, discharge, and disposal of waste that may cause water pollution or other threats to the environment and human health (water statute,1995).

Finally, the National Water Policy (NWP), adopted in 1999, promotes the principles of Integrated Water Resources Management, a comprehensive approach to water supply. In addition, the NWP recognizes the economic value of water, promotes the participation of all stakeholders, including women and the poor, in all stages of water supply and sanitation, and confirms the right of all Ugandans to safe water (Uganda National water policy, 1999).

3.4.5 Kenya Water Policy Reform

The architecture of the water supply and sanitation subsectors in Kenya has undergone significant change in the last decade, in response to a slow deterioration of urban services through the 1980s and '90s. Initiated with a new Water Act in 2002, significant policy revision and restructuring of institutional roles is still

ongoing and will need to be aligned with the new Constitution of Kenya 2010. Most of the reform emphasis has been in the water supply subsectors, especially urban, but sanitation is now regaining emphasis with a new policy published in 2007 and a strategy and investment plan in development. These reforms of the enabling environment are beginning to yield impacts in the coverage and quality of services. Kenya's challenge is to finalize the reform of enabling aspects such as strategies and investment plans, further clarifying roles and responsibilities, at the same time as significantly scaling up resources and systems for implementing the development of new services on the ground.

The Kenyan ministry of water and irrigation (MWI) is the key institution responsible for the water sector in Kenya. The Ministry is divided into five departments: Administration and Support Services, Water Services, Water Resources Management, Irrigation, Drainage and Water Storage, and Land Reclamation. Water supply is overseen by the Department for Water Services, whose functions include: formulation of policy and strategies for water and sewerage services, sector co-ordination and monitoring of other water services institutions. The Ministry of Water and Irrigation is also in charge of overall sector investments, planning and resource mobilization (Kenyan Ministry of water and irrigation strategic plan 2009-20012)

3.4.6 Tanzania National Water Policy (2002)

The main objective of the revised national water policy is to develop a comprehensive framework of sustainable development and management of the nation's water resources, in which an affective legal and institutional framework for

its implementation will be put in place. The policy aims at ensuring that beneficiaries participate fully in planning, construction, operation, maintenance and management of community based domestic water supply schemes.

The national water policy of 2002 seeks to address cross- sectoral interests in water, watershed management and intergraded and participatory approaches for water resources planning, development and management. The structure of the policy contains three major sub sector issues namely; water resources management, rural water supply and urban water supply and sewerage. (Ministry of Water and Livestock Development- 2002). This project is in line with this national Water Policy.

3.4.7 The Tanzania Vision 2025

The Tanzania vision 2025 aims at achieving high quality livelihood for its people to attain good governance through the rule of law and develop a strong and competitive economy. Water is one of the most important agents to enable Tanzania achieve its Development Vision objectives (both social and economic).

These objectives are eradicating poverty, attaining water and food security, sustaining biodiversity and sensitive ecosystems. The revised national Water Policy, subsequent reviews and reforms of existing laws, institutional framework structures are aimed at meeting the objectives of this vision ((Ministry of Water and Livestock Development- 2002). So, the designed project is geared to attain the Tanzania 2025 development vision.

3.4.8 National Strategy for Growth and Reduction of Poverty (NSGRP)

The National Strategy for Growth and Reduction of poverty, known as MKUKUTA in Swahili (Mkakati wa Kukuza Uchumi na Kupunguza Umasikini Tanzania), was approved by the cabinet in February 2005 for implementation within five years. The National Strategy for Growth and Reduction of Poverty established by vision 2025 is committed to the achievement of Millennium Development Goals (MDGs). This strategy has an increased focus on growth and governance.

Additionally, it has as well playing roles as an instrument for mobilizing efforts and resources towards its outcomes. Income poverty status challenges mentioned in the National Strategy for Growth and reduction of Poverty highlights the importance of Water. Improved rural water supply coverage has increased to 53% in 2003. However, 47%) of rural household are using unprotected sources of drinking water. Moreover, a long distance to water sources entails heavy workloads on women and children. One of the National Strategy for Growth and Reduction of Poverty goals and targets is increase access to affordable clean and safe water. Additionally, it has to increase proportion of rural population with access to clean and safe water from 53% in 2003 to 65% 2009/10 within minutes of time spent on collection of water.

Not only that, but also to increase urban population with access to clean and safe water from 73% in 2003 to 90% by 2009/10 (Vice president's office, Poverty Eradication 2005). Therefore, following the above policies, the project is within the efforts of the Tanzania Government in economic development of the entire communities as well as poverty eradication. Improved access to community water supply is among those efforts.

The summary of Overseas Development Institute (ODI) on water policy program in Sub Saharan Africa showed that, if water related interventions for poverty reduction are to be meaningful, water objectives in PRSPs need to take account of water resources management as well as water supply and sanitation priorities. Improving access to water supply and sanitation is, of course, not just about tapes and latrines; it is about the people and institutions that use and manage them. The water sector has been dominated for many years by perspective emphasizing the health impact of improved water supply and sanitation. Sustainable livelihood analysis suggests interventions to take more of the holistic view of the role of water in support of livelihood activities of the poor.

This demand a broader understanding of factors affecting availability, access and use of water as a productive asset and how it is combined with other assets, not only to sustain life directly, but also to bring in the income, financial and non financial to sustain livelihood.

CHAPTER FOUR

4.0 PROJECT IMPLEMENTATION

4.1 Introduction

This chapter provide information on how the project was implemented involving original plan of the project, the actual implementation and reports the accomplishment of the project. This chapter carries a heavy weight as it provide step to a step ways and cost as well as arrangements as well as outputs of the projects with the connection to the activities conducted by the research. In otherwise this chapter is a clear picture of the implementation of the project.

4.2 Project Products and Outputs

The expected product and output of this project was a completed project proposal which aimed at sourcing the funds for the purpose of attaining the Communities' objectives of having water supply services closer to their homes. From the initial stage, the project aimed at accomplishing the following activities:

- i) Capacity building to Mumiramira focus discussion group in Preparation and submission of the water supply project proposal to the donors in order to raise funds for the intended project.
- ii) Capacity building; training of water users committee members on water management & water supply scheme management skills.
- iii) Rehabilitation of available water schemes within the community.
- iv) Construction of the water supply scheme within the community settlement.

4.3 Project Planning

The Implementation of the project was based on the different planned activities planned for implementation include; conduct preparation meetings for the project where by different meetings were done including that with water user committees and the community's i.e. public meetings. All meetings were aimed at communicating with the communities and seek their general opinions about the issues affecting them. It was also a process of conducting needs assessment.

During the needs assessment, communities and their leaders showed that they are facing inadequate water supply services in their community and thus they wanted to solve. However, their main problem was how to prepare proposal for fund raising in order to meet their goal. Therefore, a consultant who is CED student support in preparation and conducting capacity building on project formulation and project proposal under which the selected members of the community through focus group will prepare the project proposal for the water supply project fund.

Sustainability of the intended outputs was also considered, and the capacity of the leaders in operations and management were highly needed. Therefore, training of the water user's group leaders was planned. The aim was to build capacity of the leaders in water supply management and operations skills.

Available HESAWA wells, and other bore holes, rivers and rain harvesting schemes which due to lack of skills in rehabilitating them were producing insufficient water supply were also planned to be rehabilitated under this project. Construction of new schemes was regarded as final activity to meet after securing funds.

4.3.1 Implementation plan

Table 21: Logical framework analysis (Improving Community water supply project at Mumiramira village in Ngara)

Narrative Summary	Measurable indicators	Means of Verification	Important Assumptions
Goal: Improve access to community water supply and improve health and living standard of the community.	i. Increased number of people with access to clean and safe water. ii. Incidence of water borne diseases reduced iii. Child mortality rate reduced. iv. Increased community participation in productive economic activities.	i. End of term evaluation Report. ii. Health operation surveys	There will be cooperation among the communities, staff and other district Officials
Purpose: To have sustainable access to water supply closer to the user homes	i. Increased number of inhabitants using clean and safe water ii. Reduced incidence of hygiene related illness. iii. Number of boreholes/shallow wells rehabilitated iv. Number of boreholes/shallow wells constructed.	i. End of term evaluation report ii. Health operation surveys	There will be cooperation among the communities, staff and other district officials
Specific Objectives: i. To increase the proportion of people with access to clean and safe drinking water from 43% to 75% by December, 2012. ii. To improve community health status through Community sensitization on Hygiene promotion and training on sanitation measures. iii. To build the capacity of Mumiramira community in	i. Number/percentage of families access to safe and clean water throughout the year ii. Number of bore holes rehabilitated. iii. Number of bore holes rehabilitated. iv. Reduced communicable disease morbidity and prevalence. v. Increased community knowledge on hygiene and sanitation. vi. Reduced child mortality. vii. Twelve peer educators on hygiene and sanitation practices trained. viii. 1500 students and 50 parents trained on hygiene and sanitation practices	i. Family surveys ii. End of the project evaluation iii. Training report iv. End of the term evaluation	Families will cooperate

iv. water schemes management. Build capacity of the community in project formulation, management and project proposal writing by December 2012.	ix. Reduced health hazards associated with water related problems and diseases x. Number of communities trained in water sources management skills. xi. Water User Committee formed. xii. Number of the community trained in project formulation management and proposal writing. xiii. Completed project proposal for fund raising. xiv. Action plan prepared.		
Outputs: New educated Mumiramira society with basic understanding of project formulation, management and project proposal writing, water management for their own health and economic activities Two OXFARM wells rehabilitated One new bore hole constructed Three traditional wells rehabilitated	Number of villagers involved in the project.	Number of certificates awarded to trained community	
Activities: i. Training on project formulation, management and project proposal writing • A five days training for selected member of the community. ii. Training to community on water sources and management skills. • A five days for selected members of the community preferred leaders. iii. Training to community on	i. Number of the community trained. ii. Number of leaders trained. iii. Contents of the training present for training. iv. Number of OXFARM wells rehabilitated. v. Number of new bore holes constructed.	i. Observation ii. Progress reports ii. Evaluation report v. Training report v. End evaluation report	i. increase of price of materials against estimated price ii. Leaders will participate effectively in the training ii. Trained communities function well and do not leave the community.

hygiene and sanitation. iv. Rehabilitation of six OXFARM wells v. Rehabilitation of traditional bore holes. vi. Construction of three new bore holes.			
(inputs) i. Personnel Project staff, Water consulting Engineer, Civil Consulting Engineer other program staff and trainers. ii. Training equipment iii. Stationeries iv. Fund v. Human resource. vi. Plumbing technicians vii. Pipes viii. Tapes ix. Water Pumps x.	i. Number of staff involved in the project ii. Availability of office stationeries iii. Timely disbursement of the funds from the donor. iv. Amount of funds available from donor v. Number of pipes available. vi. Number of tapes available. vii. Number of water pumps available for installation. viii. Number of villagers available to participate in project implementation.	i. Final assessment report ii. Physical check up iii. Community leaders are well organized and they make follow up of activities implemented. iv. Effectively and efficiently implementation of the project v. Smooth execution of the project activities	i. Communities and staff will play their part in the project ii. Project staff and other partners will be committed to the project iii. Donor will continue with funds disbursement

Source: From field data, 2011

4.3.2 Inputs

Table 22: Quantities and Coast for Each Input

MAJOR ACTIVITIES	SUB ACTIVITIES
To create awareness to stakeholders	Stationeries and photocopying - 10,000
	Allowances to staff who will conduct the exercise 2 x 10,000 x 4 = 80,000
	Cost for hiring venue 100,000 x 2 days = 200,000
	Distribution of letters to all stake holders Fuel 20 lts x 1700 = 34,000
To identify number of villagers who will attend training	Stationery two paper rims and envelopes – 15,000
To outsource facilitator of the program by tendering	Preparation of tender documents
	Stationery one rim of paper – 7,000/=
	Advertise tender on news paper – Three different types of newspapers @ 450,000 = 1,350,000
	Lunch allowance to 6 tender members when opening tender 20,000 x 6 people = 120,000
	Announce the awarded facilitator to 3 different types of newspapers 20,000 x 3 = 60,000
To design training program and course content.	Stationeries Photocopy papers 5 rims @ 7,000 = 35,000
	Printing of course material – printer toner @ 150,000
	Lunch allowance to 4 people for 5 days – 4 x 5 x 10,000 = 200,000
	Allowance for driver for 5 days – 5 x 7,500 = 37,500
	Lunch allowance for 2 assistants for 2 days - 2 x 7,500 x 2 = 30,000
Prepare training venue for project formulation and management	Hiring of venue for conducting training for 5 days @ 100,000 = 500,000

MAJOR ACTIVITIES	SUB ACTIVITIES
	Stationeries for 54 people 60 Ball pen @ 150 = 90,000 4 Flip chart @ 7,000 = 28,000 60 N/book @ 1,000 = 60,000 60 Folders @ 3,000 = 180,000 2 Paper rims @ 7,000 = 14,000
	Transport to and fro training venue 5 m/vehicles @ 100lts x 1700 = 850,000
Prepare training venue for second training	Hiring of venue for conducting training for 5 days @ 100,000 = 500,000
	Stationeries for 54 people 54 Ball pen @ 150 = 81,000 4 Flip chart @ 7,000 = 28,000 54 N/book @ 1,000 = 54,000 54 Folders @ 3,000 = 162,000 2 Paper rims @ 7,000 = 14,000
	Transport to and from training venue 5 m/vehicles @ 100lts x 1700 = 850,000
Rehabilitation of HESAWA Wells	Purchase of new pumps 6x5,000,000 = 30,000,000 Purchase of water purifiers 6x200,000= 1,200,000
Rehabilitation of traditional boreholes	Cleaning of bore holes 6x100,000=600,000 Fencing of the bore holes 6x3,000,000=18,000,000
Construction of 3 new bore hole	Bricks 1200x1000 = 1,200,000 Sand 20tripsx40,000 = 800,000 Stones 20tripsx45,000= 900,000 Cement 320x 18,000 = 5,760,000 Pipes 30x20,000 = 600,000 Pumps 6x8,000,000 =48,000,000
Monitoring progress of the project	Stationery for report writing Lump sum = 20,000
	Fuel for M& E officer Lump sum = 200,000
Evaluate the project	Stationery

MAJOR ACTIVITIES	SUB ACTIVITIES
	Lump sum = 20,000
	Lunch allowance to 2 valuers 2 days $2 \times 2 \times 10,000 = 40,000$

Source: From field data, 2011

4.3.3 Staffing Pattern

The project implementation was supervised by a team of six staffs; Water Engineer, Health Officer, CED student, two Consultants from GAD Consult, and One official from the Donor.

Table 23: Staffing Pattern

STAFF	RESPONSIBILITIES
TEAM LEADER	Responsible for overall leadership and management of the team
ASSISTANT TEAM LEADER	Provide technical support on various development issues to team leader and team members during implementation of the project.
WATER ENGINEER	To provide training and technical support on issues related to water supply, purchase of quality fittings, and guide plumbing technicians.
HEALTH OFFICER	To provide training on health and hygiene related issues and first aid services when ever needed in case of injuries
CED STUDENT	Assists in addressing the primary needs of all community members. Creating and supporting opportunities for community learning through education and skills development, sharing knowledge of the locality.
OFFICIAL FROM DONOR AGENCY	To ensure financial support is available to accomplish the project

Source: From field data, 2011

4.3.4 Project Budget

Table 24: Project Budget

S. N.	BUDGET ITEM/QUARTER	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	Total
	Stationeries	63,600.00	374,000.00	339,000.00	40,000.00	816,600.00
	Printing & photocopy	5,000.00	150,000.00			155,000.00
	Training venue and packages	602,000.00	4,825,000.00	4,825,000.00		10,252,000.00
	Rehabilitation of boreholes	10,000,000.00	14,900,000.00	12,450,000.00	12,450,000.00	49,800,000.00
	Construction of new boreholes	12,000,000.00	14,315,000.00	16,630,000.00	14,315,000.00	57,260,000.00
	Total	22,670,600. 00	34,564,000.00	34,244,000.00	26,805,000.00	118,283,600.00

Source: From field data, 2012

4.4 Project Implementation

4.4.1. Project Implementation Report

4.4.1.1 Community Meetings and the Way Forward

From the initial stage of the project, a CED student managed to meet with the mumiramira village government and latter the entire community of mumiramira village. It was the time where needs assessment was done.

4.4.1.1.1 Output

Three public meetings were convened in which there was a very good attendance. The first meeting was used mainly for introduction to the CED student as well as to get a rough idea on issues prevailing within the community. The second meeting was for needs assessment, whereby communities made prioritization of various issues they thought were the main development challenges in the community.

The last meeting was for finalizing their priorities and selection of other group leaders. New chairperson, secretary and five members were selected to build up a group leadership team.

4.4.1.2 Creation of Community Action Plan

The focus at this stage was on guiding the community members to develop action plans that shall address the most needs on water supply issues, health and economic development issues as revealed in the CNA exercise. This action plan partly serve as the community road map for addressing owns development issues, as well as guide to areas of interest for support from Kabanga Nickel Company Limited.

4.4.1.3 Training on Self Made Projects Formulation

Capacity building through training on self made projects was done and a number of 60 villagers were appointed to participate in training, consideration were taken for those people who knows how to read and write properly and an educated part of that community. The training aimed at imparting skills to the community on the identification of their own problems within their community and to create self made projects and proposal for the community developments projects to attract the donors to fund the implementation of the projects.

4.4.1.3.1 Output

- i. One project proposal on Mumiramira Community Water Supply Project was completed and submitted to the donor for Funding.
- ii. Tshs 35,000,000.00 obtained from donor for rehabilitation exercise.

4.4.1.4 Training on Water Sources and Water Schemes Management

Capacity building through training was done to water users committee on water resources and system management. Before the training, a training needs assessment was done to the organization & leaders. In training needs assessment, various items were looked at. These include organizational analysis, requirements analysis, tasks, skills and knowledge and person analysis. The needs assessment components consist of the collection of the important tasks, knowledge, skills and abilities (KSA) necessary to perform the job. These items were assessed in order to give inputs in designing the training program. The training was designed to impart the committee members with various skills and knowledge, which will be helpful for the project sustainability.

4.4.1.4.1 Output

60 community members participated in the training and acquired skills on;

- i. Simple book keeping and accounting,
- ii. Water tariffs,
- iii. Project rules,
- iv. Operation and maintenance,
- v. System operations,
- vi. Legal and institutional framework,
- vii. Hygiene principles and their relevance

4.4.1.5 Formation of the Water User Committee

A water user committee comprising 12 members was formed of which four are women to oversee the proper running of the project. Primary functions related to this committee were established to include tariff collection, fund management, and oversight of the proper operations of the filter unit, hand pumps, and tapes as well. The water Engineer established guidelines and provided training to water committees to ensure that they are adequately prepared to assume management responsibilities. These guidelines set minimum standards for committee membership and operations to help ensure effective, democratic and transparent operations.

The guidelines specified that members must:

- i) Be elected annually by paying water users
- ii) Agree to serve on the committee without pay, as membership on the committee should be based on a desire to promote project sustainability and good health within the community

- iii) Ensure that one-third of the committee members are women
- iv) Meet formally at least every three month
- v) Hold an annual general meeting to gather formal feedback from users and support future planning.
- vi) Formal training was provided to each of the village Water User Committees covering the following areas;
- vii) Health effects of dirty water, signs and symptoms of water bone diseases, and preventive strategies.
- viii) Guidelines for committee management and work including a code of conduct, leadership principles such as transparency and accountability, and procedures for elections, general meetings and other aspects of a successful committee.
- ix) Guidelines for financial management and accounting of the water fund.
- x) Technical procedures concerning the arsenic removal unit, including details about unit functions, necessary upkeep and maintenance tasks, problem trouble-shooting, and basic repairs
- xi) Review of resources such as lists of local plumbers and other skilled technicians, as well as suppliers of parts.

4.4.1.6 Rehabilitation of Two OXFARM Wells

Two OXFARM wells has been rehabilitated by increasing the depth and replacing the worn out pump, tapes, corks and construction of a storage tank with the capacity of storing 2,000 litres. Also construction of the fencing was done to resist rain water, sand and mud to enter in the wells during rainy season.

4.4.1.7 Construction of New Water Well

Two new water well was constructed at Mukivumu and kabanga hamlets of Mumiramira village with capacity of producing 10,000 litres of water per day.

4.4.2 Project Implementation Ghant Chart

Table 25: Ghant Chart

S/N	OUTPUT	MAJOR ACTIVITIES	SUB ACTIVITIES	TARGET DATE	TIME SCHEDULE				PARTY RESPONSIBLE
					1	2	3	4	
		1. To create awareness to stakeholders	1.1 Stationeries and photocopying - 10,000	01/07/2012					CED student and GAD consultant
			1.2 Allowances to staff who will conduct the exercise $2 \times 10,000 \times 4 = 80,000$						
			1.3 Cost for hiring venue $100,000 \times 2 \text{ days} = 200,000$						
			1.4 Distribution of letters to all take holders Fuel 20 lts x 1700 = 34,000						
		2. To identify number of villagers who will attend training	2.1 Lunch allowance while working extra hours to sort staff who will be trained – $10,000 \times 2 \text{ days} = 20,000$						
			2.2 Stationery two paper rims and envelops– 15,000						

S/N	OUTPUT	MAJOR ACTIVITIES	SUB ACTIVITIES	TARGET DATE	TIME SCHEDULE				PARTY RESPONSIBLE
		3. To outsource facilitator of the program by tendering	3.1 Preparation of tender documents						
			3.1.1 Stationery one rim of paper – 7,000/=						
			3.1.2 Advertise tender on news paper – Three different types of newspapers @ 450,000 = 1,350,000						
			3.1.3 Lunch allowance to 6 tender members when opening tender 20,000 x 6 people = 120,000						
			3.1.4 Announce the awarded facilitator to 3 different types of newspapers 20,000 x 3 = 60,000						
			3.2 Printing of course material – printer toner @ 150,000						
			3.3 Lunch allowance to 4 people for 5 days – 4 x 5 x 10,000 = 200,000						

S/N	OUTPUT	MAJOR ACTIVITIES	SUB ACTIVITIES	TARGET DATE	TIME SCHEDULE				PARTY RESPONSIBLE
			3.4 Allowance for driver for 5 days – 5 x 7,500 = 37,500						
			3.5 Lunch allowance for 2 assistants for 2 days - 2 x 7,500 x 2 = 30,000						
		4. Prepare training venue for proposal writing and project formulation and management	4.1 Hiring of venue for conducting training for 5 days @ 100,000 = 500,000						
			4.2 Refreshment and lunch to 60 participants for 5 days (15,000 x 60 people x 5 days = 6,750,000)						
			4.3 Refreshment and lunch to 4 facilitators for 5 days (4 people x 15,000 x 5 days = 300,000)						
			4.4 Stationeries for 60 people 60 Ball pen @ 150 = 90,000 4 Flip chart @ 7,000 = 28,000 60 N/book @ 1,000 = 60,000						

S/N	OUTPUT	MAJOR ACTIVITIES	SUB ACTIVITIES	TARGET DATE	TIME SCHEDULE				PARTY RESPONSIBLE
			Folders @ 3,000 = 180,000 2 Paper rims @ 7,000 = 14,000						
			Transport to and fro training venue 5 m/vehicles @ 100lts x 1700 = 850,000						
		5. Prepare training venue for water schemes project management.	5.1 Hiring of venue for conducting training for 5 days @ 100,000 = 500,000						CED student and GAD consult.
			5.2 Stationeries for 54 people 54 Ball pen @ 150 = 81,000 4 Flip chart @ 7,000 = 28,000 54 N/book @ 1,000 = 54,000 54 Folders @ 3,000 = 162,000 2 Paper rims @ 7,000 = 14,000						
			Transport to and from training venue 5 m/vehicles @ 100lts x 1700 = 850,000						
		6. Rehabilitation of 6 HESAWA Wells	6.1 Purchase of new pumps 6x5,000,000 = 30,000,000 6.2 Purchase of water purifiers 6x200,000= 1,200,000						

S/N	OUTPUT	MAJOR ACTIVITIES	SUB ACTIVITIES	TARGET DATE	TIME SCHEDULE				PARTY RESPONSIBLE
		7. Rehabilitation of 3 traditional boreholes	7.1 Cleaning of bore holes $6 \times 100,000 = 600,000$ 7.2 Fencing of the bore holes $6 \times 3,000,000 = 18,000,000$						
		8. Construction of 6 new bore hole	8.1 Bricks $1200 \times 1000 = 1,200,000$ 8.2 Sand $20 \text{trips} \times 40,000 = 800,000$ 8.3 Stones $20 \text{trips} \times 45,000 = 900,000$ 8.4 Cement $320 \times 18,000 = 5,760,000$ 8.5 Pipes $30 \times 20,000 = 600,000$ 8.6 Pumps $6 \times 8,000,000 = 48,000,000$						
		9. Monitoring progress of the project	9.1 Stationery for report writing Lump sum = 20,000						
			9.2 Fuel for M& E officer Lump sum = 200,000						
		10. Evaluate the project	10.1 Stationery Lump sum = 20,000						
			10.2 Lunch allowance to 2 valuator 2 days $2 \times 2 \times 10,000 = 40,000$						

CHAPTER FIVE

5.0 MONITORING, EVALUATION AND SUSTAINABILITY

5.1 Introduction

This chapter explains how data and information's were gathered and analysed in order to anticipate problems, formulates solutions, and evaluates program performance. It elaborates how progresses were measured during the different periods of project implementation. It also provides status of the project changes realized so far and the lessons learnt as well as how the communities and other stakeholders plan for next steps to reach their intended project objectives.

5.2 Participatory Monitoring

Participatory community monitoring for Improving of access to community water supply in Mumiramira village in Ngara district. water, makes it possible for community to feel sense of project ownership, development organisation to understand better the community need and understanding, and the community to makes their own decision about water and how it can be used for the community development.

Participatory community monitoring is a strategy for generating community participation in management and decision-making in the community. Participatory community monitoring establishes a process whereby community members share monitoring responsibilities with development organizations, but it is not a tool for measuring project impact. The monitoring of the project was based on the log frame and monitoring and evaluation framework developed as well as work plan.

Monitoring and evaluation framework contained both qualitative and quantitative

verifiable indicators and means of verification. Day to day collection was done accordingly and the information was analyzed based on the requirement. For example, monitoring tool was developed based on work plan and main project objective as follows; to increase the accessibility of clean and safe water supply closer to homes through creation of self made projects by December, 2012.

Indicators for that objective were as follows;

Number of meetings conducted and participants.

Issues discussed and agreed upon in the meetings.

Complemented proposal and submitted to stakeholders for funding.

Number of hired contractors and technicians.

Number of schemes including distribution points (DPs) constructed and completed.

Number of families' access to water supply.

The contents / topics of the training covered.

Participants' feeling about the training i.e. understanding, validity etc.

5.2.1 Monitoring Information System

The fundamental principle of a Monitoring system is to allow users to capture data, process and disseminate information in a systematic way. Monitoring system enables us to measure trends of various indicators based on the data collected in the field.

Under this project, support is given to the beneficiary households and communities to create their own self made projects that can facilitate supply of clean water nearby

their house and boost their health and economical development.

5.2.2 Participatory Monitoring Methods

Participatory Rural Appraisal is one of the most popular and effective approaches to gather information in rural area. This approach is considered shift form paradigm from top-down to bottom-up approach and from blueprint to the learning process. PRA was a method used for monitoring the progress of this project activity.

The PRA tools used during the exercise included:

- i) Community Meeting;
- ii) Use of semi-structured questionnaire;
- iii) Focus group Interviews and
- iv) Observation.

Monitoring exercise was done with collaboration local leaders, villagers and other development partners for collection and analysis of all relevant information. The modality of monitoring involved direct contact with village communities, facilitators and villagers coming face to face at the Mumiramira primary school for five days. Trend Lines did help the project team in seeing how the communities keep tabs on various trends in their village. It will show what the big changes in the village are as regards health, water and economic development issues. This assisted in understanding the stage and proper continuous the project with according to plan.

5.2.2.1 Research Methodology for Monitoring

The objective of the research during monitoring was to collect data that was used to

assess the progress of the project and take appropriate measures if necessary.

5.2.2.1.1 Research Objectives

- i. To assess the ongoing project activities.
- ii. To check whether or not the project was being implemented accordingly
- iii. To assess the progress in meeting the project's goals.

5.2.2.1.1.1 Research Questions

- i. Group administered questions.

There were seven closed questions with their contents designed to assess success of the training.

- ii. Focus Group Discussion questions. The focus group discussion was mainly guided by four general topics and the participants provided lots of information out of these topics.

5.2.2.1.2 Methods Used

5.2.2.1.2.1 Survey

Mc. Graw Hill (2004) define survey as a method of collecting information directly from people about their feelings, motivations, plans, beliefs and personal education and financial backgrounds. The survey method was used to monitor the training activities.

5.2.2.1.2.2 Sampling

Sixty people who participated in the training were selected from the six hamlets of Murusenge, Kabanga, Mumiramira, Maragara, Mukivumu and Karamba.

5.2.2.1.2.3 Sampling Technique

Simple random sampling was used to select heads of household to participate in the training while purposive (Judgmental) sampling technique was used to select leaders and important persons in the village to participate in the training.

5.2.2.2 Research Tools

5.2.2.2.1 Interviews

This method was used to collect data at individual level especially all leaders and community members who attended the training and public meetings. This tool was appropriate as the data collector was able to get feelings and ideas of respondents directly as there was no need for respondent to write.

The method also enabled facilitators to get their opinion on how the training went. A monitoring checklist was used during the interview.

During the interviews the respondents were asked to respond to questions prepared specifically in order to get their understanding on the progress of the project such as what actually the respondent knows about the project and what he or she does not know about the progress of the project so far. It was the time to get opinion of the respondent on the progress and ask them to recommend possible ways to improve the ongoing activities for the sake of achieving the intended objective of the project.

5.2.2.2.2 Reviews of Secondary Data

The method was used in order to know what the communities have done and recorded. Review of meeting minutes and training reports was done in order to

gather data on issues discussed and decisions reached during the community and leaders meetings as well as training done.

The method was necessary not only to know what records were kept by the community but also it was used to assess how project progress is documented as well as the quality of the records kept. It was a time where weaknesses observed were corrected and appropriate information management system based on the information required was designed.

Data collected were from various sources, this included water user group files, government departments files as well as development partner files. Data collected were mainly reports on the progress of the project including challenges and recommendations for improvement. Data was then recorded in the note books for analysis.

5.2.2.2.3 Observation

Observation method was used to check physically the current situation of the project. It was easy for the data collector to visit different proposed areas for the project implementation to check what was going as planned. Because monitoring was done in a participatory way, this method was also used as lesson to the community especially project leaders.

Members in a monitoring team were able to see, discuss and recommend actions to be taken where necessary. It was easy for the project leaders to reach consensus during the discussions as everybody was aware of what was going on for that

particular time. The monitoring team represented by members of the water user group, officials from the health, community development and water departments. Observation involved visiting different sites intended for project implementation. During the visit, notes were carried down to document what had been seen in place according to what had been planned and expected at that particular time. After the visit, members took at least one hour to make reflection of what was seen during the visit and come up with a summary. The summary was documented by CED student. Later on monitoring report was prepared after compilation of other data obtained through other means used.

5.2.2.3 Data Analysis and Findings on Monitoring

Data was collected based on the monitoring and evaluation framework prepared. Data and information on activities done as compared to what was planned was recorded in the notebooks. However, later, CED student used computer to keep all the data and information gained during the monitoring process.

During the data analysis, CED student mostly used to compare different responses and information gathered in different sources like interviews and secondary data. The data was used to check whether the intended activities were going on well as planned or not. It was also used to check any challenges encountered and what action should be taken to overcome those challenges. For example, during the analysis of data, it was observed that purchase of project materials delayed for some weeks from the expected time of delivery. It was later recommended that, implementation plan should be revised to accommodate the changes expected as a result of that delay.

Furthermore, it was also recommended to analyze the consequences that might happen due to the delay of the implementation. The possible consequence predicted was difficulties for implementation if the rainy season would start as usual. Word processing of the data was applied especially for analysis of qualitative data. A progress report was prepared based on the data gathered and conclusion reached. Monitoring team members then shared it and when approved it was kept in the appropriate file.

5.3 Participatory Evaluation

The evaluation of the project was designed objectively to assess the extent to which goal and objectives of the projects have been achieved. Performance indicators outlined in the Logical framework analysis were used as check list during the evaluation of the project. The project was expected to end in December 2013.

Therefore, this evaluation was meant to assess the extent to which the project objectives were achieved by the end of estimated project period. The evaluation was necessary so as to come out with recommendations and the way forward for the future of the project. In doing so, instead of going deep looking into the relevance, efficiency and effectiveness of the project, a total of three key evaluation questions were used as follows:

- i. Did we do what we intended to?
- ii. What did we learn about what was implemented and what was not implemented?
- iii. What do we plan to do with evaluation findings for continuous learning?

5.3.1 Participatory Monitoring Plan

Table 26: Performance indicator

Content Measured	Measurable Indicators
Goal: Improve health status and economical development of Mumiramira village community.	i. Incidence of water borne diseases reduced ii. Child mortality rate reduced
Purpose: To have sustainable access to water supply closer to the user homes	i. Increased number of inhabitants using clean and safe water ii. Reduced incidence of hygiene related illness.
Specific Objectives: Increase the accessibility of water supply to the families of Mumiramira village Community by December 2012 To build capacity of the community in project formulation. Management and project proposal writing. By the end of December 2012 To build capacity of the community in management of the water supply by December 2013	i. Number/percentage of families access to safe and clean water throughout the year ii. water schemes project proposal iii. Number of the community trained in project formulation management and proposal writing iv. Number of communities trained in water sources and management skills
Outputs: New educated Mumiramira society with basic understanding of project formulation, management and project proposal writing, water management for their own health and economic activities	Number of villagers involved in the project.
Activities: i. Training on project formulation, management and project proposal writing • A five days training for selected	i. Number of the community members trained ii. Number of leaders trained iii. Contents of the training

Content Measured	Measurable Indicators
member of the community ii. Training to Water users Group on water sources and management skills •A five days for selected members of the community preferred leaders	
(inputs) i. Personnel Project staff, Water consulting Engineer, Civil Consulting Engineer other program staff and trainers. ii. Training equipment iii. Stationeries iv. funds	i. Number of staff involved in the project ii. Availability of office stationeries iii. Disbursement of the funds from the donor

Source: From field data, 11

5.4 Participatory Evaluation

5.4.1 Performance Indicators

For the participatory evaluation to be conducted successfully and effectively, the following performance indicators were established;

- i) Number of community members with access to water supply near their homes
- ii) Incidence of water borne diseases reduced
- iii) Child mortality rate reduced
- iv) Number/percentage of families access to safe and clean water throughout the year
- v) Number of the community trained in project formulation management and proposal writing
- vi) water schemes project proposal prepared

- vii) Number of communities trained in water sources and management skills
- viii) Increased number of inhabitants using clean and safe water
- ix) Reduced incidence of hygiene related illness.
- x) Number of villagers involved in the project.
- xi) Number of the community members trained
- xii) Number of leaders trained
- xiii) Contents of the training
- xiv) Number of trainees active vis-à-vis who have dropped out
- xv) Evidence of new and creative initiatives
- xvi) Level of utilization or application of new knowledge and skills.
- xvii) Number of caretakers trained.

5.4.2 Participatory Evaluation Methods

5.4.2.1 Focus Group Discussion

The method was used for data collection in different groups in the community. The groups include women, youth's community leaders and district extension officers who were involved in the project. Group discussion involved 50 to 60 people brought together in a single session of approximately an hour to generate ideas and suggest strategies. This method was helpful as project stakeholders were able to share their feelings and opinions about the project.

It was also used to obtain in depth understanding of attitudes, impressions and insights (qualitative data) on variety of issues from the group. The method was also friendly to group members as were able to discuss very open and give his or her opinion where possible. Focus group discussion also helped the participants to learn

from each other the way the project implementation was done and participation of each parties. Group discussion facilitator used five main guiding questions:

- i. Opening question: Tell us your name and how long you have been participating in the program.
- ii. Introductory question: what was it that you first learned about the program?
- iii. Transition Question: Think back to when you first became involved with the program.
- iv. What were your first impressions?
- v. Key question: In what way do you think your life will be different because of your participation on the project?
- vi. Ending question: Is there anything we should have talked about, but we didn't?

5.4.2.2 Participant Observation

Some of the community members from different groups i.e. women, men, youths and leaders participated in observation of activities already done during the implementation of the project. This method was suitable during the evaluation because community members were able to see physically what had already been completed and what was not. It was also easy for the participants to recommend and give their opinion immediately on how to go about in order to complete intended project. During the observation, participants were taking notes on their note books on what was observed. Furthermore, the facilitator of the process (CED student) used observation guideline that would simplify analysis of the observation.

5.4.2.3 Review of Project Records

All documents related to project were reviewed. These included minutes of the meetings, communication between the organization and the donor and other stakeholders involved in the project implementation. The evaluation process was facilitated by the CED student. He used project diary to review some important information documented for the whole period of project implementation.

5.4.3 Project Evaluation Summary

Monitoring and Evaluation Framework (Improving Community Water Supply Project Mumiramira Village Ngara) as shown in Table 27.

5.5 Project Sustainability

The project established on the felt and priority need of the community. During the needs assessment, communities ranked water supply as priority. Therefore strategies were done to solve the problem and meet their desired condition of having sufficient water supply. This guarantee that the project will stay longer as it is established from the real felt need of the community of Mumiramira village.

5.5.1 Community Support

The project is the outcome of community's felt need identified in the Community Needs Assessment exercise. This is a bottom up approach that enables the community themselves to identify their own problem in need of solution. This project has community ownership aspect in it, thus every member of the community own the project and is keen to ensure it continues over years to come.

Table 27: Monitoring and Evaluation Framework (Improving Community Water Supply Project Mumiramira Village Ngara)

Narrative	Evaluation Objectives	Evaluation Indicators	Information to be collected	Methods for information Collection
Overall Objectives To improve health and living standard of the Mumiramira village community	To assess the extent to which the health and living standards of the targeted communities has been improved	i. Availability of water supply closer to the user homes. ii. Incidences of water borne diseases	i. What is the rate of incidences of water borne diseases? ii. What level of families incomes	i. Review of existing documents ii. Semi structures interviews iii. Observations
i. Increase the accessibility of water supply to the families of Mumiramira village Community by December 2013. ii. Build capacity of the community in proposal writing and project formulation by December 2012	To assess the extent to which the families have access to clean and safe water To assess the number of community members with ability to formulate project proposal.	ii. The number of families with access to water supply closer to their homes iii. Number of bore holes constructed. i. The number of communities/leaders trained in project management ii. The use of project	i. How many households with access to water supply? ii. Is the water sufficient for human consumption? iii. How are the leaders utilizing the knowledge given	i. Focus group discussions ii. Observations iii. Water quality testing

Narrative	Evaluation Objectives	Evaluation Indicators	Information to be collected	Methods for information Collection
iii. Build capacity of the community in management of the water supply scheme that will be constructed by December 2012	i. To assess the extent to which communities have the capacity to manage their project.	management tools e.g. record book. iii. Number of meetings conducted iv. Issues Discussed and agreement made in the meetings	through training iv. For how long does the community enjoy water per day/week or month v. What is the average distance and time used by the community to collect water	
Activities Conduct project proposal writing and project formulation training.	To assess the progress and effectiveness of training activity	i. Proposal completion ii. Number of committee members trained iii. Topics covered	i. Is there any problems observed during the implementation? ii. Is the construction followed required standards?	i. Semi structured interview ii. Observation

Narrative	Evaluation Objectives	Evaluation Indicators	Information to be collected	Methods for information Collection
Conduct Water management training to water user's group committee.	To assess the progress and effectiveness of training activity	i. Number of committee members trained ii. Topics covered	i. content of the training package ii. Experience and qualifications of the trainers iii. Facilitation skills of the trainers iv. Participant's feelings on training relevance	i. interview Training reports ii. Interview training participants

Source: From field data, 2011

5.5.2 Presence of Water User Committee

Establishing and training the water committee was a critical strategy in preparing for implementation success and sustainability. The water committee is the key institution that was developed to ensure the ongoing functioning of the community water project. Presence of this committee guarantees successful operations of the water project. All challenges will be dealt with immediate attention of the Water User Committee.

5.5.3 Presence of Trained Caretakers

The Committee hired three local caretakers who monitor the performance of the village water project. The caretakers are responsible for carrying out the technical and operational tasks that are necessary to ensure proper functioning of the units, such as back washing of the units and monitoring water collection. The caretakers are paid a modest monthly salary from the water fund for this service. To ensure that the caretakers have the necessary specialized skills, they participated in initial two day training on maintenance and repairs of the filter unit and other components of the water schemes. The water committee plays a central and ongoing role in monitoring and supervising the caretaker's work. Thus sustainability is guaranteed.

5.5.4 Women's Participation

Women are key stakeholders in ensuring sustainability of this project. As primary collectors of water, and as those responsible for feeding their families and maintaining household hygiene, women are a critical group of potential change agents in communities concerning water consumption and health practices. This

project, with its requirement of at least one-third membership of women on the water committee, and the selection of a woman for health worker position has served and continue to shift such traditional norms. Because they themselves held the same traditional roles in the family as other women, they ensured representation of village women and recognition of their needs in the decision-making process.

5.5.5 Financial Sustainability

The financial aspect of operating and maintaining the system is another key component to ensure project sustainability. With this fund, repair costs and payment of the caretakers is possible. The water user committee collects funds from users at a rate of Tshs. 20 for each cane of 20 litres and is issuing a tariff ticket that eventually shows the amount collected every day. In cases where a water user cannot make a payment the family is not prohibited from using the water, but the committee is tracking such cases to secure payment subsequently.

The water committee collects and deposits funds each month in a bank keeping an accounting book of all financial transactions. In addition, there are two signers for withdrawal of funds from the bank account for repairs or maintenance costs, ensuring that use of funds are well monitored. This guarantees maintenance of the water schemes and caretakers salaries thus ensure continuity of the water project.

5.5.6 Community Experience

Communities through their leaders, have experience in management of the water sources. Currently, the community owns several shallow wells constructed by OXFARM, HESAWA and traditional wells. Following this experience the same

spirit will be applied in the new project because there is no big gap of ideas between the leaders and the users.

Capacity building has been imparted to the community for the sake of increasing knowledge and skills. The aim was to enable leaders to manage and operate the project efficiently and effectively. During the training various important areas were taught. These included simple bookkeeping and accounting, water tariffs, project rules, operation and maintenance, system operations legal and institutional framework. This makes the management of the water schemes possible.

5.5.7 Stake Holders Support

The project has full support from the district authorities and other stakeholders including Kabanga Nickel Company Ltd. Ngara District Council, in its next five years development plans, has put clearly aside the need to have access to water supply for its people in Ngara and its outskirt areas. In order to overcome the problem, the district has approached different donors including the central government for support. It has also encouraged the communities to have their own strategies for facing water shortage challenges in their areas.

Thus, this project has been in line with district plans.

5.6 Challenges

Community volunteering spirit was down as many villagers wanted to participate in project implementation on paid basis something that made the implementation to slow down. Contributors may develop different priorities or sometimes even

different goals. A sufficiently motivated contributor often puts in extra hours for the benefit of the project to make up for the inaction of others. But divergence of goals or ideas at the most basic level can destroy this motivation.

Shortage of skilled plumbing technicians necessitated hiring some of them from Ngara district in order to assist in project implementation.

Many community members were unable to speak Kiswahili and thus the need for a local language translator arisen.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter reviews the results of the work done. It reports objectives that were fully achieved and those not achieved. Factors or conditions that greatly affected the ability to complete the project and achieve all stated objectives are explained. The chapter also provides experience gained during the project implementation. It recommends to others attempting similar project on strategies and best practices. Next steps for smooth implementation of this project are also explained here.

6.2 Conclusion

In summary, the capacity building objective is fully achieved. What remains is just follow up and support to leaders in order to meet their targeted plans. The second objective of improving accessibility to water supply has not yet been achieved. In order to meet it, construction work needs to start immediately as construction materials have already arrived. The delay of supplier to supply construction materials from Dar es Salaam has greatly affected timely completion of the project. This is unexpected occurrence noted during the implementation of the project.

The work done for one and a half years has been very successful to the extent that, it creates hope that in the next few months the goal and objectives of the communities will be achieved. It is successful work because CED student has also managed to meet his objectives of facilitating the process at this point where the main project activities are expected to be completed in the next few months.

The Responsibility of the student was to offer technical assistance to Mumiramira village community. . He becomes a change agent at the disposal of the organization and concentrates in giving advice in various capacities, which was necessary and appropriate. During the needs assessment, communities identified the need to have water supply scheme, but how to secure project proposal for the fund was an issue therefore the CED student as part of GAD consultant create project with a reason of building capacity for the community to be able to prepare projects proposal for the funds that will make their project of the clean and safe water near their houses possible.

So the main service and objective of the student was to support the community in preparation of water supply project design, and conduct capacity building to the community leaders. It is highly expected that the goals and objectives of the project will be met in the next few months after the project completion; successful completion of the project will mean that communities will have access to clean and safe water supply services closer to their home. That means, it will contribute to the improvement of the health and living standards of the target communities. It is also expected that the project will be operational with minimum supervision from the district officials.

Community members in general will have basic skills in management of water sources and water scheme management. Community management has become the framework for implementing water supply systems in rural areas in developing countries. It has yielded significant achievements, but it has not succeeded to supply

water on a large scale and to secure long term sustainability of water supply systems. For that reason institutional support to community managed water systems is needed.

6.3 Recommendations

Based on the survey results, the following are the recommendations for next steps:

Participation of the community towards the project was very good but the community should further be educated on fully participation in the development projects as the main aims of the community development projects is to help the community fights on poverty through availability of their basic needs result. As a water supply scheme is highly expensive, proper study/design and the use of the qualified water contractors and water consultants is recommended in construction of water supply scheme for the better result.

In order to meet the intended objectives for improving accessibility of water supply in the study area, the option recommended by the communities (piped Water Supply scheme) is expensive. It needs a lot of money to complete. The communities themselves may not manage it in a short time. Communities should be facilitated to secure funds for the project from other interested partners including the government if we want to meet one of the national development targets of providing sufficient water supply closer to the user homes by the year 2025.

The size and activities of the project need skilled and committed people who will operate and manage the whole process of project implementation. Therefore, leaders should make sure that all project personnel are recruited, and trained to attain enough

skills required. Community mobilization to participate in the process of project implementation should be strengthened through trainings, contributions in both kind and cash whenever necessary and regular collection of water tariffs, in order to meet the intended objectives as well as sense of ownership and sustainability.

Community participation and involvement of all stakeholders is of paramount importance in implementing this kind of project. People should own the process as well as the facility that will be built in order to achieve the expected. Continuous capacity building to community in managing the facility and the organization will strengthen the sense of ownership and sustainability of the project. This is because, if communities are well trained in management of the water scheme, the water project can be operational without support from outside funding for daily service and maintenance.

There is also a need for literature and government policy and regulation on water management issues as there is no good number of literature on the issues. Also the government should also come with good regulation and policy with reflection on the reality on the ground with the aim of boosting the rural community towards access of their basic needs.

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APPENDICES

Appendix I: Tool for monitoring project activities

Year.....

Item/Area of Concern	Previous Period	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Total to date	% attained to date v/s planned targets
1. No. of projects under implementation - Training on water source Management - Training on Project Formulation - Training on Proposal Writing - Bore holes constructed - Traditional Bore holes rehabilitated - Shallow wells constructed - Traditional Shallow wells rehabilitated - Others TOTAL							
2. No of projects completed: - Training on water source Management - Training on Project Formulation - Training on Proposal Writing - Bore holes constructed - Traditional Bore holes rehabilitated - Shallow wells constructed - Traditional Shallow wells rehabilitated - Others							
TOTAL							
3. No. of beneficiaries (active and potential)							
4. No. of projects with committees							

5. Gender composition in the project committees - Male - Female							

General observations:.....

Filled in by Position.....

DateSignature

Appendix II: Group attendance record (meetings)

Group / Committee.....

Location.....

Members: Men Women..... Total.....

Month	Men	Women	Total	% Attendance	Observations
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

End of Month Average Attendance: Men. Women Total.....

Rate of Attendance In %

Appendix III:

NAME OF GROUPLocation.....

Month Covered by this Report.....

DAILY TOTALS.....

Month	Date	Type of Work Done	Amount of Work Done	Time Taken in Person or Man Days	Monetary Value	Remarks
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23					
	24					
	25					
	26					
MONTH TOTALS	N/A	N/A	N/A			

Comments

.....

.....

NameSignature.....

Position Date

Appendix IV: Group meeting minute sheet**Date of Meeting**.....**Total Group Membership:** Men.....

Women.....Total.....

Group Members Present: Men..... Women..... Total.....*(Plus their presentation by names)***Group Members Absent:** a) With Apology Without Apology.....**Others In Attendance**.....**Day's items of agenda**

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Reading and adopting minutes of previous meeting

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Matters arising from previous meeting

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Resolutions arrived at in (today's) meeting

1.
 2.
-

SignedSecretary.....Date.....

SignedChairperson.....Date.....

Appendix V: Group Membership Register

Name of Group.....

[illegible]